4.1 Aesthetics, Shadow, and Wind

This section describes the existing aesthetic, shadow, light, glare, and wind conditions of the Project site and its surroundings and analyzes how the adoption of the proposed Project may affect those conditions. This section also describes the environmental and regulatory setting relevant to aesthetics, shadow, light, glare, and wind issues in the Project vicinity. Potential impacts are discussed and evaluated, and appropriate mitigation measures as necessary. The analysis in this section is based on field surveys of the Project site, a review of visual simulations and shade/shadow simulations prepared by Bjarke Ingels Group (BIG), a review of a lighting study prepared by Horton Lees Brogden Design (HLB), and review of a Wind Technical Report prepared by Rowan Williams Davies & Irwin Inc. (RWDI) (see Appendix AES, *Aesthetics, Shadow and Wind Supporting Information*). The visual simulations were independently peer reviewed by Environmental Vision, the shade/shadow simulations and Wind Technical Report were independently peer reviewed by ESA, and the lighting study was independently peer reviewed by Lighting Design Alliance and ESA.

This section also analyzes the Maritime Reservation Scenario, focused on environmental conditions, regulations, impacts, and mitigation measures that are different from those identified for the proposed Project.

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

- The project is in a transit priority area.[2]
- The project is on an infill site.[3]
- The project is residential, mixed-use residential, or an employment center.[4]

The proposed Project meets all three of the above criteria because the Project (1) is in a transit priority area, and is situated 0.1 miles from the Oakland Jack London Square San Francisco Bay Ferry terminal and 0.15 miles from an Alameda–Contra Costa Transit District (AC Transit) stop at 2nd and Washington Streets, in which Lines 72, 72M, and 72R together have a frequency of service interval of 15 minutes or less during the a.m. and p.m. peak commute periods; (2) is on an

1 CEQA Section 21099(d)(1).

2 CEQA Section 21099(a)(7) defines a "transit priority area" as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the a.m. and p.m. peak commute periods.

3 CEQA Section 21099(a)(4) defines an "infill site" as either (1) a lot within an urban area that was previously developed; or (2) a vacant site where at least 75 percent of the site perimeter adjoins (or is separated by only an improved public right-of-way from) parcels that are developed with qualified urban uses.

4 CEQA Section 21099(a)(1) defines an "employment center" as a project situated on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

infill site that has been previously developed within an urban area of Oakland; and (3) is a mixed-use project that includes residential uses. Thus, this section does not consider aesthetics, including the aesthetic impacts of light and glare in determining the significance of Project impacts under CEQA.[5] Nevertheless, the City of Oakland (City) recognizes that the public and decision makers may be interested in information about the aesthetic effects of a proposed project; therefore, the information contained in this section related to aesthetics, light, and glare is provided solely for informational purposes and is not used to determine the significance of environmental impacts pursuant to CEQA. The topics of shadow and wind *are*, however, used to determine the significance of environmental impacts under CEQA.

Comments received on the Notice of Preparation (NOP) for this Draft EIR included concerns that lighting and pyrotechnic displays could affect the safety of Port operations and navigation in the Oakland-Alameda Estuary (Estuary). Comments also included concerns regarding views from public spaces along the waterfront and that changes due to the potential aerial gondola should be analyzed to the extent it would change the visual character of the intersection of Water and Washington Streets or contrast with the visual character of the historic district along Washington Street. Comments were also received regarding the design of the proposed Project and its effects on views of and to the shoreline. The extent to which artificial light and glare sources associated with the Project would potentially conflict with safe navigation of vessels in the Estuary is separately addressed in Section 4.10, *Land Use, Plans, and Policies*. To the extent these comments relate to the aerial gondola, this is addressed in Chapter 5, *Project Variants*. All other topics are discussed in this section.

4.1.1 Environmental Setting

Regional Setting

The Project site is along the north shoreline of the Estuary, in the Jack London area of Oakland, in a part that is dominated by the industrial activity generated by the Port of Oakland's marine terminals. The Estuary extends 19 miles from San Leandro Bay to the Oakland–San Francisco Bay Bridge (Bay Bridge), and connects the City of Oakland and the surrounding region to the San Francisco Bay.

Local Setting

Visual Resources

Visual resources typically involve prominent, unique, and identifiable natural features in the environment (e.g., trees, rock outcroppings, islands, ridgelines, and aesthetically appealing open spaces) and cultural features or resources (e.g., regional or architecturally distinctive buildings or structures that serve as focal points of interest).

There are two historic vessels docked near the east border of the Project site that are considered visual resources for the purposes of this analysis. The USS *Potomac* and the Lightship *Relief* are

[5] CEQA Appendix G includes light and glare under the topic of aesthetics. Therefore, light and glare, in addition to aesthetics, is not a CEQA consideration. To the extent that safety impacts related to light and glare would result from conflicts with vessels navigating in the Estuary, this discussion is included in Section 4.10, Land Use, Plans, and Policies.

both National Historic Landmarks that are visible from publicly accessible locations near the Project site (see **Figure 4.1-1**). In addition, the Project site contains four large container cranes, which can rise to a height of more than 200 feet if operational. All four cranes are highly visible from a long range and are visual landmarks along the Estuary.

Figure 4.1-1
Westward View toward the Project Site from the Intersection of Water Street and Clay Street

Scenic Vistas

Scenic vistas may be generally described as panoramic views of a large geographic area for which the field of view can be wide and extend into the distance. Under CEQA, scenic vistas are those that are experienced from publicly accessible locations and include urban skylines, valleys, mountain ranges, or large bodies of water.

The City of Oakland General Plan's Open Space, Conservation and Recreation (OSCAR) Element strives to protect long-range views of San Francisco, Mount Tamalpais, and Lake Merritt. In addition, the OSCAR Element includes objectives to enhance underutilized visual resources, including the waterfront, creeks, San Leandro Bay, and architecturally significant buildings or landmarks, and major thoroughfares (City of Oakland, 1996).

Views from the Project Site

As stated above on pp. 4.1-1 to 4.1-2, the proposed Project is not required to complete an aesthetics analysis pursuant to CEQA Section 21099(d). However, the City recognizes that the public and decision makers may be interested in information about the aesthetic effects of a

proposed Project. Therefore, the aesthetics analysis in this section is consistent with an aesthetics analysis under CEQA, but is for informational purposes only. Under CEQA, private views are not required to be analyzed, and, because Howard Terminal is not currently publicly accessible, views from publicly accessible locations adjacent to the Project site are discussed.

Given the urban nature of the Project setting, views from publicly accessible vantage points around the Project site are primarily limited to the immediate developments adjacent to the site because existing buildings generally obscure longer-range views other than those across the Estuary. In rare instances, fleeting long-range views of the Oakland Hills are available from sidewalks (see **Figure 4.1-2**). As shown in Figure 4.1-1 and **Figure 4.1-3**, due to the waterfront setting of the Project site, short- to mid-range views of the Estuary are abundant.[6]

Figure 4.1-2
View Looking Northeast from the South Terminus of Martin Luther King Jr. Way adjacent to the Project site

Figure 4.1-3
View Looking Southeast toward the Oakland Jack London Square Ferry Terminal adjacent to the Project Site

Views of the Project Site

Close-range views of the Project site are generally limited to those through an existing cyclone fence from Embarcadero West at Clay, Jefferson, and Water Streets and, in particular, from Martin Luther King Jr. Way. The Project site is also partially visible from the Jack London Square ferry terminal and the adjacent waterfront grassy open space, as well as from the north end of Water

6 Short-range (or close-range) views are those of up to about one-half mile from the viewers, while long-range views are those of more than about 4 miles. Mid-range views comprise those at distances between about one-half mile and 4 miles.

Street, at Clay Street, and can also be seen from locations across the Estuary in Alameda. However, from many Alameda locations, existing industrial activities along the shoreline limit waterfront access. For this reason, often the only visible Project site feature are views of the approximately 200-foot-tall cranes. The Project site (again, primarily the cranes) is also visible from the elevated I-880 freeway to the north. As shown in **Figure 4.1-4** and **Figure 4.1-5**, the best close- to mid-range views of the Project site are from the Estuary or its south shoreline (for example, from Bay ferry service). Views of the Project site are available from the Oakland Hills, and in particular, the Mountain View Cemetery (see **Figure 4.1-6**). However, the Project site is not easily discernable from long distances as it tends to blend into the background.

Figure 4.1-4
View Looking West from the Jack London Square Marina

Figure 4.1-5
View Looking Northeast from the San Francisco Bay Ferry on the Estuary

Figure 4.1-6
View Looking Southwest toward the Project Site from the Mountain View Cemetery

Visual Character of the Project Site

"Visual character" is an impartial description of the defining physical features, landscape patterns, and distinctive physical qualities within a landscape. Visual character is informed by the composition of land, vegetation, water, and structures and their relationship to one another and their relative predominance, and by prominent elements of form, line, color, and texture that combine to define the composition of views. Visual character—defining resources and features within a landscape—may derive from notable landforms, vegetation, land uses, building design and façade treatments, transportation facilities, overhead utility structures and lighting, historic structures or districts, or panoramic open space.

The entirety of the Project site is paved or currently developed with buildings and staged containers, parked vehicles, and structures associated with prior or current uses on the Project site. The Project site, when viewed from long-range, conveys openness due to a lack of multi-story buildings. Along the Project site's shoreline, the adjacent Estuary and massive container cranes make previous maritime industrial uses at the site seem obvious. As described further in Section 4.3, *Biological Resources*, natural features within the Project site include non-native American sycamore street trees located along Embarcadero West, Martin Luther King Jr. Way, and Clay Street; and five redwood trees on Embarcadero West at the Market Street entrance to the Project site; and several non-native crimson bottle brush trees which line the Market Street entrance to the Howard Terminal portion of the Project site from Embarcadero West. Landscaped shrubs also occur along Clay Street.

The east portion of the Project site has been occupied by a complex of two buildings historically known as Pacific Gas and Electric Company (PG&E) Substation C (referred to throughout this EIR as "Peaker Power Plant," except where referenced specifically for historic resources consideration), the existing Oakland Fire Station located approximately at Clay and Water Streets, and a surface parking lot at the southwest corner of Embarcadero and Jefferson Street, adjacent to the Peaker Power Plant Variant Power Plant. The Peaker Power Plant has contained power generation equipment for over a century (currently operated by Vistra Energy). The remaining portion of the Project site, primarily Howard Terminal, includes truck parking, loaded and empty container storage and staging, transloading (i.e., logistics) facilities, longshoreperson training facilities, and berthing vessels for maintenance and storage, resulting in a transportation-related and industrial visual character for the Project site.

Visual Character of the Surrounding Area

As shown in **Figure 4.1-7**, which was captured from a drone, the Project site is in an urbanized and industrial area along the north shoreline of the Estuary. The visual character of the surrounding area varies widely depending on the direction from the Project site, therefore visual character is described separately below for each area adjacent to the Project site.

Figure 4.1-7
Aerial View of the Project Site

North (Figure 4.1-8)

To the north, the Project site is bordered by the Embarcadero West and the Union Pacific Railroad (UPRR) tracks, beyond which are industrial/commercial uses (see **Figure 4.1-8**). Except for one four-story live/work building on the opposite side of the UPRR tracks from the Project site, the majority of buildings are one- to two-story industrial/commercial buildings with cement, stucco, or brick facades. The UPRR tracks run along the north edge of the Project site and serve to split the rectilinear street grid pattern between the railroad tracks and downtown Oakland. Due

to the low degree of building and street grid continuity, and because of the high number of surface parking lots, outdoor container storage yards, and industrial equipment and activity, the visual quality in this area is considered low.

Figure 4.1-8
Southwest View toward Project Site
from Martin Luther King Jr. Way

South (Figures 4.1-1, 4.1-3, 4.1-4, 4.1-5, and 4.1-7)

The south portion of the Project site borders the Estuary, which, in its relative narrowness (generally less than 1,000 feet wide), resembles a river when compared to other portions of the bay. The Estuary acts as an edge to the downtown Oakland urban area and is the defining feature of the Project area when viewing the Project site from a long distance. The visual character across the Estuary south of the Project site (in the City of Alameda) near the shoreline is characterized by industrial and transportation-related low-rise buildings, a waterfront trail, and surface parking lots for the Alameda Ferry Terminal. Beyond the shoreline in Alameda, there are local baseball and soccer fields, single-family residential homes, and several low-rise commercial facilities. There is one restaurant across the Estuary to the southeast, and farther east are approximately 20 houseboats directly offshore from a pair of three-story senior living facilities. The topography of this area is flat, and the Project site is visible from limited portions of the Alameda shoreline due to inconvenient and inconsistent public access to the shoreline in Alameda. The Project site is not easily visible from locations beyond the shoreline in the City of Alameda due to the city's flat topography as well as intervening buildings and/or vegetation. However, because the Estuary is a focal point for many land uses surrounding it, the Estuary has relatively high visual quality.

East (Figure 4.1-9)

The east portion of the Project site is adjacent to the San Francisco Bay Ferry Terminal and to Jack London Square. Jack London Square is an approximately 18-square-block, pedestrian-oriented mixed-use office, retail, and entertainment area. In **Figure 4.1-9**, Clay Street dead-ends at the Water Street intersection. Water Street, which connects the Project site to Jack London Square, is a pedestrian-oriented street lined by a mix of buildings.

The visual character of the area is dominated by relatively dense development of generally low- and mid-rise buildings, most having retail space at street level and office space above. As shown in Figure 4.1-9, a variety of building types and heights ranging from one- to seven-story buildings (generally 20–80 feet tall) with large floor plates is typical of the size of buildings in the district.

Figure 4.1-9
View Looking North from the Intersection of Water Street and Clay Street

Jack London Square's rectilinear street grid connects to the street grid of downtown Oakland, helping to orient pedestrians navigating between downtown Oakland and the Estuary. As shown in Figure 4.14-1 in Section 4.14, *Recreation*, two segments of the San Francisco Bay Trail (Bay Trail) run along the Estuary shoreline and along Embarcadero West, adjacent to Jack London Square, terminating at the Ferry Terminal and at the intersection of Washington Street and Embarcadero West. There is a planned segment of the Bay Trail that would make a 90-degree turn toward downtown Oakland on Washington Street, and then another 90-degree turn west along 2nd Street to connect to the existing paved on-street segment of the Bay Trail on the north side of the Project site along 3rd Street (San Francisco Bay Trail, 2019). Outdoor activity and land uses dependent on views of the Estuary, such as dining, suggest that the visual quality of this area is relatively high when compared to the more industrial and commercial activities farther north toward I-880 and downtown Oakland.

West

To the west, the Project site is adjacent to a scrap metal recycling facility owned and operated by the Schnitzer Steel Company, which is directly south of the UPRR tracks and the Southern Pacific Industrial Landscape historic district (see Section 4.4, *Cultural and Tribal Cultural Resources*). This area is characterized by heavy industrial uses, primarily from the shipping activity farther west at the Port of Oakland marine terminals. These existing land uses give the area a discontinuous and industrial feel, which together, have relatively low visual quality.

Overall Visual Quality

The visual quality of the surrounding areas to the south and east is somewhat high, as described above, but the Project site and surrounding areas to the north and west have relatively low visual quality. The mix of surrounding land uses, including industrial, commercial, and transportation-related; the inconsistent street grid; the varying building heights, and relatively unadorned masonry, cement, and wood-framed buildings contribute to the relatively low visual quality of these areas. There are multiple surface parking lots used for car, truck, or container storage, industrial equipment and activity, and various segmented areas enclosed by fencing that contribute to the lack of a cohesive visual pattern.

Light and Glare

There are two types of artificial, or man-made, light sources: (1) direct sources (e.g., illuminated signage, street light poles, vehicle headlights); and (2) indirect sources of reflected light (e.g., reflective or light-colored surfaces). The effect produced by direct and indirect light sources that is perceived as excessive brightness is commonly referred to as "glare." The effect of direct and indirect sources of light are addressed in the analysis of nighttime illumination impacts, and is referred to as spill light. Additionally, both direct and indirect sources are addressed in the analysis of daytime and nighttime glare impacts.

Direct sources of light in the Project area are generally limited to parking lot–style lighting on high-mast poles at the Project site and shorter pole-mounted flood lights at select locations around the perimeter of the Project site directed inward. Street lighting is also present on adjacent city streets, especially Washington Street. These sources of light are typical of a developed urban area. The high-mast pole security and operations lighting on the Port of Oakland property, including Howard Terminal, represent intense nighttime lighting sources (Stahnke, 2019). These nighttime lighting sources at the Project site result in spill light onto adjacent properties and the Estuary. Street lighting on Washington Street is also responsible for substantial spill light.

Direct view of light sources and light from automobile headlights represent sources of nighttime glare. Glare from reflective surfaces on buildings during the day represent a source of daytime glare. Glare from I-880 traffic is not visible from the Project site because the lanes of traffic traveling toward the site are elevated or oriented away from the site. Daytime glare from the sun's reflection on the surface of the Estuary can also be seen in the Project area.

Shadow

Project Site Shadow

Structures on the Project site include loaded and empty containers in storage and staging, transloading (i.e., logistics) facilities, longshoreperson training facilities, four cranes, and light fixtures. The longshoreperson training facilities and transloading facilities are less than 20 feet tall and cast minor shadows at present. The light fixtures are approximately 70 to 85 feet and the four cranes are between 100 to 200 feet; however, these structures comprise relatively thin structural elements and do not cast a substantial amount of shadow compared to the amount of sunlight available across the Project site.

Public Open Spaces

There are no public parks owned and managed by the Oakland Department of Parks, Recreation, and Youth Development in the vicinity of the Project. The nearest park is Jefferson Square Park, located at 6th Street and Martin Luther King Jr. Way, across I-880 approximately 0.3 miles from the Project site.

The nearest public open space on or near the Project site is a path beginning at the entrance to the Lightship *Relief*, which connects to a lawn and waiting area for the San Francisco Bay Ferry, located 300 feet from the east edge of the Project site. These areas are commonly used for walking, taking pictures, sitting, reading, eating, or waiting for the ferry.

Solar Panels and Solar Collectors

Solar panels, also known as photovoltaic solar panels, absorb sunlight as a source of energy to generate electricity. Likewise, solar thermal collectors, commonly known as solar hot water panels, turn the sun's radiation into heat and then transfer that heat into air or water. The nearest solar panels are on the roofs of four adjoining buildings bounded by 3rd Street to the north, Filbert Street to the west, Myrtle Street to the east, and the UPRR tracks to the south, on a building at 2nd and Castro Streets, on three buildings located at the northeast corner of 3rd and Clay Streets, on buildings at 161 and 336 Adeline Street, and on a building at 1221-3rd Street. These receptors are between approximately 100 and 1,200 feet from the proposed Project. There are no solar thermal collectors near the Project site.

Historic Resources

As described above and in Section 4.4, *Cultural and Tribal Cultural Resources*, historic resources located on or near the Project site with potential to be shaded by the proposed Project include the following:

- Two historic vessels (USS *Potomac* and Lightship *Relief*);
- Southern Pacific Railroad Industrial Landscape Area of Primary Importance; and
- Peaker Power Plant (also known as Station C) on the Project site.

The City has received studies with differing conclusions on the historic significance of one of the Port of Oakland cargo cranes, Crane X-422, located on the Project site. If the lead agency determines that the crane is a historic resource, it also has the potential to be shaded by the proposed Project.

Wind

Oakland's Existing Climate and Wind Environment

Based on wind statistics measured at the Oakland International Airport, located approximately six miles southeast of the Project site, wind speeds greater than 15 miles per hour (mph) occur 11.5 percent of the time annually, and 63.3 percent of winds are between 6 and 15 mph. Of the 16 primary wind directions, four occur most frequently: west, west-northwest, west-southwest, and northwest.[7] Generally, winds from the west are predominant in both summer and winter, but secondary winds from the southeast are also prevalent during the winter. **Table 4.1-1** below shows wind speeds at the Oakland International Airport between 1987 and 2017.

TABLE 4.1-1
WIND SPEEDS AT THE OAKLAND INTERNATIONAL AIRPORT BETWEEN 1987 AND 2017

Wind Speed (mph)	Probability (%)
Calm	11.6
1–5	13.5
6–10	36.9
11–15	26.4
16–20	8.7
>20	2.8

SOURCE: RWDI, 2020 (Appendix AES)

Wind Effects on People

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed (Lawson and Penwarden, 1975). Winds up to about 4 mph (average wind speed) have no noticeable effect on pedestrian comfort. With speeds from 4 to 8 mph, wind is felt on the face. Winds from 8 to 12 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 to 18 mph will raise loose paper, dust, and dry soil, and will disarrange hair. For winds from 19 to 24 mph, the force of the wind will be felt on the body. With 25 to 31 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 31 mph cause noticeable inconvenience due to the effort expended during walking, while winds greater than 38 mph make it nearly impossible to walk into the wind and increase difficulty with balance, and stronger gusts at average speeds above 38 mph can blow people over.

Wind Effects from Buildings

Tall buildings and exposed structures can strongly affect the wind environment for pedestrians. A building that stands alone or is much taller than the surrounding buildings can intercept and redirect winds that might otherwise flow overhead and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. This effect is often noticed near the northwest and southwest corners of tall buildings, where prevailing winds from the

[7] While there are 16 primary wind directions (west, west-northwest, northwest, north-northwest, north, etc.), the Wind Technical Report (included in Appendix AES) measured 36 wind directions in 10-degree compass increments.

northwest and west strike west-facing building façades and are redirected and accelerated around the northwest and southwest corners of the building. These redirected winds can be relatively strong and turbulent and may be, in some instances, incompatible with the intended uses of nearby ground-level pedestrian spaces. Moreover, structure designs that present projecting tall flat surfaces square to strong winds can create ground-level winds that can be hazardous to pedestrians. Conversely, a building with a height that is similar to the heights of surrounding buildings typically would cause little or no additional ground-level wind acceleration and turbulence.

Thus, wind impacts are generally caused by large building masses extending substantially above their surroundings, and by buildings oriented so that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. In general, new buildings less than approximately 100 feet in height are unlikely to result in substantial adverse effects on ground-level winds such that pedestrians would be uncomfortable or hazardous wind conditions would result. Such winds may occur under existing conditions, but shorter buildings typically do not cause substantial changes in ground-level winds.

Existing Wind Conditions at the Project Site and in the Vicinity

Wind statistics measured at the Oakland International Airport were used to model wind speeds at the Project site. The Wind Technical Report prepared by RWDI (see Appendix AES) determined that existing wind speeds at the Project site average 27 mph.

4.1.2 Regulatory Setting

State

California Scenic Highway Program

The California Scenic Highway Program protects scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to identified scenic highways. "Officially Designated State Scenic Highways" must have a scenic corridor protection program, or its equivalent adopted by the local jurisdiction, to preserve the scenic quality of the corridor and address land use, development density, earthmoving, landscaping, building design, and outdoor advertising, including billboards, within the corridor. Within Oakland, I-580 from the San Leandro city limit to State Route 24 (post miles 34.5 to 45.1) is an officially designated State scenic highway, and I-80 is an eligible State scenic highway between I-580 and San Francisco, including the Bay Bridge. There are no officially designated or eligible State scenic highways within or adjacent to the Project site.

California Solar Shade Control Act

Under the California Solar Shade Control Act (Public Resources Code Sections 25980–25986), no property owner shall allow a tree or shrub to be placed or to grow so as to cast a shadow greater than 10 percent at any one time between the hours of 10 a.m. and 2 p.m. over an existing solar collector used for water heating, space heating or cooling, or power generation on an adjacent property. These limitations apply to the placement of new trees or shrubs, and do not apply to trees and shrubs that already cast a shadow upon that solar collector. The location of a new solar collector is required to comply with local building and setback regulations, but must be

setback not less than five feet from the property line, and must be no less than 10 feet above the ground (California Legislative Information, 2019).

California Building Standards Code Title 24

Parts 1 and 6 – Outdoor Lighting Zones

In 2001, the California Legislature passed a bill requiring the California Energy Commission (CEC) to adopt energy-efficient standards for outdoor lighting for both the public and private sector. In November 2003, the CEC adopted changes to the Building Energy Efficiency Standards within Title 24. The standards specify outdoor lighting requirements for residential and non-residential development, and are on a three-year update and renewal cycle, along with the other parts of Title 24. The intent of these standards is to improve the quality of outdoor lighting and reduce the impacts of light pollution, light trespass and glare. The standards regulate lighting characteristics, such as maximum power and brightness, shielding, and use of sensor controls to turn lighting on and off. Different lighting standards have been established for four lighting zone classifications. Based on population figures in the 2000 Census, areas can be designated by this State specification system as LZ1 (dark), LZ2 (low), LZ3 (medium), or LZ4 (high). Lighting standards for dark and rural areas are stricter for example, to provide appropriate protection from new sources of light pollution and light trespass. According to the U.S. Census Bureau, the entire Project area is defined as an urban area and is therefore designated as LZ3 per the CEC classification standards (CEC, 2008).

Part 11 – California Green Building Standards Code

The 2016 California Building Standards Code, Part 11, provides requirements for lighting and control equipment and further addresses light trespass and glare. This section also regulates uplighting allowances for fixtures using the "BUG" Backlight Uplight Glare rating method.

Local Plans, Ordinances, and Policies

City of Oakland General Plan

Land Use and Transportation Element (LUTE)

The following City of Oakland General Plan Land Use and Transportation Element policies are relevant to the aesthetics, lighting, shadow, and wind impacts of the proposed Project:

> ***Policy W3.4: Preserving Views and Vistas.*** Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.
>
> ***Policy T6.2: Improving Streetscapes.*** The City should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches, and other support facilities.
>
> ***Policy N1.5: Designing Commercial Development.*** Commercial development should be designed in a manner that is sensitive to surrounding residential uses.
>
> ***Policy T6.5: Protecting Scenic Routes.*** The City should protect and encourage enhancement of the distinctive character of scenic routes within the City, through prohibition of billboards, design review, and other means.

Policy N9.5: Marking Significant Sites. Identify locations of interest and historic significance by markers, signs, public art, landscape, installations, or by other means.

Policy N8.2: Making Compatible Interfaces between Densities. The height of development in urban residential and other higher density residential areas should step down as it nears lower density residential areas to minimize conflicts at the interface between the different types of development.

Policy W10.7: Jack London Square Area Design Criteria. Developments in this area should be designed to enhance direct access to and along the water's edge, maximize views and vistas, and make inviting public access and spaces.

Open Space, Conservation and Recreation Element (OSCAR)

The Open Space, Conservation and Recreation Element (OSCAR) promotes the preservation and good design of open space, and the protection of natural resources to improve aesthetic quality in Oakland. The following OSCAR objectives and policies are relevant to the aesthetics, shadow, and wind impacts of the proposed Project:

Policy OS-9.3: Gateway Improvements. Enhance neighborhood and city identity by maintaining or creating gateways. Maintain view corridors and enhance the sense of arrival at the major entrances to the city, including freeways, BART lines, and the airport entry. Use public art, landscaping, and signage to create stronger City and neighborhood gateways.

Objective OS-10: Scenic Resources. Protect scenic views and improve visual quality.

Policy OS-10.1: View Protection. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.

Policy OS-10.2: Minimizing Adverse Visual Impacts. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.

Policy OS-10.3: Underutilized Visual Resources. Enhance Oakland's underutilized visual resources, including the waterfront, creeks, San Leandro Bay, architecturally significant buildings or landmarks, and major thoroughfares.

Objective OS-11: Civic Open Spaces. To maintain and develop plazas, pocket parks, pedestrian walkways, and rooftop gardens in Oakland's major activity centers, and enhance the appearance of these and other public spaces with landscaping and art.

Policy OS-11.2: New Civic Open Space. Create new civic open spaces at BART Stations, in neighborhood commercial areas, on parking garages, and in other areas where high-intensity redevelopment is proposed.

Policy OS-11.3: Public Art Requirements. Continue to require public art as a part of new public buildings or facilities. Consider expanding the requirement or creating voluntary incentives to private buildings with substantial public spaces.

Action OS-11.3.1: Expanded Private Role in Providing Public Art. Study possible approaches to expanding the private sector's role in the city's public art program. Options should include development incentives (density bonuses) and an in-lieu fee based on square footage for major downtown development.

Policy OS-11.4: Siting Public Art. Site public art with sensitivity to its surroundings. Locate public art in a manner which does not reduce useable open space in City parks or impede recreational activities.

Objective OS-12: Street Trees. "Green" Oakland's residential neighborhoods and commercial areas with street trees.

Policy OS-12.1: Street Tree Selection. Incorporate a broad and varied range of tree species which is reflected on a city-maintained list of approved trees. Street tree selection should respond to the general environmental conditions at the planting site, including climate and micro-climate, soil types, topography, existing tree planting, maintenance of adequate distance between street trees and other features, the character of existing development, and the size and context of the tree planting area.

Historic Preservation Element

In March 1994, the Oakland City Council adopted the Historic Preservation Element of the Oakland General Plan (amended July 21, 1998). The following Historic Preservation Element goals address historic resources and visual resources:[8]

Goal 1: To use historic preservation to foster economic vitality and quality of life in Oakland by maintaining and enhancing throughout the City the historic character, distinct charm, and special sense of place provided by older properties; establishing and retaining positive continuity with the past thereby promoting pride, a sense of stability and progress, and positive feelings for the future; and preserving and encouraging a city of varied architectural styles and environmental character, and

Goal 2: To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

Scenic Highways Element

The Scenic Highways Element of the Oakland General Plan seeks to protect and enhance the distinctive character of scenic routes within the City. I-580 is identified as a designated scenic route in the Scenic Highways Element. I-980 is identified as a route that could be considered for possible future designation.

Oakland Municipal Code

The City and the Port are cooperating to establish a shared regulatory framework under which the City will, in its processing of the Project approvals and City building permits for the Project,

[8] See also Section 4.4, *Cultural and Tribal Cultural Resources*, for a more detailed discussion of the Historic Preservation Element.

apply all relevant requirements, ordinances, policies, and codes typically employed in its ordinary course of business. This includes the following provisions of the Oakland Municipal Code relevant to aesthetics:

Title 8: Health and Safety

- **Chapter 8.10: Graffiti.** This chapter is to protect public and private property from acts of defacement by graffiti.
- **Chapter 8.24: Property Blight.** This chapter requires a level of maintenance of residential, commercial, and industrial property that will protect and preserve the livability, appearance, and social and economic stability of the City.

Title 12: Streets, Sidewalks and Public Places

- **Chapter 12.36: Protected Trees.** It is the interest of the City of Oakland and the community to protect and preserve trees by regulating their removal; to prevent unnecessary tree loss and minimize environmental damage from improper tree removal; to encourage appropriate tree replacement plantings; to effectively enforce tree preservation regulations; and to promote the appreciation and understanding of trees.

Title 17: Planning

The City and the Port are cooperating to establish a shared regulatory framework under which the City will apply all relevant provisions of the Oakland Planning Code, Title 17 of the Oakland Municipal Code, to the Project. Title 17 includes design review procedures and also outlines sign limitations, height restrictions, usable open space requirements, and minimum yards for residential developments located in each zone. The following would apply to the proposed Project:

- **Chapter 17.124: Landscaping and Screening Standards.** This chapter prescribes standards for development and maintenance of planting, fences, and walls; for the conservation and protection of property; and through improvements of the appearance of individual properties, neighborhoods, and the City.
- **Chapter 17.136: Design Review Procedure.** In accordance with Chapter 17.136 of the Oakland Planning Code, future individual cumulative development projects would be subject to Design review. Design review considers the visible features of a project and the project's relationship to its physical surroundings. Although independent of CEQA and the EIR process, design review is focused on ensuring quality design, and on avoiding potentially adverse aesthetic effects. Projects are evaluated based on site, landscaping, height, bulk, arrangement, texture, materials, colors, appurtenances, potential shadowing effects on adjacent properties, and other characteristics.

Oakland Bird Safety Measures

The City of Oakland Bird Safety Measures policy requires a reduction of light pollution, which can be achieved in multiple ways including:

- Extinguishing architectural lighting during bird migration season;
- Using time-based or occupancy-based controls between 11:00 p.m. and sunrise; and
- Avoiding beams of light during spring and fall migration.

Assembly Bill (AB) 734, which is a requirement of the Project, requires that the design and implementation of the Project comply with these measures. AB 734 also requires that nighttime programming apply best management practice strategies to avoid and reduce potential collision hazards for migratory and resident birds to the extent feasible.

Refer to Section 4.3, *Biological Resources*, for a discussion of light and glare impacts and mitigation measures pertaining to bird safety.

Oakland Outdoor Lighting Standards

The City of Oakland Outdoor Lighting Standards is applicable to private development projects on public rights-of-way. As such, the requirements in the standard are assumed to apply to all new roadways constructed within the Project boundaries. Requirements include general glare, light trespass, and light pollution mitigation measures such as using full-cutoff luminaires wherever available and avoiding bare light sources (bulbs). In addition, the standard provides specific lighting equipment guides relevant to street and pedestrian light pole heights.

Port of Oakland Exterior Lighting Policy

The Port of Oakland requires Port tenants to comply with the Port's light trespass minimization measures to prevent potential light pollution that may be generated by development and to conserve energy. However, the City and the Port are cooperating to establish a shared regulatory framework under which the Project will be subject to the City of Oakland's Outdoor Lighting Standards described above.

4.1.3 Significance Criteria

The City of Oakland has established thresholds of significance for CEQA impacts that incorporate those in Appendix G of the State CEQA Guidelines (City of Oakland, 2016).

For informational purposes, this section describes potential impacts related to aesthetics, including light and glare, that could result from implementation of the proposed Project. As noted on page 4.1-1, CEQA Section 21099(d) states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." The Project meets all three criteria; thus, this section does not consider aesthetics, including the aesthetic impacts of light and glare, in determining the significance of project impacts under CEQA, but a discussion of the criteria that relate to aesthetics, including light and glare is provided for informational purposes and to evaluate the merits of the Project. Accordingly, the following topics related to aesthetics are not considered as part of determining the Project's significance under CEQA, but are presented for informational purposes:

1. Have a substantial adverse effect on a public scenic vista (informational discussion; not subject to CEQA);[9]

[9] NOTE: Only impacts to scenic views enjoyed by members of the public generally (but not private views) are potentially significant.

2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway (informational discussion; not subject to CEQA);
3. Substantially degrade the existing visual character or quality of the site and its surroundings (informational discussion; not subject to CEQA); and
4. Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area (informational discussion; not subject to CEQA);

This section also describes potential CEQA impacts related to shade, shadow, and wind that could result from implementation of the proposed Project. The Project would have a significant adverse impact under CEQA related to shadow and wind if it would:

1. Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resources Code Sections 25980–25986);
2. Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
3. Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
4. Cast shadow on an historic resource, as defined by state CEQA Guidelines Section 15064.5(a), such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, Local Register of historical resources, or a historical resource survey form (DPR Form 523) with a rating of 1–5;
5. Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or
6. Create winds that exceed 36 mph for more than one hour during daylight hours during the year.[10]

The changes to Appendix G of the State CEQA Guidelines effective in December 2018 were intended to reflect recent changes to the CEQA statutes and court decisions. Many of these recent changes and decisions are already reflected in the City's adopted significance thresholds, which have been used to determine the significance of potential impacts. To the extent that the topics or questions in Appendix G are not reflected in the City's thresholds, these topics and questions have been taken into consideration in the impact analysis below, even though the determination of significance relies on the City's thresholds. Specifically, the discussion of visual character and

[10] NOTE: The wind analysis only needs to be done if the project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., the Estuary, Lake Merritt, or San Francisco Bay); or (b) the project is located in Downtown. Downtown is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Estuary to the south and I-980/Brush Street to the west. The wind analysis must consider the project's contribution to wind impacts to on- and off-site public and private spaces, where applicable. Only impacts to public spaces (on- and off-site) and off-site private spaces are considered CEQA impacts. Although impacts to on-site private spaces are considered a planning-related non-CEQA issue, such potential impacts still must be analyzed.

quality in topic "c" pertains to public views in non-urbanized areas, whereas for projects in urbanized areas, Appendix G suggests that the analysis consider whether the project would conflict with applicable zoning and other regulations governing scenic quality.

Approach to Analysis

The analysis in this section is based on field surveys of the Project site and a review of visual simulations and shade/shadow simulations prepared by BIG, a lighting study prepared by HLB, as well as a Wind Technical Report prepared by RWDI (see Appendix AES). All of these studies were reviewed for accuracy by the EIR preparers. The methodology for analysis of impacts includes an assessment of both construction and operational impacts.

As described in Chapter 3, *Project Description*, for the purposes of this EIR and to be conservative and anticipate the maximum impacts possible during buildout, construction of Phase 1 is assumed to take 2.5 years and development of the remainder of the Project site, referred to as Buildout (or full buildout) could theoretically occur after 7 years; however, the timing of construction of the Project would be dependent on market conditions, and is likely to extend over a longer time frame.

Visual Simulations

The analysis in impacts AES-1 and AES-2, below, is aided by the visual simulations prepared by BIG, which document views of, through, and toward the Project site. Five visual simulations were prepared from five representative locations known as "key viewpoints." These identified viewpoints are publicly accessible observation points from locations that can see or be seen from the Project site (Table 4.1-2 and Figure 4.1-9 in the Impacts discussion). Viewpoints were selected by the Oakland Planning Department in consultation with ESA and Environmental Vision to represent (1) typical views from common types of viewing areas, such as public sidewalks near residential areas with exposure to the Project; or (2) specific high-sensitivity areas such as parks, scenic viewpoints, scenic resources, and historic resources whose context could be affected by development of the Project. The five viewpoints were selected to capture a representative sample of existing views of and from the Project site in terms of both sensitive viewing locations, such as public recreational uses, and publicly accessible views near the Project area.

The visual simulations were prepared based on a simple massing plan of the proposed Project and are not based on actual building designs because detailed building plans are not yet available. The building massing included in the simulations illustrates the maximum allowable building envelopes only, and actual building designs are likely to include features such as setbacks, modulation, and potential variation in the depths of façade planes, and would include fenestration (windows). Therefore, the visual simulations can be considered a conservative depiction of potential visual changes that would result from the Project.

The cumulative visual simulations incorporate a three-dimensional model of downtown Oakland based on potential buildout under the proposed Downtown Oakland Specific Plan, which is discussed in Section 4.0, *Introduction to the Environmental Analysis*. Also included in the cumulative model are two major projects located in the approved West Oakland Specific Plan area: the West Oakland Station project and 500 Kirkham Street, both of which are also discussed

in Section 4.0. The two large projects approved in Alameda that are discussed in Section 4.0—Alameda Point (redevelopment of the former Naval Air Station Alameda) and the Alameda Landing project—are not included in the 3D model upon which the visual simulations are based. This is because, although both are large projects, neither would be readily discernible in the two visual simulations in which these projects are in the field of view. In the cumulative visual simulation from Viewpoint 3 (Bay Bridge; see Figure 4.1-22), neither the tallest buildings permissible at Alameda Landing (up to 85 feet) nor the tallest buildings that could be developed at Alameda Point (up to 100 feet) would be readily discernible because of intervening structures and the relatively low elevation of the viewpoint (about 110 feet above sea level). In the cumulative visual simulation from Viewpoint 4 (Mountain View Cemetery; see Figure 4.1-23), both the Alameda Landing project and most of the tallest potential buildings at Alameda Point would be largely obscured by cumulative development in downtown Oakland.

Light and Glare

The analysis in this chapter evaluates the effects of new sources of artificial light and glare that would be introduced by the Project and the extent to which these light and glare sources, including illuminated signage, would spill off the Project Site onto off-site light-sensitive uses; the extent to which artificial light and glare sources associated with the Project would potentially conflict with safe navigation of vessels in the Estuary is separately discussed in Section 4.10, *Land Use, Plans, and Policies*. A quantitative analysis was prepared to assess whether light trespass (spill light), glare, and contribution to light pollution would be significant (see Appendix AES). Due to the lack of standards, codes, or ordinances within Oakland, Alameda County, and the Bay Area in general regarding obtrusive light definitions, the international standards established in the International Commission on Illumination (CIE) Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations, 2nd Edition (CIE, 2017) is being used to determine the impact of light and glare. The CIE guide is the primary document from the international standards-setting body that provides guidance on limiting obtrusive light. The recommendations included in this guide are intended to apply broadly to new construction and existing installations. The guide includes metrics that can be the basis for evaluating light trespass (spill light) and glare and contributions.

Quantitative results of spill light and glare from the proposed Project were compared against industry-standards from the CIE guide. The standards in this guidance document for the "E4" Environmental Lighting Zone (high district brightness, typically city centers and other commercial areas), are 25 lumens per square meter (lux) pre-curfew, or 5 lux post-curfew.[11,12] For reference, one 60-watt incandescent light bulb will generate five lux at a distance of approximately 3.5 meters (11.5 feet), or 25 lux at a distance of 1.6 meters (5.25 feet). The CIE standard for glare, also referred to as luminance, is 25 candela per square meter (cd/m^2) at building facades, or 1,000 cd/m^2 on signage. For the purposes of this informational analysis, the

[11] "Lux" is the measure of illumination cast on a surface. For reference, one 60-watt incandescent light bulb will generate 1 lux at a distance of approximately 26 feet.

[12] Pre-curfew is the time of the day when businesses are expected to be open. Post-curfew is the time of day after businesses are closed and before sunrise.

CIE standards are used for determining whether the proposed Project would have significant effects if the proposed Project were subject to an aesthetics analysis pursuant to CEQA.

Due to the variation in the surrounding land uses, quantitative thresholds were used to inform whether the proposed Project would create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area. The assessment in Impact AES-3 considers these quantitative results in addition to the sensitivity of the receptor locations.

Shadow

Shadow graphics were prepared by BIG based on the same model used in preparation of the visual simulations and peer reviewed by ESA. The shadows were digitally "cast" using a CAD-based program and accounting for topography and existing buildings. As with the visual simulations, the model used in the shadow analysis was based on a simple massing plan of the proposed Project and not on actual building designs because detailed building plans are not yet available. The building massing included in the shadow model illustrates the maximum allowable building envelopes only, and actual building designs are likely to include features such as setbacks, modulation, and potentially variation in the depths of façade planes, all features that could reduce shadow cast by Project buildings. Therefore, the shadow analysis can be considered a conservative evaluation of potential shadow that would result from the Project.

Wind

Wind statistics from Oakland International Airport were combined with the wind tunnel data to predict the frequency of wind speeds at the Project site and in its vicinity. The wind tunnel test was conducted using a 1:300 (1 inch = 25 feet) scale model of the proposed Project and surrounding buildings within an approximately 1,500-foot radius of the Project site, which is sufficient to encompass buildings on the site as well as nearby buildings that could affect winds on and near the site. The study area extends west approximately to Linden Street, north to Second Street, and east to Washington Street. The test area also extends south into the Estuary.

As described above for both the visual simulations and shadow analysis, the wind tunnel model was based on a simple massing plan of the proposed Project and not on actual building designs because detailed building plans are not yet available. The building massing included in the wind tunnel model illustrates the maximum allowable building envelopes only, and actual building designs are likely to include features such as setbacks, modulation, and potentially variation in the depths of façade planes, all features that would reduce pedestrian-level wind speeds. Therefore, the wind tunnel analysis can be considered a conservative evaluation of potential changes in wind speeds that would result from the Project.

Wind tunnel tests were conducted for the Project site and vicinity using the following scenarios:

- Existing
- Existing + Phase 1
- Existing + Phase 1 + Full Buildout
- Existing + Phase 1 + Full Buildout + Variants

- Existing + Phase 1 + Maritime Reservation Scenario Buildout
- Existing + Phase 1 + Full Buildout + Cumulative

The scale model, which was equipped with permanently mounted wind speed sensors, was placed inside an atmospheric boundary layer wind tunnel. The model had 169 at-grade wind speed sensors (also known as wind sensor test points) in publicly accessible public spaces to measure mean and gust wind speeds at an equivalent full-scale height of approximately 5 feet above ground.[13] An additional 10 test points were located on the proposed ballpark roof, which may be a privately owned publicly accessible open space. For each scenario, wind speeds were measured and compared with item "j" in the City of Oakland's significance criteria in Section 4.1.3 above.

Topics Considered and Determined to Have No Impact

The Project was determined to have no impact on the following topic based on the proposed Project characteristics and its geographical location. Therefore, this topic is not addressed further in this document for the following reasons:

- ***Criterion 5: Landscaping, that would now, or in the future, cast substantial shadows on existing solar collectors (in conflict with California Public Resources Code Sections 25980–25986).*** The nearest solar collectors are at 101 Myrtle Street and 333 Clay Street, approximately 100 and 650 feet from the proposed Project, respectively. The proposed Project's street trees could grow up to 100 feet tall, but the maximum shadows from these trees would not reach solar panels located on the roof of these buildings (15- to 45-foot roof height) and thus would not cast shadow on these collectors. The proposed Project would have no impact with respect to this topic.

4.1.4 Impacts of the Project

As described under Section 4.1.3, *Significance Criteria*, above, the proposed Project is located on an infill site within a transit priority area. Therefore, pursuant to CEQA Section 21099(d), aesthetics, light, and glare are not used to determine the significance of Project impacts under CEQA and the discussion in AES-1 and AES-2 are included below for informational purposes.

Scenic Vistas and Scenic Resources

Impact AES-1: The Project would not have a substantial adverse effect on a public scenic vista or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a State or locally designated scenic highway. (Criteria 1 and 2) (*Less than Significant, but not a CEQA Consideration*)

Construction Impacts

Phase 1 and Buildout – Construction

I-580 is a State Scenic Highway from the San Leandro city limits to State Highway 24 in Oakland. The Project site is approximately two miles from the nearest point along I-580 and from I-80. Due to this distance, and because of intervening development and vegetation, construction of the proposed Project would not substantially interfere with views of scenic resources for

[13] The existing scenario had 149 wind test points; 20 sensors were added to evaluate the effects of Phase 1 development, and two sensors were removed for Full Buildout to accommodate the building on Block 20.

motorists on I-580. Therefore, the proposed Project would not adversely affect designated State Scenic Highways. The analysis below pertains to scenic vistas more generally and discusses whether construction of the proposed Project would have a substantial adverse effect on a scenic vista. As stated above under the heading "Visual Resources," the City of Oakland General Plan OSCAR Element strives to protect long-range views of San Francisco, Mount Tamalpais, and Lake Merritt. In addition, the OSCAR Element includes objectives to enhance underutilized visual resources, including the waterfront, creeks, San Leandro Bay, and architecturally significant buildings or landmarks, and major thoroughfares (City of Oakland, 1996).

For the purposes of this analysis, Figures 4.1-1 to 4.1-6 presented in Section 4.1.1, *Environmental Setting*, include some of the elements described in the OSCAR Element as comprising a scenic vista in the General Plan. Figure 4.1-1 includes views of historic resources (the USS *Potomac* and the Lightship *Relief*), Figure 4.1-2 shows fleeting views of the Oakland Hills, Figure 4.1-3 shows views of the Estuary, Figure 4.1-4 shows how the existing container cranes dominate the visual character of the Project site given the lack of other substantial development on the site. Figure 4.1-5 shows long-range views of Oakland from the San Francisco Bay Ferry in the Estuary, while Figure 4.1-6 shows long-range views from the Mountain View Cemetery.

During construction, staging areas for grading, excavation, and storage of construction equipment, as well as temporary structures and off-site vehicles hauling construction materials to or from the Project site, could be visible from public vantage points. In addition, construction would involve materials storage areas and storage associated with construction debris piles, which could become a public nuisance if not properly shielded. Exposed trenches, roadway bedding (soil and gravel), and spoils/debris piles would be visible, at least for limited periods, during construction of the utility infrastructure improvements.

Construction elements may be visible to area residents, employees, and visitors during construction of the Project. The visual changes resulting from construction activities, especially in urban environments, are a common and generally accepted feature of the urban environment. While construction activities and equipment would be visible and noticeable, they would not substantially block views of historic resources such as the USS *Potomac* and Lightship *Relief* from nearby publicly accessible vantage points, nor would they obstruct views of the Oakland Hills or downtown Oakland skyline from sidewalks adjacent to the Project site. For these reasons, construction impacts of the proposed Project would not substantially affect existing scenic views.

Operational Impacts

As described above in *Approach to Analysis*, the operational impacts analysis below is aided by the visual simulations prepared by BIG, which document views of, through, and toward the Project site. The locations of the five visual simulations are described in **Table 4.1-2** and shown in **Figure 4.1-10**.

TABLE 4.1-2
VIEWPOINT LOCATIONS

View No.	View Description
1	Westward view across Project site from the intersection of Water Street and Clay Street
2	Southwest view toward Project site from Martin Luther King Jr. Way
3	Southeast view toward Project site from the San Francisco-Oakland Bay Bridge
4	Southwest view toward Project site from Mountain View Cemetery
5	Northeast view toward Project site from the San Francisco Bay Ferry on the Estuary

SOURCE: ESA, 2020

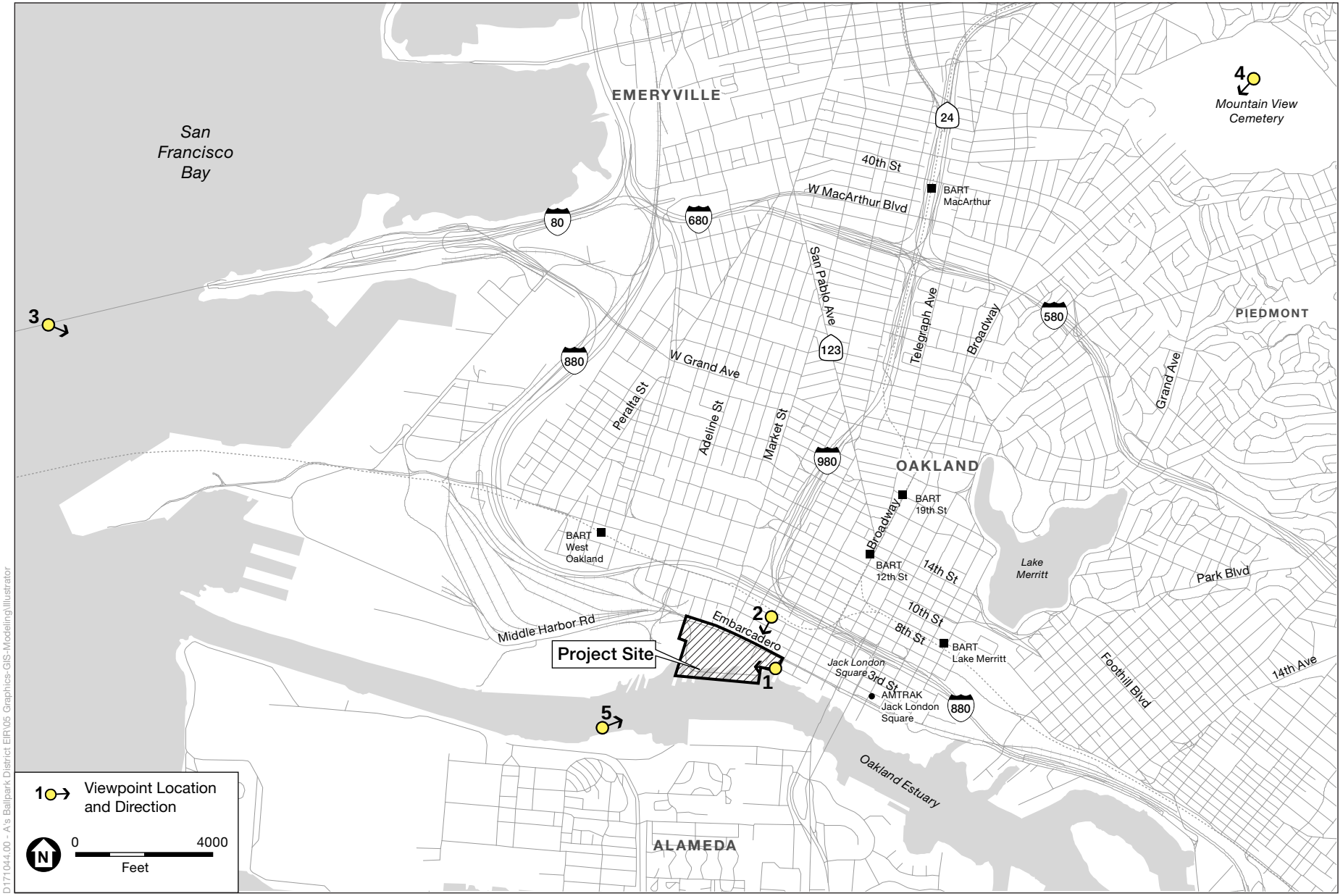
Phase 1 and Buildout Operations

Operation of Phase 1 of the proposed Project would include a 130-foot-tall ballpark, buildings on up to five development blocks between 100 and 350 feet tall, and landscape improvements such as street trees, furniture, and public art. Operation at full buildout would include the aforementioned components in addition to up to 11 other buildings at the Project site between 50 and 600 feet tall, not including rooftop mechanical equipment, staircases, and elevator overruns, which could add up to an additional 20 feet. The pace of buildout of the proposed Project would be dependent on market demand, financial feasibility, and construction practicalities, however, for the purposes of this CEQA analysis, it is conservatively assumed to be completed over 7 years.

The proposed Project would not likely be noticeable to motorists on I-580 because of the two-mile distance between the Project site and the freeway, and intervening trees and development, but it would be visible to pedestrians and motorists traveling east on I-80 across the Bay Bridge. Figures 4.1-15 (Phase 1) and 4.1-16 (full buildout) show the view a pedestrian would see from the bike path on I-80 at the Bay Bridge, looking southeast. Phase 1 and buildout of the proposed Project would be clearly visible from the bridge, although the panoramic views of the Oakland Hills, the Bay, and the downtown Oakland skyline would still be available. The proposed Project would not introduce features that would substantially interfere with views of these scenic resources. Therefore, the Project's operational impacts to the State Scenic Highway system related to scenic resources would be less than significant if the proposed Project was subject to a review of aesthetics under CEQA. The analysis below pertains to scenic vistas more generally and discusses whether operation of the proposed Project would have a substantial adverse effect on a scenic vista.

Key Viewpoint 1 (Figures 4.1-11 and 4.1-12)

The view in **Figure 4.1-11** (existing conditions and Phase 1) and **Figure 4.1-12** (existing conditions and full buildout) are the same as that in Figure 4.1-1 (from the north end of Water Street at Clay Street). As shown in the figures, two historic vessels (the USS *Potomac* and the Lightship *Relief*) are visible in the foreground and would continue to occupy the foreground with implementation of the proposed Project. Under Phase 1 and full buildout conditions, the proposed Project development would be visible in the middle background. Under existing conditions, the



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SOURCE: Environmental Vision, 2019; adapted by ESA in 2019

Oakland Waterfront Ballpark District Project

Figure 4.1-10
Key Viewpoint Map

ESA

EXISTING

PHASE 1

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-11
Visual Simulation for Key Viewpoint 1 (Existing and Phase 1)
Westward View Across Project Site from the Intersection of Water Street and Clay Street

ESA

EXISTING

FULL BUILDOUT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

SFO\170XX\D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-12
Visual Simulation for Key Viewpoint 1 (Existing and Full Buildout)
Westward View Across Project Site from the Intersection of Water Street and Clay Street

ESA

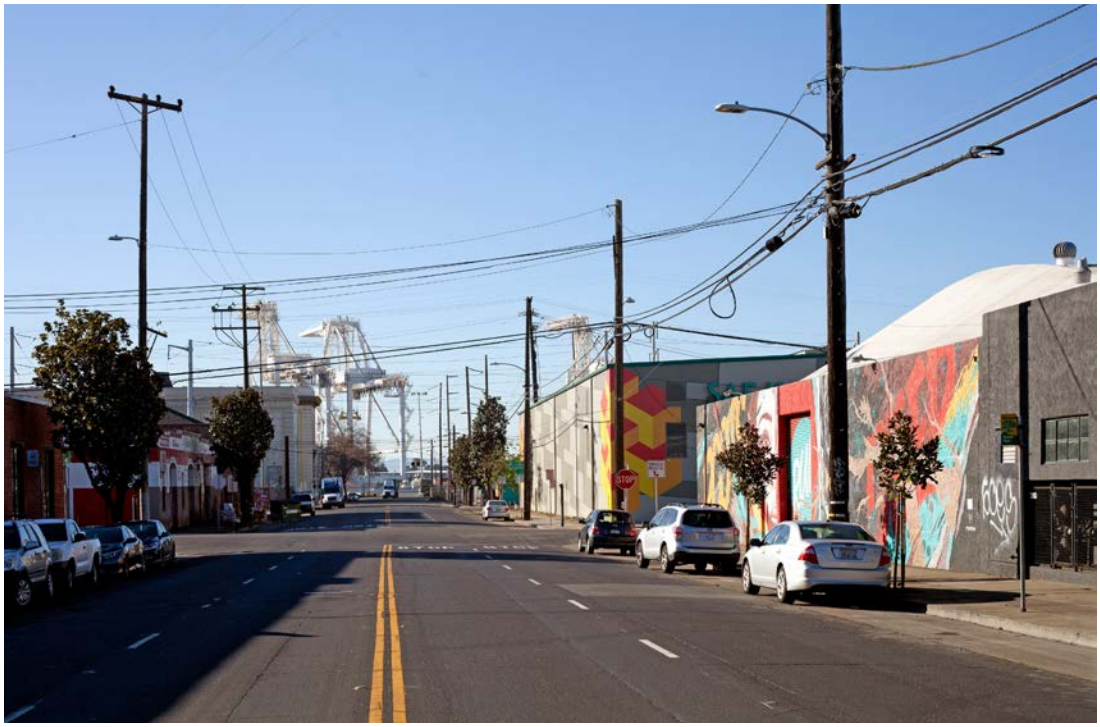
existing cranes are visible in the background on the left side of the view; however, under both Phase 1 and Buildout conditions, the existing cranes are conservatively assumed to be removed.[14] With implementation of Phase 1 of the proposed Project, this view would be in the direction of the principal "Athletics Way" entrance to the Project site, which is anticipated to be a heavily trafficked pedestrian corridor leading to a major public plaza at the Project site, particularly on game days. This view is considered a scenic vista for the purposes of this analysis because of the close, unobstructed view of the two historic vessels in the foreground. The view also demonstrates how the existing container cranes dominate the Project site, which has little else in the way of large-scale development and which is visible behind the historic vessels. From this viewpoint, the Project site generally affords views of an open skyline. With implementation of Phase 1 and after full buildout, views of these vessels would remain unobstructed from this vantage point, but the open skyline would be obstructed by the proposed Project. The ballpark and surrounding buildings would become a prominent feature in the background of this view, but the introduction of these features would not obstruct or obscure views of the historic vessels or the Estuary from this vantage point. Therefore, the proposed Project would not adversely affect views of these scenic resources from this location.

Key Viewpoint 2 (Figures 4.1-13 and 4.1-14)

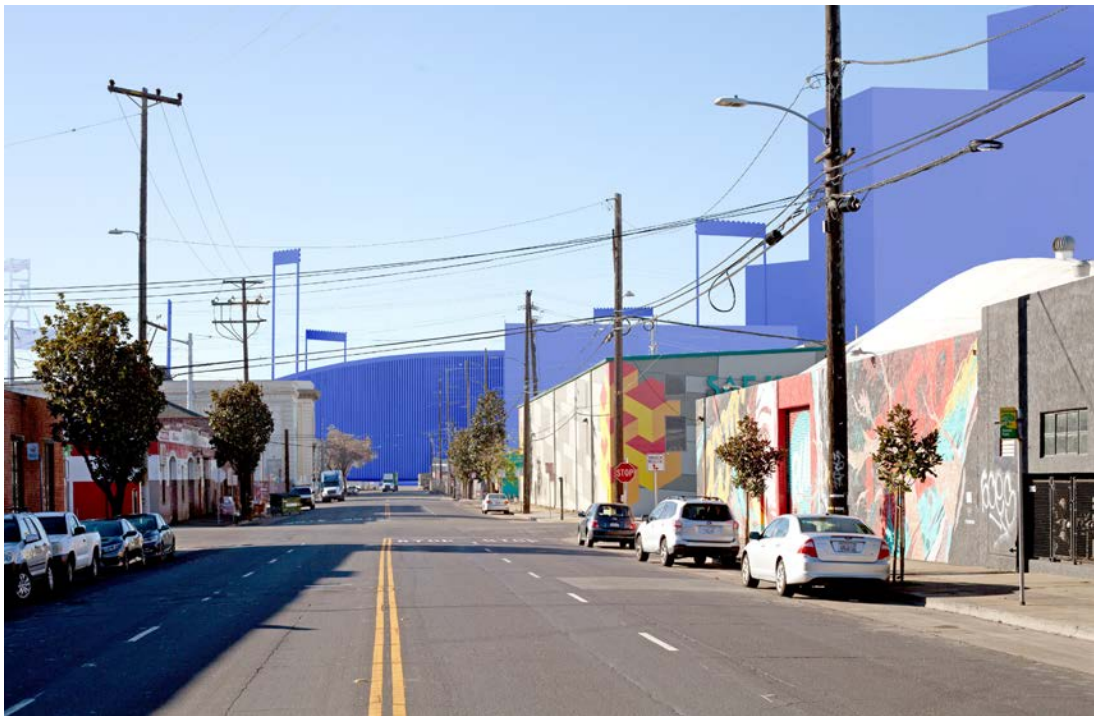
The view in **Figure 4.1-13** (existing conditions and Phase 1) and **Figure 4.1-14** (existing conditions and full buildout) are the same as that in Figure 4.1-8, looking toward the Project site from Martin Luther King Jr. Way. Close-range views include one- to two-story industrial/ commercial buildings with masonry and stucco facades on both sides of the street, and available in mid-range views are glimpses of three out of the four cranes on the Project site. Views of the three cranes are obscured by intersecting overhead power lines, utility poles, and street lights. This viewpoint is important because of the visibility of the cranes, which are available to southbound travelers on Martin Luther King Jr. Way for over a mile from the Project site, from approximately the Uptown neighborhood. As shown in Figure 4.1-14, the full buildout buildings would not be visible from behind Phase 1 buildings from this vantage point. From this vantage point, after implementation of Phase 1 and full buildout, the existing cranes would be replaced as a prominent feature comprising mid-range views with the ballpark and adjacent Phase 1 and full buildout buildings.[15] With implementation of Phase 1 and full buildout, a viewer, who may currently use this mid-range view of cranes at the Project site to orient themselves within Oakland, would now be able to orient themselves with the ballpark and adjacent proposed buildings.

[14] As explained in Chapter 3, *Project Description*, the Project sponsor intends to retain the existing container cranes on site, and therefore the Phase I and full Buildout simulations in Figures 4.1-11 and 4.1-12 depict two relocated existing cranes at the far left, behind the USS *Potomac*. However, as stated in the Project Description, retention of the cranes may not be feasible. Therefore, this analysis assumes that the cranes are removed. Therefore, assuming the cranes are not retained, the cranes visible in Figures 4.1-11 and 4.1-12 under with-Project conditions would be absent from this view, resulting in open sky behind the USS *Potomac*.

[15] Because the Project sponsor intends to retain the existing container cranes on site, the Phase 1 and full buildout simulations in Figures 4.1-13 and 4.1-14 depict one relocated existing crane at the far left of the images. However, as noted previously, this EIR conservatively assumes that the cranes would be removed.



EXISTING



PHASE 1

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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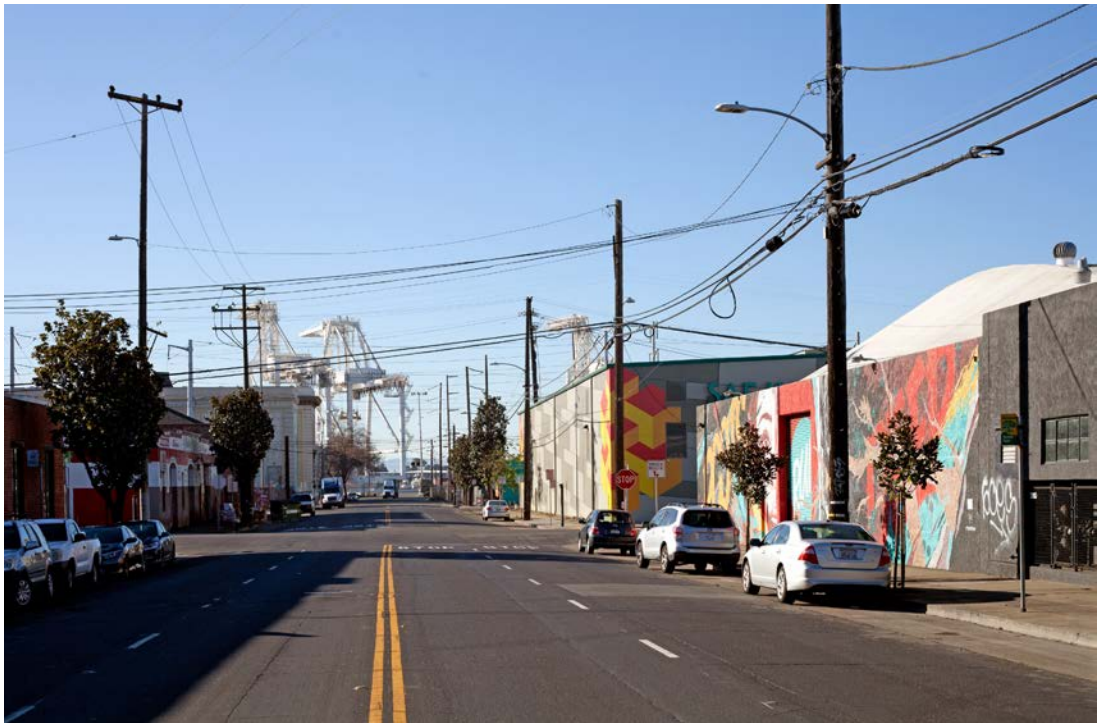
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-13
Visual Simulation for Key Viewpoint 2 (Existing and Phase 1)
Southwest View toward Project Site from Martin Luther King Jr. Way

ESA



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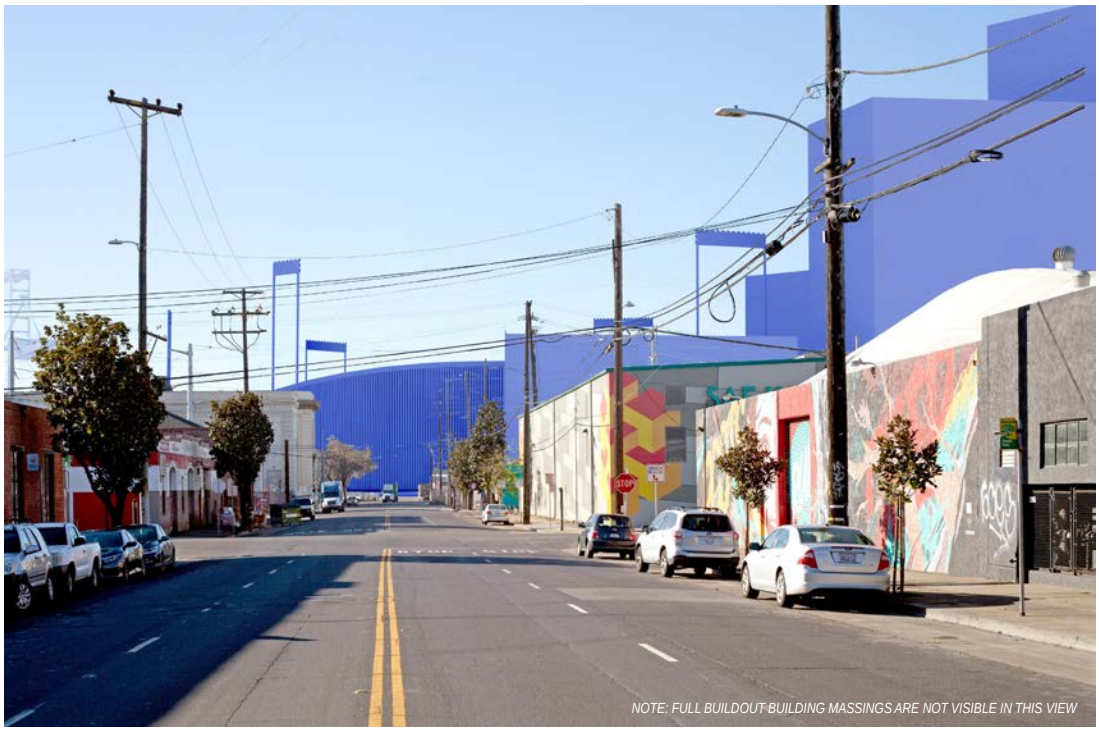

FULL BUILDOUT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-14
Visual Simulation for Key Viewpoint 2 (Existing and Full Buildout)
Southwest View toward Project Site from Martin Luther King Jr. Way

ESA

Key Viewpoint 3 (Figures 4.1-15 and 4.1-16)

Figure 4.1-15 (existing conditions and Phase 1) and **Figure 4.1-16** (existing conditions and full buildout) show the view from a pedestrian's perspective on the bike path at the San Francisco-Oakland Bay Bridge, and would be similar to a driver's view. This viewpoint is considered a scenic vista due to its relatively unobstructed views of the downtown Oakland skyline, San Francisco Bay, and the Oakland Hills. Implementation of the Phase 1 buildings and the remaining buildings through full buildout would introduce vertical elements (Project buildings up to 600 feet in height) to this viewpoint that would be clearly visible behind the Port of Oakland's shipping cranes outside of the Project site. The existing cranes on the Project site, which are visible under existing conditions from this vantage point, are conservatively assumed to be removed as part of the project. However, views of multiple other Port cranes, closer to the observer from this viewpoint and therefore considerably more visually prominent, would still be visible at full buildout. Accordingly, the loss of views of the cranes on the Project site would have little visual effect. Both Phase 1 and full buildout buildings would appear taller than buildings in downtown Oakland, but the Project's buildings would not obstruct scenic views of the downtown skyline or the San Francisco Bay. Only a relatively small portion of the Oakland Hills would be obstructed from this vantage point. Therefore, the proposed Project would not adversely affect scenic views or substantially interfere with views of scenic resources from this location.

Key Viewpoint 4 (Figures 4.1-17 and 4.1-18)

Figure 4.1-17 (existing conditions and Phase 1) and **Figure 4.1-18** (existing conditions and full buildout) show long-range views from the Mountain View Cemetery, which is a 226-acre publicly accessible cemetery located approximately 3.5 miles from the Project site. From this vantage point, scenic views of the downtown Oakland skyline, San Francisco skyline, and San Francisco Bay and the Peninsula beyond are available. The Phase 1 buildings, including the ballpark, would not be visible due to intervening buildings downtown. However, some buildings in the west portion of the Project site would be visible under buildout conditions to the west (right) of the downtown Oakland skyline. From this perspective, the tallest buildings under full buildout at 600 feet would appear somewhat taller than other buildings in downtown Oakland, and since the full buildout buildings would not obstruct views of the downtown Oakland skyline, the San Francisco skyline, or a substantial portion of San Francisco Bay or the Peninsula hills, the proposed Project would not have an adverse impact on this view.

Key Viewpoint 5 (Figures 4.1-19 and 4.1-20)

Figure 4.1-19 (existing conditions and Phase 1) and **Figure 4.1-20** (existing conditions and full buildout) show mid-range views toward the Project site from the San Francisco Bay Ferry traveling on the Estuary, near the city of Alameda. The proposed Project would be highly visible and would substantially alter the visual landscape due to the introduction of the ballpark and other buildings ranging from 50 to 600 feet tall. The Phase 1 buildings appear larger than more distant buildings downtown because of the lesser distance from the viewpoint. At full buildout, downtown Oakland buildings, most buildings at Jack London Square—with the exception of minor portions of two buildings— and most of the visible portion of the Oakland Hills, would not be visible. A small

EXISTING

PHASE 1

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-15
Visual Simulation for Key Viewpoint 3 (Existing and Phase 1)
Southeast View toward Project Site from the San Francisco-Oakland Bay Bridge

ESA

EXISTING

FULL BUILDOUT

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-16
Visual Simulation for Key Viewpoint 3 (Existing and Full Buildout)
Southeast View toward Project Site from the San Francisco-Oakland Bay Bridge

ESA

EXISTING

PHASE 1

LEGEND

- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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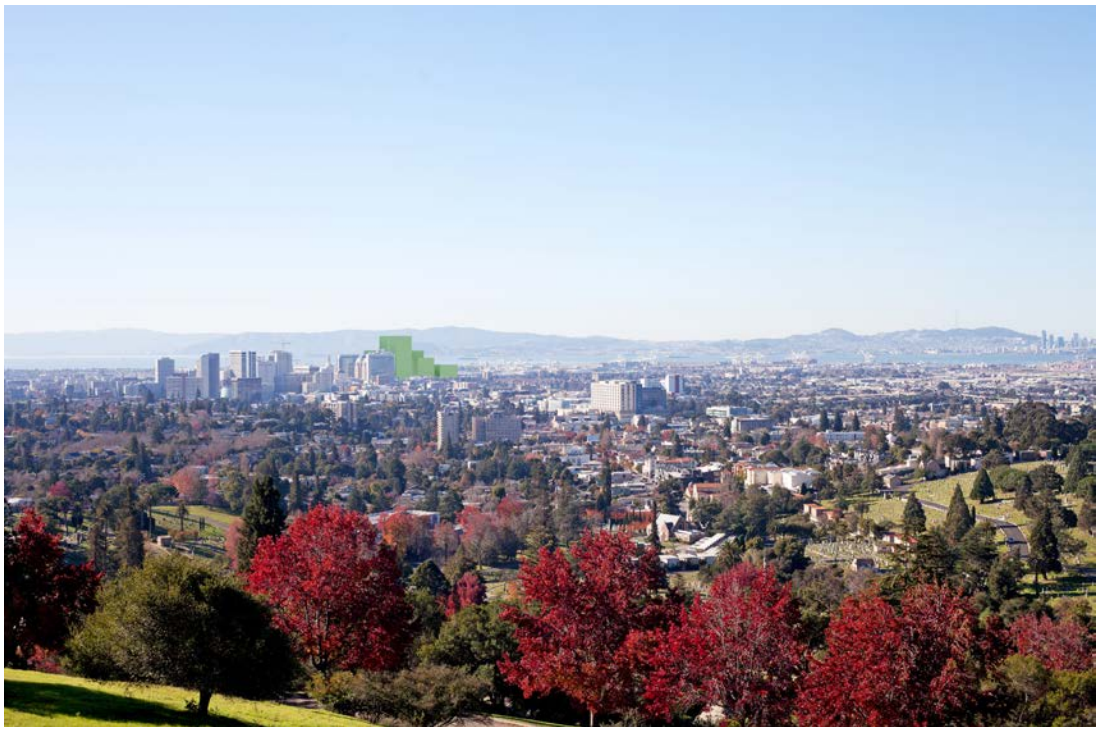
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-17
Visual Simulation for Key Viewpoint 4 (Existing and Phase 1)
Southwest View toward Project Site from Mountain View Cemetery

ESA

EXISTING



FULL BUILDOUT

LEGEND

- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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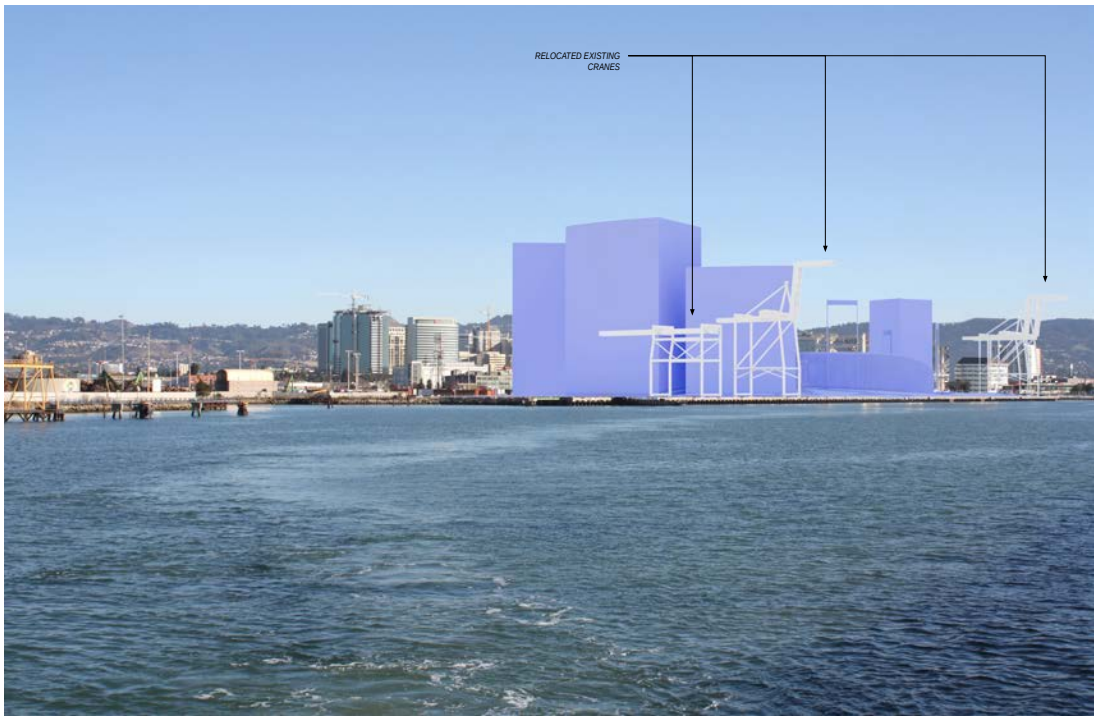
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-18
Visual Simulation for Key Viewpoint 4 (Existing and Full Buildout)
Southwest View toward Project Site from Mountain View Cemetery

ESA

EXISTING



PHASE 1

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

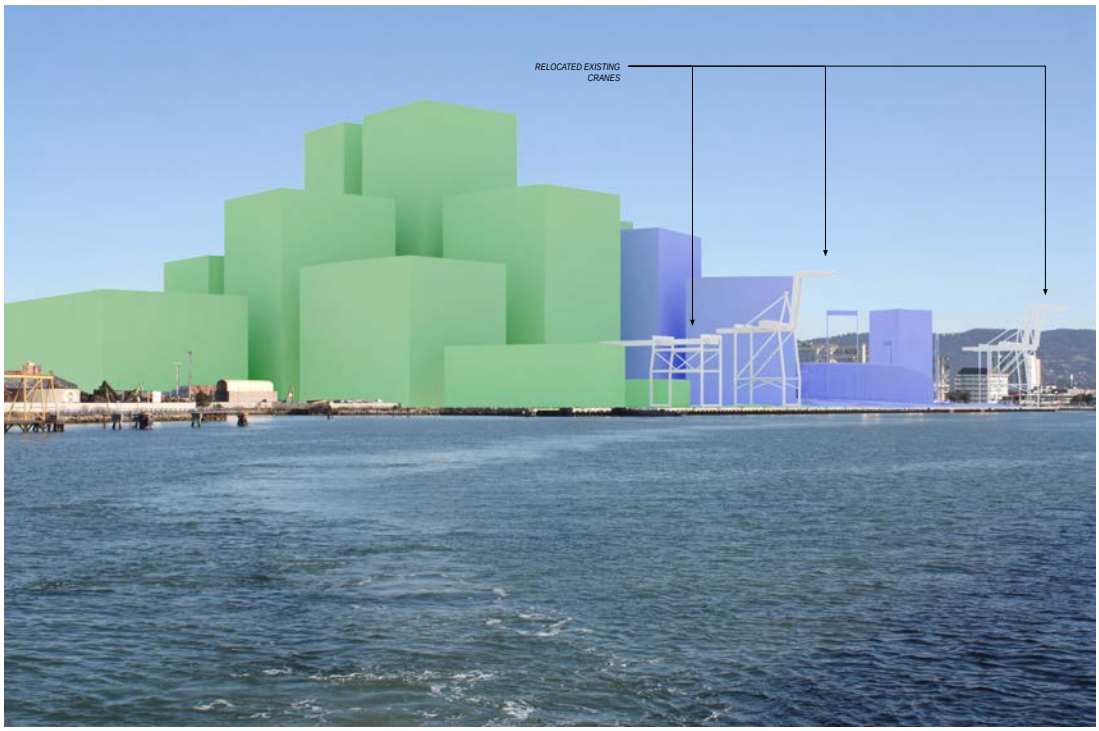
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-19
Visual Simulation for Key Viewpoint 5 (Existing and Phase 1)
Northeast View toward Project Site from the San Francisco Bay Ferry on the Oakland Estuary

ESA

EXISTING



FULL BUILDOUT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-20
Visual Simulation for Key Viewpoint 5 (Existing and Full Buildout)
Northeast View toward Project Site from the San Francisco Bay Ferry on the Oakland Estuary

ESA

remaining portion of the Oakland Hills would remain in sight.[16] Furthermore, long-range panoramic views of the Oakland Hills would still be available from this vantage point and elsewhere along the San Francisco Bay Ferry route. While the Oakland General Plan does include views of the downtown Oakland skyline as an important visual resource, the General Plan does not identify specific locations in which views of the downtown Oakland skyline should be protected.

A large portion of the Alameda shoreline opposite the proposed Project is not publicly accessible. For this reason, this view is primarily only available to the public while traveling on the San Francisco Bay Ferry or private watercraft in the Estuary, which, would continue to provide views of the downtown Oakland skyline from elsewhere along the ferry route or the Estuary, even with Project buildout. Overall, the Phase 1 and full buildout buildings would substantially change this view and would substantially obstruct views of visual resources such as the downtown Oakland skyline and the Oakland Hills from this viewpoint. However, these resources would continue to be visible from other nearby locations, including on the Estuary east and west of the Project site.

Overall Impact to Scenic Vistas and Resources

The Phase 1 and full buildout buildings would become a visually prominent feature of the visual landscape that would result in the loss of open skyline when viewing the Project site from nearby areas. It would also partially affect scenic vistas of San Francisco Bay, the downtown Oakland skyline, and the Oakland Hills. However, the proposed Project would generally be consistent with Oakland General Plan Policies OS-10.1 and OS-10.3, which strive to protect and enhance existing scenic views, because the proposed Project would enhance access to—and views of—the waterfront and historic resources in the Project vicinity. In addition, the proposed Project would provide new waterfront and elevated publicly accessible scenic viewpoints from which scenic resources and scenic vistas can be viewed. These benefits of the Project are further described in Chapter 3, *Project Description*, and under the heading, *Land Use Character*, below. Therefore, operation of the proposed Project would have a less-than-significant-impact on scenic resources and scenic vistas if the proposed Project was subject to a review of aesthetics under CEQA.

Mitigation: None required.

Visual Character and Quality

Impact AES-2: The Project would not substantially degrade the existing visual character or quality of the site and its surroundings. (Criterion 3) (*Less than Significant, but not a CEQA Consideration*)

Construction Impacts

Phase 1 and Buildout – Construction

The Project site visual character is primarily industrial, but the visual character of the surrounding area varies widely depending on the direction from the site and is not particularly cohesive. The

[16] Because the Project sponsor intends to retain the existing container cranes on site, the Phase 1 and full buildout simulations in Figures 4.1-19 and 4.1-20 depict relocated existing cranes along the Estuary. As noted previously, however, this EIR conservatively assumes that the cranes would be removed.

visual quality of the surrounding areas to the south and east is somewhat high, as described above, but the Project site and surrounding areas to the north and west have relatively low visual quality.

Phase 1 and buildout construction activities, which are described above under the heading, "Approach to Analysis," and under Impact AES-1, are a common and generally accepted feature of the urban environment. Construction activities would differ from the existing visual character of the Project site, which is characterized by vehicle and container storage and heavy industrial activities. The site, which is not currently publicly accessible, would continue to be closed to the public during construction of Phase 1. Between Phase 1 and buildout, portions of the site would be publicly accessible, but by the time Phase 1 is complete, portions of the Project site would have already been transitioned from a site characterized by industrial uses and container storage activities to a mixed-use urban environment. The proposed Project's construction impacts to visual character and quality would be temporary and would not substantially degrade the existing visual character of the site and its surroundings.

Operational Impacts

Phase 1 and Buildout Operations

Changes in the visual character or quality of a site are typically perceived subjectively and reactions vary by individual. The City's General Plan provides guidance that reflects the diverse nature of the built environment in Oakland and the complex nature of urban design in the community. Policies such as T6.2 and OS-9.3 reflects Oakland's desire to improve the visual quality of streetscapes and major entrances to City neighborhoods.

Land Use Character

Operation of Phase 1 of the proposed Project would include a 130-foot-tall ballpark, six buildings with maximum heights between 100 and 350 feet tall, and landscape improvements such as street trees, furniture, and public art. Operation at full buildout would include the aforementioned components in addition to buildings on up to 11 other development blocks at the Project site between 50 and 600 feet tall. The proposed Project would be designed to prioritize safety and comfort for pedestrians and bicyclists, which would serve to create a diverse, walkable neighborhood. Consistent with the mixed-use, flex designation in the specific plan, building footprints under the proposed Project would be medium to large and the urban form would be medium to high intensity.

As discussed above, the visual quality of the Project site and areas to the west and north is considered low due to the low degree of building and street grid continuity, and because of the high number of surface parking lots, outdoor container storage yards, and industrial equipment and activity. To the east and to the south, the visual quality is high, mainly because of its excellent views of—and proximity to—the Estuary and the two historic vessels immediately to the east of the Project site, and because of the Project site's connectivity to Jack London Square.

The proposed Project would include a Waterfront Park that would extend along the Estuary and provide wide view corridors to the Estuary and the Bay. The proposed Project would also include a series of varied open spaces intended to serve as an extension of the waterfront toward the site's interior, linking the new neighborhood to the waterfront. The "Athletics Way" pedestrian

promenade, pathway, and retail street would establish the identity and character of the public realm, and would be designed such that it would connect pedestrians to the pedestrian-oriented mixed-use district along Water Street toward Jack London Square.

The scale and intensity of development at the Project site would substantially alter the visual character of the area. Introducing buildings ranging from 50 and 600 feet tall would change the visual character from primarily industrial container storage to an intensely developed mixed-use civic and sports-related neighborhood. The ballpark would give the area an entertainment-oriented character and would serve to activate the neighborhood on game days. The rooftop park at the ballpark would provide views of downtown Oakland, Jack London Square, and the Estuary. The rooftop park would be publicly accessible on non-event days. On game days, the public would be required to have a game or event ticket to access the rooftop park.

Overall, the proposed Project would create mid- to high-rise buildings, which would serve to substantially intensify the urban form. However, because the existing visual setting is diverse and relatively non cohesive, the Project would not introduce a new visual element that is inconsistent with established cohesive visual patterns. In general, visual character and quality is subjective and the degree of change perceived by observers varies. For example, some observers could be more keenly aware of any increase in building height or overall density, and these observers could find these changes substantially disruptive. On the other hand, it is likely that some observers would not consider the changes to the visual setting to be substantial, while still others would see a benefit in certain alterations of the built environment (such as the streetscape improvements proposed as part of the proposed Project, for instance).

Despite the substantial change in visual character due to implementation of the proposed Project, the Project would be generally consistent with the City's policies regarding visual character and quality. The proposed Project would be consistent with Oakland General Plan policies OS-9.3, OS-11, OS-11.2, and T6.2, which reflect the City's desire to improve the visual quality of streetscapes, improve major entrances to City neighborhoods, and to create, maintain, and enhance civic open spaces. As previously discussed in the *Regulatory Setting*, the City and the Port are cooperating to establish a shared regulatory framework under which the City will, in consultation with the Port, apply all relevant provisions of the Oakland Planning Code, Title 17 of the Oakland Municipal Code, to the Project, which includes applicable design review criteria to which the Project will conform. For these reasons, the overall impact of proposed Project related to visual character would not be adverse, and this impact would be less than significant if the proposed Project was subject to a review of aesthetics under CEQA.

Mitigation: None required.

Light and Glare

Impact AES-3: The Project would create a new source of substantial light or glare which could substantially and adversely affect day or nighttime views in the area. (Criterion 4) (*Significant and Unavoidable, but not a CEQA Consideration*)

Due to the sensitivity of surrounding uses, including use of the nearby turning basin by vessels (considered in Section 4.10, *Land Use, Plans, and Policies*), a quantitative analysis was prepared by HLB Lighting Design (2020) (Appendix AES). Lighting Design Alliance, subconsultant to ESA, conducted a technical peer review to support ESA's assessment of whether the proposed Project's light trespass (spill light), glare, and contribution to light pollution would significantly affect day or nighttime views in the area. The analysis below is based on the Lighting Masterplan information contained in Sections 3.7 and 3.8 of the HLB Report, and considers whether the proposed Project would have adverse light trespass (spill light), glare, and contribution to light pollution when compared to industry standards. The analysis also takes into consideration the sensitivity of the receptor locations when considering whether effects to receptors would be substantial. Refer to Section 4.10, *Land Use, Plans, and Policies*, for an analysis of light and glare as it pertains to potential conflicts with safe navigation of vessels in the Estuary. Refer to Section 4.3, *Biological Resources*, for impacts and mitigation measures related to light and glare impacts on birds.

Construction Impacts

Phase 1 and Buildout – Construction

Existing light sources at the Project site are primarily high-mast poles within the Project site, and shorter pole-mounted flood lights at some locations around the perimeter of the Project site directed inward. The Project sponsor proposes to conduct the great majority of its Phase 1 and buildout construction activities during daytime hours from 7:00 a.m. to 7:00 p.m. However, some activities would require nighttime construction work. Specifically, the Project sponsor proposes to use cranes to install the precast concrete elements of the ballpark between 6:00 p.m. and 2:00 a.m. or later; and also proposes large-scale concrete pours—which typically must occur over multiple hours of unbroken activity for concrete to cure properly—at least in part during nighttime hours. Construction lighting for these activities may add to the existing ambient light levels that are currently characteristic of the Project site and immediate Project vicinity. Nighttime lighting sources during construction would consist of floodlights that would be focused on the work area to minimize light trespass. Most construction floodlights would likely be mounted at or below the height of existing pole-mounted lights at Howard Terminal and would be aimed down toward ground level at work being undertaken on the Project site. However, it is possible that some light from construction floodlights could be spill off the site, which could cause annoyance to light-sensitive uses off-site. While the proposed Project's lighting effects are not environmental impacts pursuant to CEQA Section 21099(d) (see explanation on p. 4.1-1), the Project sponsor could choose to implement Improvement Measure AES-1, or the City could impose this requirement as a condition of approval, to reduce the potential for construction light to be directed off-site.

Improvement Measure AES-1: Construction Lighting Design Features.

During construction, light sources associated with proposed Project construction shall be shielded and/or aimed so that no direct beam illumination is directed/aimed outside of the Project Site boundary to the extent feasible. However, construction lighting shall not be so limited as to compromise the safety of construction workers.

Operational Impacts

Phase 1 and Buildout Operations

Operation of Phase 1 and buildout of the proposed Project would utilize LED technology and would be optimized based on the following conditions: useful life, cost, energy efficiency, and to minimize opportunities for vandalism. The proposed Project would include a variety of lighting techniques and illuminated signage that would create a high degree of visibility during and between events.

Ballpark Lighting

Illumination design for the inside of the ballpark would be based on requirements for spectators, game play, Major League Baseball standards, and television broadcast requirements.

Based on Major League Baseball design standards, targeted field light levels are as follows:

- Infield: 250 fc (approximately 2,690 lux);
- Midfield: 225 fc (approximately 2,421 lux); and
- Outfield: 200 fc (approximately 2,153 lux).

Field lighting for the ballpark would consist of four pole-mounted lighting clusters located outside of the ballpark behind the first and third base lines, along with two additional outfield pole-mounted light stands.

Digital Signage

The proposed Project ballpark would have a double-sided, fully digital video scoreboard that would be pole-mounted behind the center field fence. Because the scoreboard would be in direct view from some highway driving positions, it would be required to comply with the California Vehicle Code. Additionally, two LED digital ribbon boards displaying text and graphics would be located between seating levels and would wrap around the inside of the ballpark.

Exterior Lighting

Exterior lighting would be provided to illuminate different areas of the Project site and surrounding plazas, and would include street lighting, sidewalk lighting, building perimeter lighting, emergency lighting, and outdoor security lighting along walkways, driveways, and plaza areas. Vertical walls of the ballpark would be visibly lit in most directions, both from the outside as well as from the inside where transparent surfaces would permit light from inside to be visible to outside observers. All exterior lighting is expected to use LED sources and would be designed to meet the standards set forth by California, Oakland, including, Title 24 Parts 6, 11 and Article 1, the California Building Code, the California Vehicle Code, the City of Oakland Outdoor Lighting Standards, the City of Oakland bird safety measures, and Illuminating

Engineering Society (IES) Standards for light trespass in Lighting Zone 3 and the CIE Guide on Limitation of the Effects of Obtrusive Light.

Streetscape Lighting

Exterior lighting design for the streetscapes throughout the Project site would take into account vehicular and pedestrian safety and would be designed to meet California, City of Oakland, Port of Oakland, and IES recommended standards. Lighting at sidewalks would be at a pedestrian scale to encourage and facilitate nighttime use of public areas. Project lighting would be designed to be consistent with Title 24 (Outdoor Lighting Zones), Oakland General Plan Policy T6.2 (Improving Streetscapes), which includes lighting as a means to improve the visual quality of streetscapes, and the City of Oakland's Outdoor Lighting Standards enforced by the Oakland Public Works Agency.

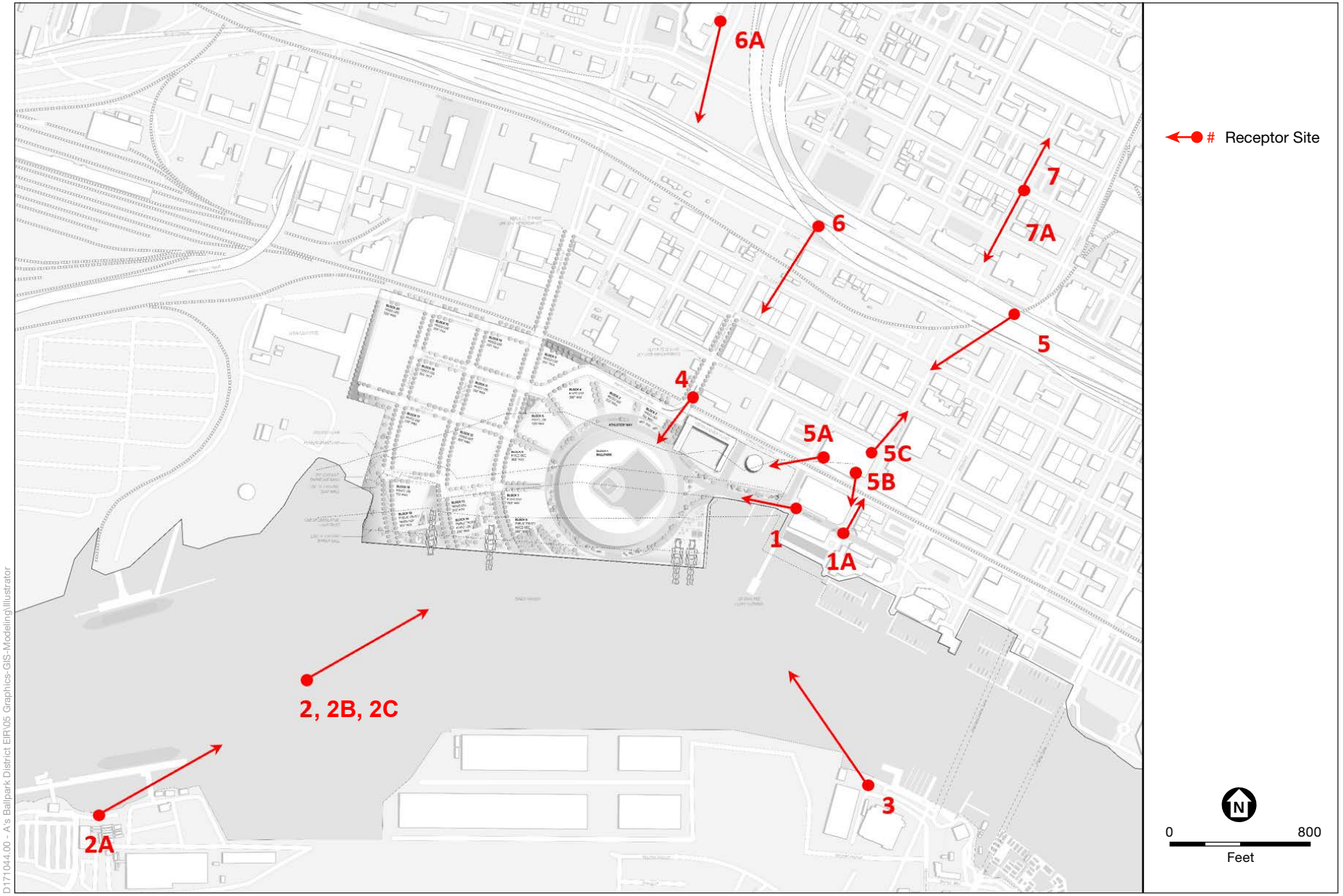
Spill Light (Light Trespass)

Spill light, also referred to as light trespass, refers to the amount of light measured from adjacent or distant locations, and is typically either annoying or unwanted. Spill light was measured at 16 representative locations in order to quantify the difference in illuminance, or spill light at a receiving location, between existing conditions, Phase 1, and at full buildout of the proposed Project. The 16 light receptor locations are shown in **Figure 4.1-21**.

As shown in **Table 4.1-3** below, five of the receptor locations would experience less additional nighttime spill light from the directional ballpark lighting that would be focused on the field than they do from existing nighttime lighting at Howard Terminal, which consists of flood lighting that currently casts substantial nighttime light off the site. The other nine receptor locations currently experience spill light from other sources that would remain in addition to spill light from the Project. Consistent with City of Oakland and Port requirements, Phase 1 and buildout operations would include light shielding features designed to minimize light trespass and light pollution, including architecturally integrated lighting elements intended to focus light downward. Other measures to minimize light trespass would include low-mounted lighting sources, full cut-off for surface parking lighting, and potentially spreading sports lighting along the interior edge of the ballpark roof to reduce the visibility of the lighting source from a distance.[17]

Despite the minimal increase in spill light across many receptor locations, there are individual receptors that would experience spill light that would exceed CIE standards. In particular, receptor locations 1 and 7A would exceed the pre-curfew standard of 25 lux during night games or on non-game nights. Typically, the overlap of pre-curfew hours and night games (for most office and retail uses, etc.) would be approximately one to two hours in duration. During post-curfew hours, receptor locations 1, 1A, 2A, 4, 5A, 6A, 7, and 7A would exceed the standard of 5 lux on game or non-game nights. Each of these receptor locations except 5A also exceed the CIE threshold for post-curfew hours under existing conditions.

[17] Full cut-off luminaires are light sources that have no direct uplight (no light emitted above horizontal).



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SOURCE: HLB Lighting Design

Oakland Waterfront Ballpark District Project

Figure 4.1-21
Light and Glare Receptor Locations

ESA

TABLE 4.1-3
SPILL LIGHT AT ADJACENT AND NEARBY RECEPTOR LOCATIONS (lux)

Receptor Location	Existing	Night Game (Pre-Curfew)				Non-Game Night (Pre-Curfew[a])				Non-Game or Game Night (Post-Curfew)[b]			
		Phase 1	Total	Buildout	Total	Phase 1	Total	Buildout	Total	Phase 1	Total	Buildout	Total
1 – Water St. at Clay St. (facing site)	6.0	**42.0**	**<48**	**42.6**	**<48.6**	9.3	<16.3	9.4	<16.4	3.6	**<9.6**	3.7	**<9.7**
1A – Water St. at Washington St. (facing north)	7.3	6.2	<13.5	6.2	<13.5	6.3	<13.6	6.2	<13.5	**6.2**	**<13.5**	**6.2**	**<13.5**
2 – Inner Harbor Turning Basin (facing site, Height of 190')	1.2	0.8	<2.0	1.8	<3.0	0.7	<1.9	1.7	<2.9	0.3	<1.5	1.1	<2.3
2A – Turning Basin Line-of-Sight (facing site)	5.7	0.2	<5.9	0.5	<6.2	0.2	<5.9	0.5	<6.2	0.1	**<5.8**	0.4	**<6.1**
2B – Inner Harbor Turning Basin (facing site, Height of 64')	n/a[d]	0.8	0.8	1.7	1.7	0.7	0.7	1.5	1.5	0.3	0.3	1.0	1.0
2C – Inner Harbor Turning Basin (facing site, Height of 25')	n/a[d]	0.7	0.7	1.5	1.5	0.6	0.6	1.5	1.5	0.3	0.3	1.0	1.0
3 – Alameda Dock (facing site)	1.1	3.1	<4.2	3.4	<4.5	0.5	<1.6	0.7	<1.8	0.3	<1.4	0.4	<1.5
4 – MLK Blvd at Embarcadero Way (facing site)	7.2	8.2	<15.4	8.6	<15.9	6.8	<14.0	7.2	<14.4	3.2	**<10.4**	3.5	**<10.7**
5 – I-880 Westbound (facing site)	1.6	0.2	<1.8	0.5	<2.1	0.1	<1.7	0.3	<1.9	0.1	<1.7	0.3	<1.9
5A – 2nd St. at Washington St. (facing site)	2.1	7.2	<9.3	7.6	<9.7	7.0	<9.1	7.2	<9.3	**5.6**	**<7.7**	**5.8**	**<7.9**
5B – 2nd St. at Washington St. (facing south)	3.7	0.7	<4.4	0.7	<4.4	0.7	<4.4	0.7	<4.4	0.7	<4.4	0.7	<4.4
5C – 2nd St. at Washington St. (facing north)	3.2	0.1	<3.3	0.1	<3.3	0.0	<3.2	0.1	<3.3	0.0	<3.2	0.1	<3.3
6 – I-980 Ramp to Eastbound I-880 (facing site)	1.2	1.1	<3.2	1.6	<3.4	0.6	<1.8	1.0	<2.2	0.4	<1.6	0.9	<2.1
6A – 7th St. at Brush St. (facing site)	5.1	0.3	<5.4	0.5	<5.6	0.2	<5.3	0.3	<5.4	0.2	**<5.3**	0.3	**<5.4**
7 – 8th St. at Washington St. (facing north)	15.4	0.1	<15.5	0.1	<15.5	0.1	<15.5	0.1	<15.5	0.1	**<15.5**	0.1	**<15.5**
7A – 8th St. at Washington St. (facing south)	**28**	0.0	**<28.0**	0.0	**<28.0**	0.0	**<28.0**	0.0	**<28.0**	0.0	**<28.0**	0.0	**<28.0**

NOTES:

Values highlighted in **bold-face** exceed CIE standards of 25 lumens per square foot (lux) pre-curfew, or 5 lux post-curfew, for Environmental Zone E4.

a Pre-curfew is the time of the day when businesses are expected to be open.
b Post-curfew is the time of day after businesses are closed and before sunrise.
c Spill light values are additive to existing light levels. However, at some locations near the Project site, there would be a reduction in existing spill light levels with elimination of existing on-site light sources. Existing light levels include all existing sources, including on-site and off-site sources, and the total light levels cannot be adjusted for the removed increment of on-site light sources., Also, the Project could block some existing off-site light sources from reaching certain receptors. Therefore, the total light level is conservatively assumed to be less than ("<") the sum of existing and proposed light sources at all receptors.
d Receptor locations 2B and 2C (64 feet and 25 feet above the surface of the Estuary and centered in the Inner Harbor turning basin) could not be accessed at the time of preparation of the lighting technical report. Measurements approximating the eye height above a ship were taken at 159 feet above the water line. However, the proposed Project's impacts on spill light at receptor locations 2, 2B, and 2C could still be determined based on the geometric relationship of the receptor location to light sources.

SOURCE: HLB, 2020

For informational, non-CEQA purposes, to evaluate the increase in spill light at these receptor locations that exceeds CIE standards, this assessment considers typical uses at these receptor locations and their relative sensitivity to light. Light-sensitive uses are those where light could potentially interfere with certain functions, including vision, sleep, privacy, and general enjoyment of the natural nighttime vicinity. Residential uses are considered light-sensitive because they are typically occupied during the overnight hours, and are occupied by persons who have expectations of privacy and the ability to generally sleep undisturbed by obtrusive lighting. Land uses in the vicinity of receptor locations 1, 1A, 4, 5A, and 6A are a mix of single- and multi-story mixed-use office/retail buildings, a multi-story parking garage, single-story commercial buildings, and industrial uses. No residential uses are proximate to these receptors, and thus these locations are not considered sensitive to light. Receptor locations 7 and 7A are adjacent to mixed-use residential buildings; however, these receptor locations substantially exceed the CIE thresholds for post-curfew hours under existing conditions, and additional light as a result of the Project would not be substantial. Therefore, the increase in spill light at these locations would not adversely affect nighttime views in the area.

Glare

Glare is caused by direct light from sources, and light reflections from pavement, vehicles, and building materials, such as reflective glass and polished surfaces. Glare can be caused by reflections during either daytime or nighttime hours, and the amount of glare depends on the intensity and direction of sunlight or sources of artificial light at night. Glare can potentially create hazards or nuisances to motorists, pedestrians, and other viewers. The ballpark alone would not create substantial source of daytime glare because the façade has been designed without reflective materials and field lighting would not be employed during daytime hours. However, adjacent buildings under Phase 1 and buildout could create substantial new sources of daytime glare.

The potential for substantial new daytime glare from the Phase 1 and buildout building facades would be minimized through implementation of Mitigation Measure BIO-1b, Bird Collision Reduction Measures, as described in Section 4.3, *Biological Resources*, which would reduce the amount of reflective glass and polished surfaces on proposed buildings.

At night, the potential exists for nighttime glare from artificial sources of light, including the Phase 1 development and ballpark, as well as buildout development, to affect nearby light sensitive uses. Glare emanating from the Project was modeled for each of the receptor locations. The CIE standard for glare, also referred to as luminance, from building facades and signage is 25 and 1,000 candela per square meter (cd/m^2) in Environmental Zone E4, respectively. As shown in **Tables 4.1-4 and 4.1-5** below, Phase 1 and buildout under the proposed Project receptor locations 1 (Water Street at Clay Street), 3 (Alameda Dock), 5 (I-880 Westbound), and 5A (2nd Street at Washington Street), would experience views of façade lighting exceeding the CIE standard for glare. The glare effects would result from pole lighting around the ballpark.

TABLE 4.1-4
NIGHTTIME GLARE FROM FAÇADE LIGHTING AT ADJACENT AND NEARBY RECEPTOR LOCATIONS

Receptor Location	Measured Existing Maximum Glare (cd/m^2)	Proposed Project					
		During Night Game (Pre-Curfew[a])		Non-Night Game (Pre-Curfew[a])		Post-Curfew[b]	
		Phase 1	Buildout	Phase 1	Buildout	Phase 1	Buildout
		Values based on Facade Lighting (cd/m^2)					
1 – Water Street at Clay Street (Facing Ballpark)	220	**32.3**	**35.8**	15.9	15.9	5.6	5.6
1A – Water Street at Washington Street	1,300	6.4	6.4	6.4	6.4	6.4	6.4
2 – Inner Harbor Turning Basin (elevation 190 feet above water)[c]	56	15.9	15.9	15.9	15.9	5.6	5.6
2A – Turning Basin Line-of-Sight	100	15.9	15.9	15.9	15.9	5.6	5.6
2B– Inner Harbor Turning Basin (elevation 64 feet above water)[c]	n/a	15.9	15.9	15.9	15.9	5.6	5.6
2C – Inner Harbor Turning Basin (elevation 25 feet above water)[c]	n/a	15.9	15.9	15.9	15.9	5.6	5.6
3 – Alameda Dock	40	**32.3**	**35.8**	15.9	15.9	5.6	5.6
4 – Martin Luther King Way (MLK) at Embarcadero Way	1,100	15.9	15.9	15.9	15.9	5.6	5.6
5 – I-880 Westbound	n/a	**32.3**	**35.8**	15.9	15.9	5.6	5.6
5A – 2nd Street at Washington Street (Facing Ballpark)	56	**32.3**	**35.8**	15.9	15.9	5.6	5.6
5B – 2nd Street at Washington Street (Facing Jack London Ferry Terminal)	160	6.4	6.4	6.4	6.4	6.4	6.4
5C – 2nd Street at Washington Street (Facing Convention Center Station)	10	1.6	1.6	0	0	0	0
6 – I-980 Ramp to Eastbound I-880	n/a	15.9	15.9	15.9	15.9	5.6	5.6
6A – 7th Street at Brush Street	74	15.9	15.9	15.9	15.9	5.6	5.6
7 – 8th Street at Washington Street (Facing Convention Center Station)	5,000	6.4	6.4	6.4	6.4	6.4	6.4
7A – 8th Street at Washington Street (Facing Tower)	2,700	0.0	0.0	0.0	0.0	0.0	0.0

NOTES:

The CIE standard for glare, also referred to as luminance, from building facades exceeds is 25 candela per square meter (cd/m^2)) for Environmental Zone E4. Values expressed in this table are additive to existing glare conditions. Values highlighted in **bold-face** exceed CIE standards.

a Pre-curfew is the time of the day when businesses are expected to be open.
b Post-curfew is the time of day after businesses are closed and before sunrise.
c No existing measurements were taken at Receptor 2B and 2C due to lack of access within the Estuary water.

n/a – indicates receptor sites do not have a direct view of the project façade.

SOURCE: HLB, 2020

TABLE 4.1-5
GLARE FROM BALLPARK SIGNAGE AT ADJACENT AND NEARBY RECEPTOR LOCATIONS (cd/m^2)

Receptor Location	Measured Existing Maximum Glare	During Night Game	
		Phase 1	Buildout
1 – Water Street at Clay Street (Facing Ballpark)	220	**3,500**	**3,500**
1A – Water Street at Washington Street	1,300	n/a	n/a
2 – Inner Harbor Turning Basin (elevation 190 feet above water)	56	n/a	n/a
2A – Turning Basin Line-of-Sight	100	n/a	n/a
2B – Inner Harbor Turning Basin (elevation 64 feet above water)	n/a	n/a	n/a
2C – Inner Harbor Turning Basin (elevation 25 feet above water)	n/a	n/a	n/a
3 – Alameda Dock	40	**3,500**	**3,500**
4 – Martin Luther King Way (MLK) at Embarcadero Way	1,100	n/a	n/a
5 – I-880 Westbound	n/a	n/a	n/a
5A – 2nd Street at Washington Street (Facing Ballpark)	56	n/a	n/a
5B – 2nd Street at Washington Street (Facing Jack London Ferry Terminal)	160	n/a	n/a
5C – 2nd Street at Washington Street (Facing Convention Center Station)	10	n/a	n/a
6 – I-980 Ramp to Eastbound I-880	n/a	n/a	n/a
6A – 7th Street at Brush Street	74	n/a	n/a
7 – 8th Street at Washington Street (Facing Convention Center Station)	5,000	n/a	n/a
7A – 8th Street at Washington Street (Facing Tower)	2,700	n/a	n/a

NOTES:

The CIE standard for glare from signage, also referred to as luminance, is 1,000 candela per square meter (cd/m^2). Values expressed in this table are additive to existing glare conditions. Ballpark signage would be operated only during games and therefore this analysis is only for pre-curfew night game conditions. Values in **bold-face** represent an exceedance of the applicable standard.

n/a – No substantial glare from ballpark signage would be generated at receptor under Project conditions due to lack of line of sight between signage and receptor. Also, no existing measurements were taken at Receptor 2 due to lack of access.

SOURCE: HLB, 2020

The proposed Project would include illuminated signage. Nighttime glare under the proposed project at the following receptor locations would be above CIE standards for signage after Phase 1 and at full buildout when looking toward the ballpark: 1 (Water Street at Clay Street) and 3 (Alameda Dock). In particular, receptor location 3 (Alameda Dock) is in the vicinity of a senior housing development.

Non-game and post-curfew hours would not result in any exceedances of the CIE standard at receptor locations under the proposed Project. However, nighttime glare during games would result in exceedances at the locations listed above primarily because of direct views of the proposed scoreboard, ribbon boards, light stands, and ballpark interior lighting, or from reflections on adjacent Phase 1 buildings. This would be a potentially significant impact due to the several residences in the vicinity of receptor location 3 that would experience nighttime glare above the CIE standard mainly due to views of ballpark signage and lighting.

Light and Glare Effects on Maritime Pilots

Light and glare effects on maritime activity are discussed in Section 4.10, *Land Use, Plans, and Policies*.

Pyrotechnic Events

The proposed Project would include pyrotechnic events (fireworks). There would be approximately seven fireworks shows a year, each lasting approximately 15 minutes in duration. The fireworks would likely be set off from a barge located in the Estuary outside of the Inner Harbor Turning Basin, and would be subject to permitting requirements. Typical fireworks rise to a height of 300-600 feet before exploding, though smaller shells may explode at lower elevations. Additionally, some smaller scale fireworks would be launched from the ballpark itself, reaching an approximately height of 0–300 feet.

These events would have the potential to increase ambient nighttime lighting levels at the Project site and in the vicinity. Lighting from these events would result in potentially significant lighting and glare impacts to nearby receptors with a line of sight to the lighting sources, albeit on a temporary and short-term basis. These events would be noticeable from long distance due to the anticipated height above roofline. While some observers would no doubt be disturbed by occasional pyrotechnic displays, these events would be temporary and intermittent in nature, and thus would have no substantial impact.

Summary of Overall Light and Glare Impacts

For the reasons discussed above, lighting and glare associated with the proposed Project could substantially increase nighttime light and glare in the Project area. However, the proposed Project would comply with applicable Title 24 lighting power allowances; it would be consistent with Oakland General Plan Policy T6.2 (Improving Streetscapes) and the City of Oakland's Outdoor Lighting Standards, which would require exterior lighting fixtures to be adequately shielded to prevent unnecessary glare onto adjacent properties.

Nighttime glare measured at four receptor locations shown in Table 4.1-5, including receptor locations 1, 3, 5, and 5A, would be above CIE standards for sign lighting brightness for Phase 1 and buildout during night games. Additionally, nighttime glare measured at two receptor sites, receptor locations 1 and 3 would be above CIE standards for façade lighting for Phase 1 and buildout during night games for the proposed Project due light reflected from the infield sport lighting off the roof of the ballpark and onto the adjacent facades.

These potentially significant impacts would be reduced through consistency with Oakland General Plan Policy T6.2 (Improving Streetscapes) and the City of Oakland's Outdoor Lighting Standards; however, it cannot be determined with certainty that nighttime glare would be below CIE standards at the locations of nearby sensitive receptors. Implementation of **Improvement Measure AES-2** would further reduce general nighttime light and glare, as described below.

Improvement Measure AES-2: Design Lighting Features to Minimize Light Pollution.

Prior to obtaining the final building permit for the ballpark, to minimize the effects of light pollution on nighttime views, and to prevent unnecessary glare onto adjacent areas, the following measures would be implemented:

- **Field Lighting:** To the extent permitted by and compatible with MLB requirements, standards or professional baseball standards, all field lighting shall be a correlated color temperature of 5700K, a minimum color rendering index of 80, and field lighting may include accessories such as visors or shields to minimize spill light;
- **Architectural Lighting:** minimize areas of non-signage architectural façade lighting (not signage) on buildings above 50 feet; use warm color temperature LED sources to minimize blue light emissions; integrate lighting elements into architecture wherever possible to minimize direct view of light sources; and rely to the extent possible on low mounting-height luminaires to reduce the visibility of the luminaire from a distance;
- **House Lighting:** lighting of the stands, or "house" lighting, shall be fully shielded so that house lighting limits or avoids uplighting and should be CIE-correlated color temperature of 5700K;
- **Digital Signage:** two key digital signage locations are the double-sided digital scoreboard in centerfield and the digital ribbon boards within the ballpark. While all signage will comply with the California Vehicle Code requirements for brightness where they are within the field of view for freeway drivers, digital signage applications such as wayfinding or advertising that are not within the ballpark itself and associated with the function of the ballpark shall include the following measures:
    - all digital signage, including static and dynamic signage, should be provided with dimming capabilities and the associated control infrastructure to dim the sign brightness at night;
    - all digital signage should include glare control measures to minimize off-axis brightness and upward directed and wasted light;
    - the brightness of all digital signage should be verified after installation through photometric measurements to comply with the following limitations: the greater of the amount required by MLB standards or no greater than 1,000 cd/m2 when set to all pixels at bright white, and no greater than 8.0 lux vertical at the property line created by any single digital sign.

The Project sponsor shall demonstrate to the satisfaction of the City and the Port that its lighting design achieves the desired lighting results, or is necessary to meet market demand and expectations of an MLB ballpark with respect to field lighting, architectural lighting, house lighting, and digital signage as described in the Lighting Technical Report (HLB Lighting Design, 2020). In addition, if the ballpark orientation or design of light stands changes such that light and glare levels in the shipping channel or Inner Harbor Turning Basin would be substantially different than analyzed in the Lighting Technical Report, the Project sponsor shall be required to assess the changes in a supplemental Lighting Technical Report subject to review and approval by the City and the Port.

The construction and operation improvement measures could reduce this impact, but it cannot be stated with certainty that it could be reduced to a less-than-significant level. Therefore, this impact would be conservatively determined to be significant and unavoidable if the proposed Project's aesthetics impacts were subject to CEQA.

While no mitigation is required for light and glare impacts because the proposed Project's aesthetics impacts are not considered environmental impacts for the purposes of CEQA, the Project sponsor may agree to implement Improvement Measures AES-1 and AES-2 as part of the Project, or City decision makers may impose Improvement Measures AES-1 and AES-2 as a condition of Project approval.

> **Significance after Mitigation:** Significant and Unavoidable, but not a CEQA consideration.

Shadow

Impact AES-4: The Project would not cast shadow that substantially impairs a nearby use reliant on sunlight, including the following functions: a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors; the beneficial use of any public or quasi-public open space; a historic resource; or result in an exception to the policies in the General Plan, Planning Code, or Uniform Building Code, and the exception causes there to be inadequate light related to appropriate uses. (Criteria 6, 7, 8, and 9) (*Less than Significant*)

Construction Impacts

Phase 1 and Buildout – Construction

During construction, temporary structures such as cranes would be tall enough to cast shadow on nearby solar panels, open spaces, and historic resources; however, this shadow would be temporary and not substantial due to the slender and lattice-like frame of cranes. In addition, shadows from cranes are a common feature of the Seaport, including the Project site. Because interim construction impacts would be temporary and less noticeable than shadow impacts from operation of the proposed Project, the operational analysis below represents the most conservative analysis of shadow impacts.

Operational Impacts

Phase 1 and Buildout Operations

There are no buildings using passive solar heat collection or solar collectors for hot water heating in the vicinity of the Project site, therefore, these topics are not discussed further. The analysis below discusses whether shadow from operation of the proposed Project would substantially impair the function of photovoltaic solar collectors, hereafter referred to as solar panels, the function of open spaces, the significance of historical resources, or result in an exception to the policies in the General Plan, Planning Code, or Uniform Building Code, and the exception causes there to be inadequate light related to appropriate uses.

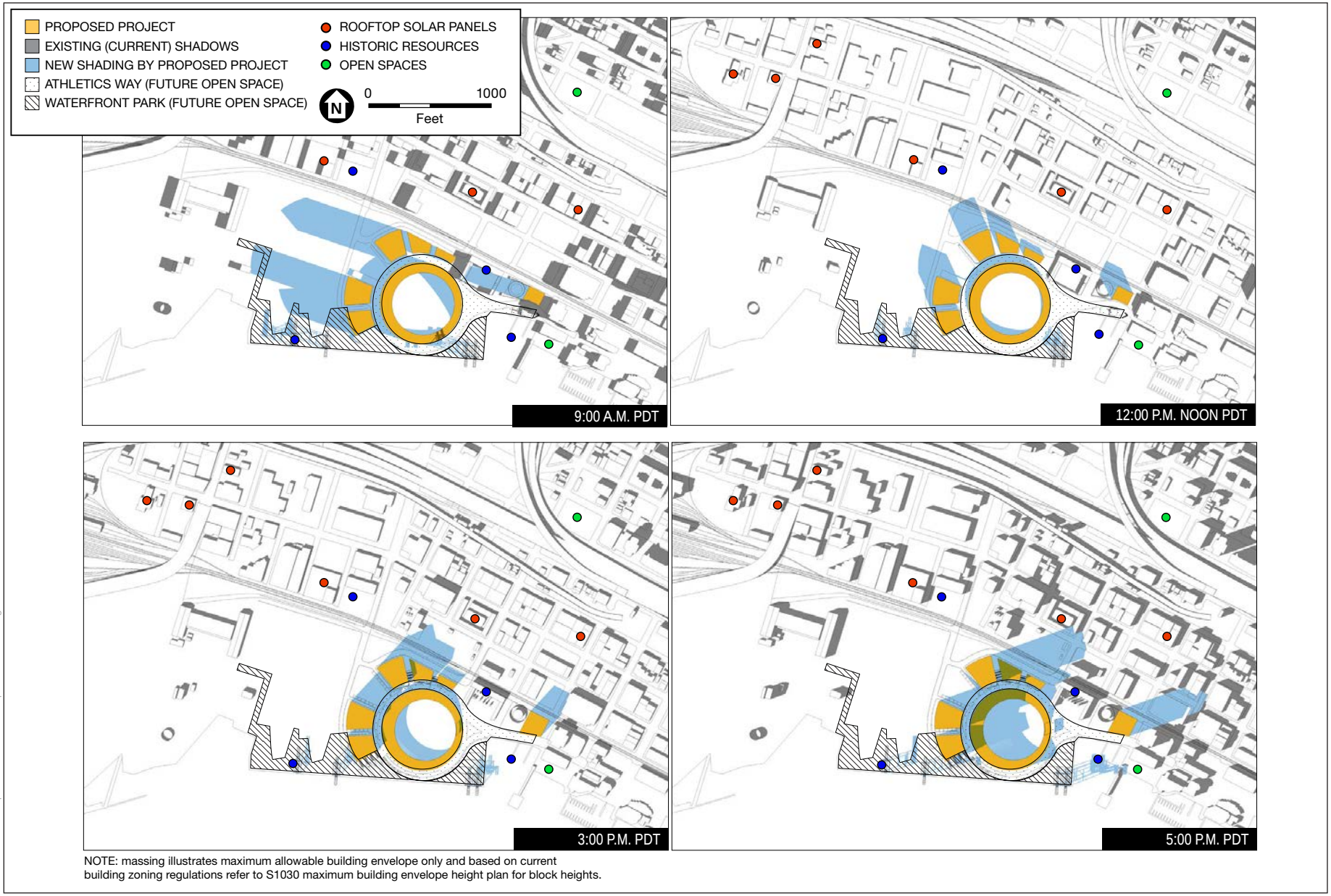
Solar Panels

In general, solar panels collect the most energy from the sun when the sun's rays strike the Earth's surface at 90 degrees (directly overhead). The time of day when solar panels collect the most energy from the sun is typically noon, however, this time varies depending on the sun's position in the sky, clouds, and other atmospheric conditions. Solar panels generally collect energy from the sun for up to four hours before and after noon. Due to daylight savings, this period is approximately 8 a.m. to 4 p.m. during the late fall and most of the winter and 9:00 a.m. to 5:00 p.m. for the remainder of the year (Solar Power Authority, 2019). As shown in **Figures 4.1-22 to 4.1-29**, Phase 1 and buildout operations of the proposed Project would cast shadows on the solar panels on the roofs of the following buildings:

- 101 Myrtle Street (approximately 100 feet north of the Project site);
- 655 Third Street (approximately 400 feet north of the Project site);
- 333 Clay Street (approximately 650 feet north of the Project site);
- 161 Adeline Street (approximately 900 feet northwest of the Project site);
- 336 Adeline Street (approximately 1,100 feet northwest of the Project site); and
- 1221 Third Street (approximately 1,200 feet northwest of the Project site).

With implementation of Phase 1, 101 Myrtle Street would be shaded in the late fall and early winter (i.e., around the winter solstice) only, for a period of up to about two hours, between about 9:00 and 11:00 a.m. By noon, shadow would recede from these buildings entirely. Around 3:00 p.m., shadow would be cast on 655 Third Street until sunset. After full buildout, solar panels on the roof of 101 Myrtle Street and 655 Third Street would receive shadow around the fall and spring equinox. On the winter solstice, shadow would completely cover the solar panels on 101 Myrtle Street, and 655 Third Street for most of the day, from shortly after 9:00 a.m. until almost 4:00 p.m. In addition, after full buildout, shadow would be cast on 161 Adeline Street and 1221 Third Street in the morning in winter, but would recede from the building around 11:00 a.m. through the end of the day.

Solar panels on buildings at 101 Myrtle Street and 655 Third Street would be shaded throughout the day on the winter solstice. While this additional shading during the winter would reduce the ability of solar panels at this address to collect sun power, the reduced amount of energy able to be produced at this address would not substantially impair the function of the building. This is because the solar equipment consists of photovoltaic solar panels used to generate electricity (as opposed to heat or hot water) and any loss in energy can be made up for with additional power drawn from the local provider, PG&E, with no impairment to the functionality of the building. In addition, the massing model used as the basis of this analysis is generally a conservative methodology because it does not account for specific building design elements, such as articulation in massing or setbacks, as these are unknown at this time. Therefore, because shadow cast on nearby solar panels would not substantially impair the function of that building, the proposed Project's impacts on solar panels would be less than significant.



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

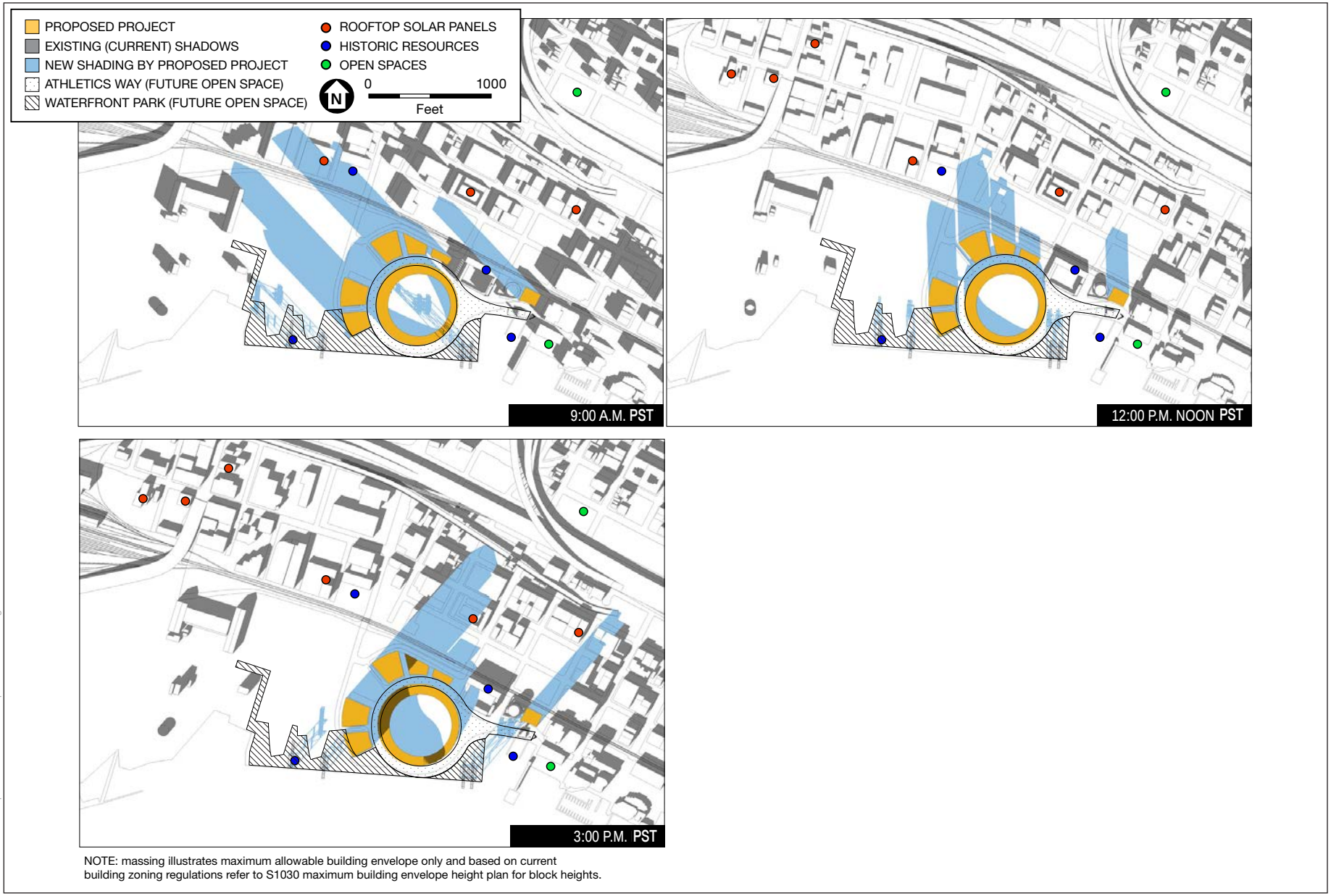
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-22
Shadow Diagram – Existing and Phase 1
Fall Equinox (September 21) – Daylight Savings Time

ESA



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

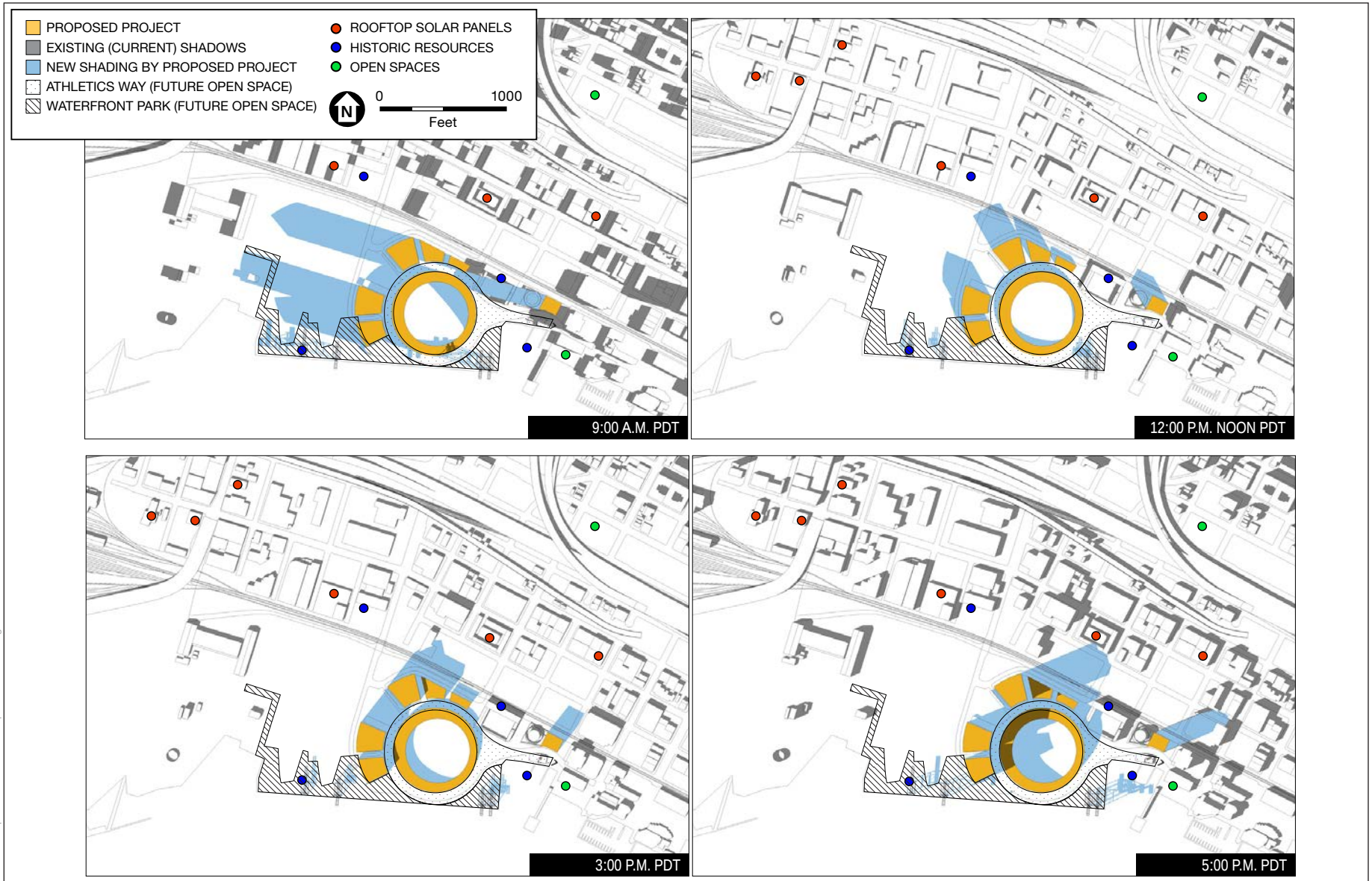
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-23
Shadow Diagram – Existing and Phase 1
Winter Solstice (December 21) – Standard Time

ESA



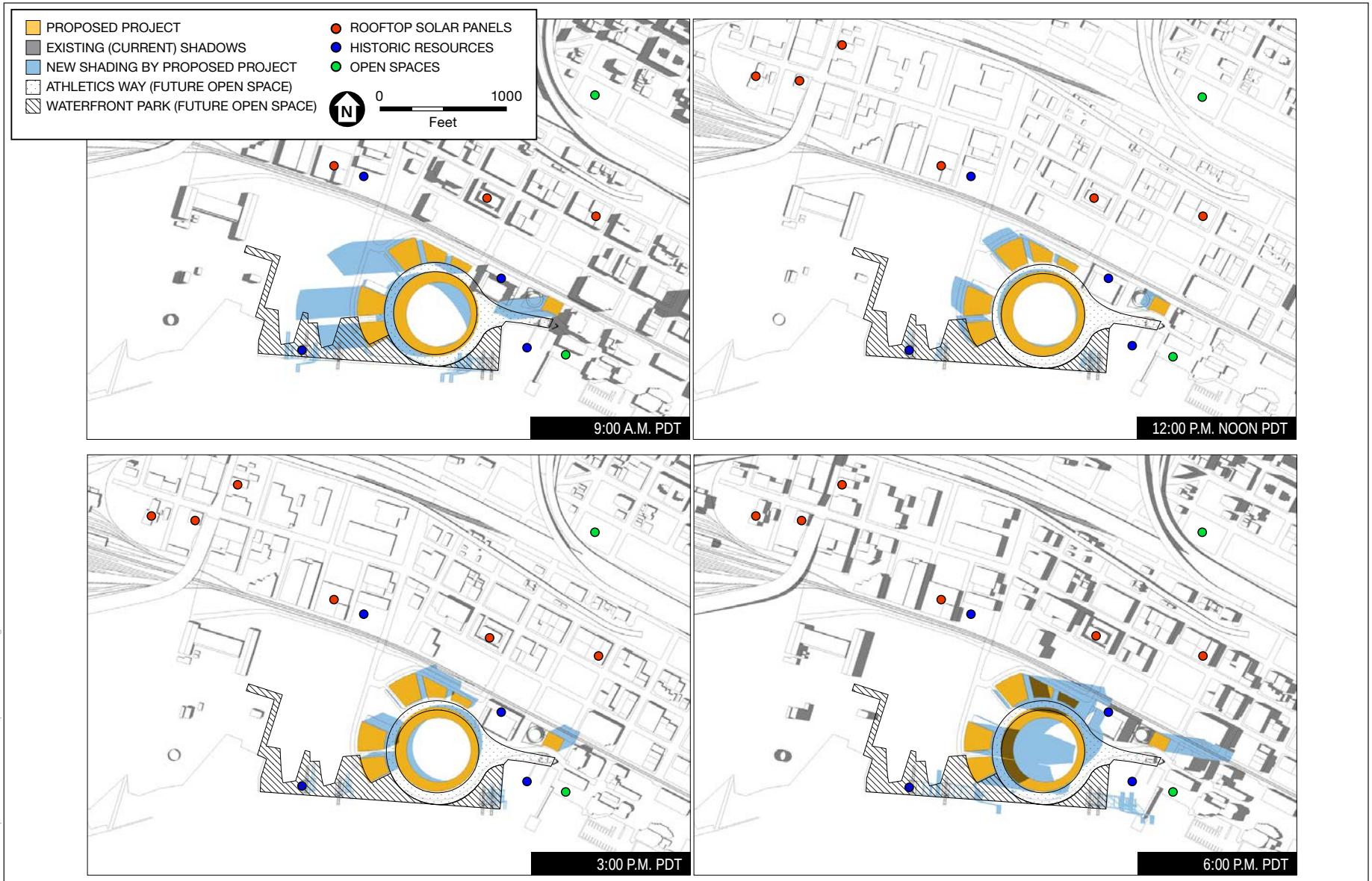
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-24
Shadow Diagram – Existing and Phase 1
Spring Equinox (March 21) – Daylight Savings Time

ESA



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

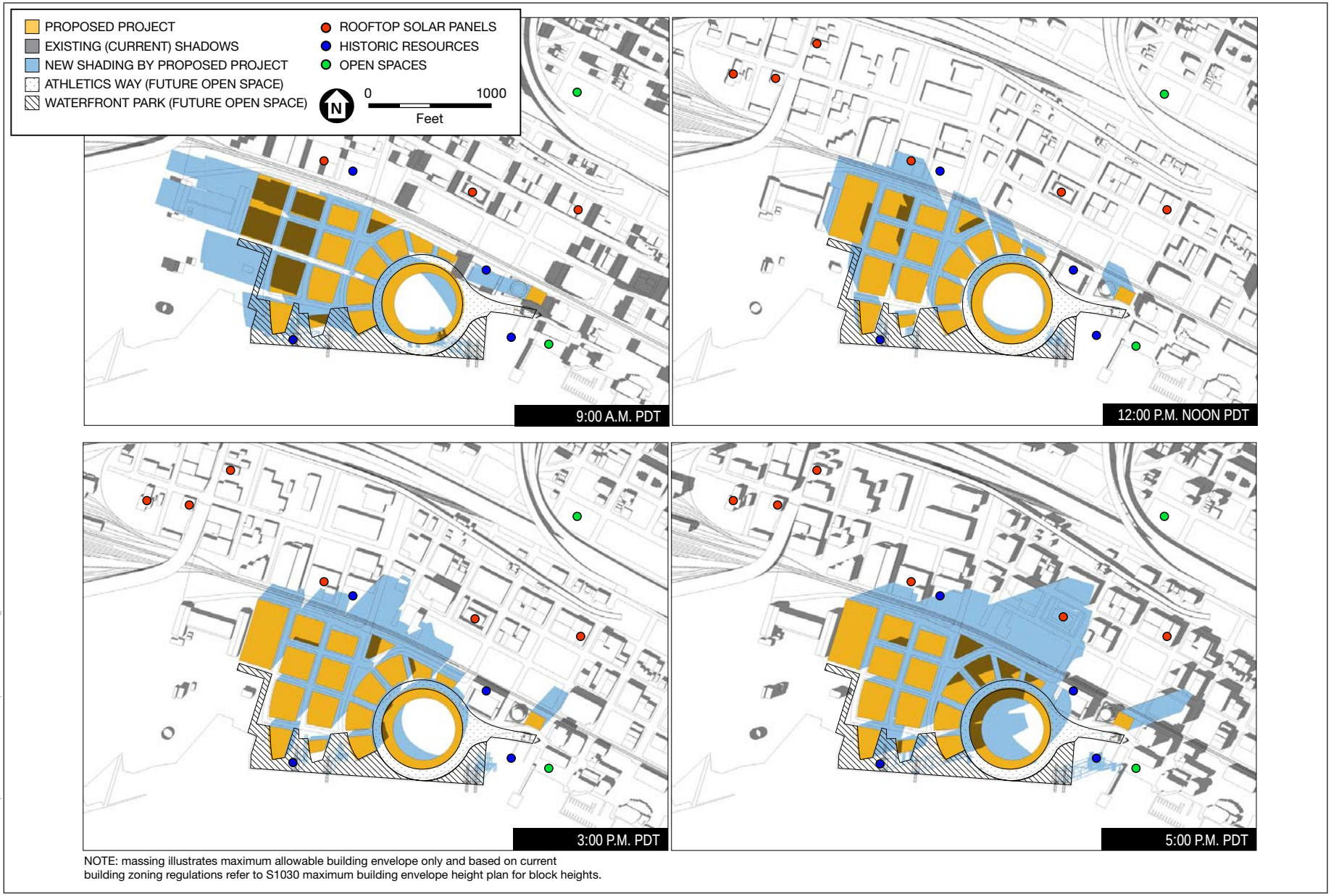
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-25
Shadow Diagram – Existing and Phase 1
Summer Solstice (June 21) – Daylight Savings Time

ESA



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-26
Shadow Diagram – Existing and Buildout
Fall Equinox (September 21) – Daylight Savings Time

ESA

NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

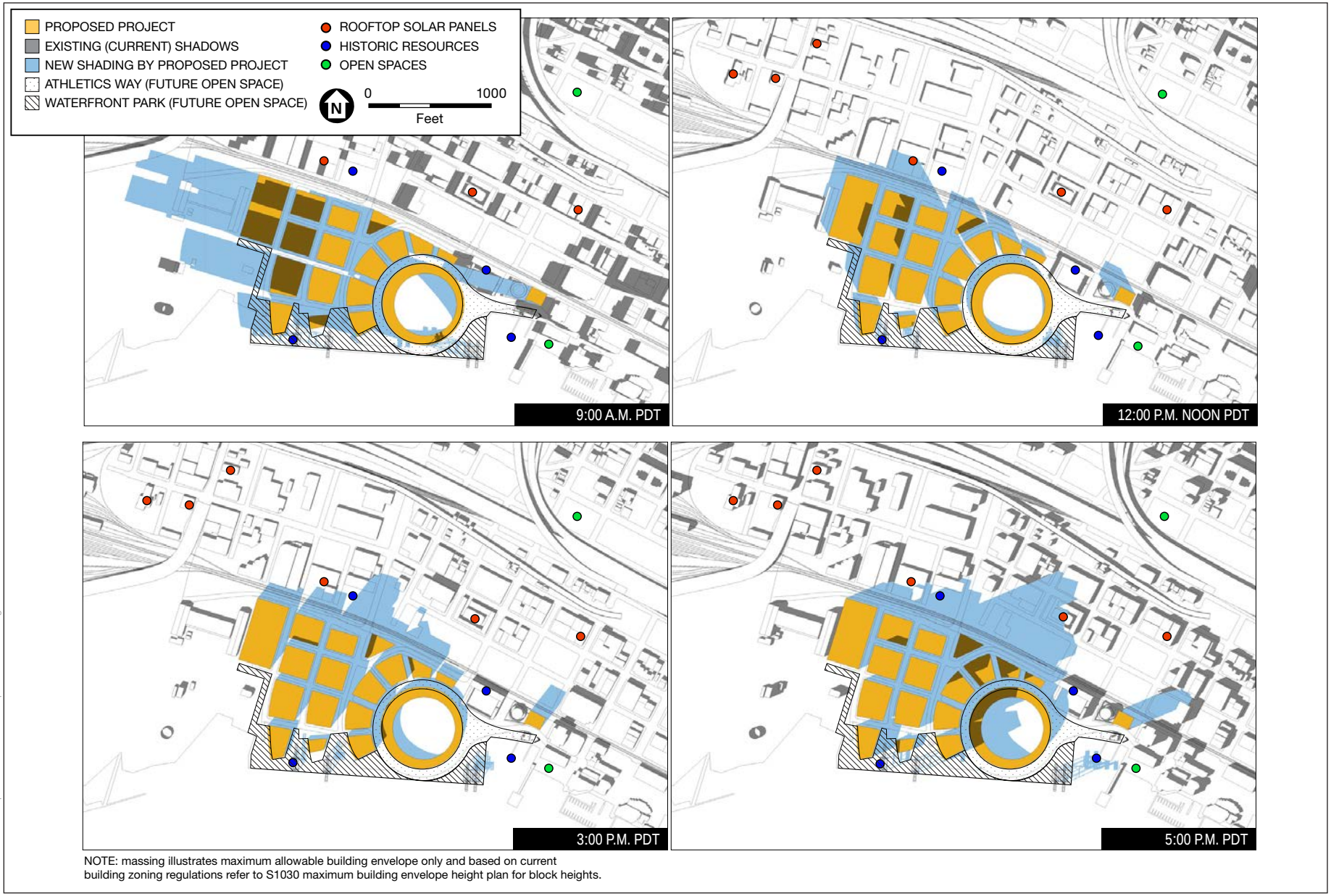
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-27
Shadow Diagram – Existing and Buildout
Winter Solstice (December 21) – Standard Time

ESA



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

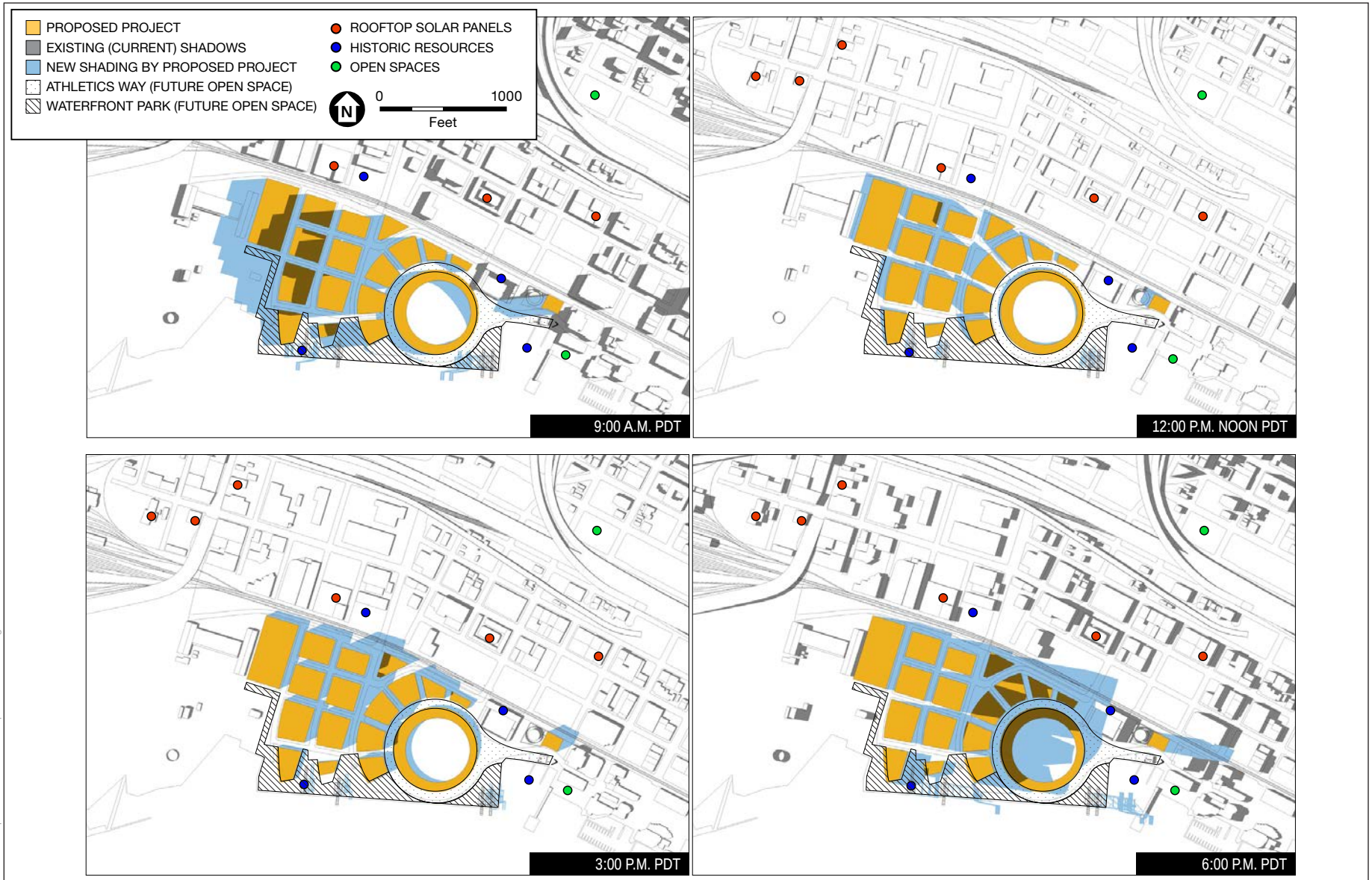
D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-28
Shadow Diagram – Existing and Buildout
Spring Equinox (March 21) – Daylight Savings Time

ESA



NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-29
Shadow Diagram – Existing and Buildout
Summer Solstice (June 21) – Daylight Savings Time

ESA

Public or Quasi-Public Open Spaces

The nearest public park owned and managed by the Oakland Department of Parks, Recreation, and Youth Development is Jefferson Square Park, located across I-880 approximately 0.3 miles from the Project site. As shown in Figures 4.1-22 to 4.1-29, Phase 1 and buildout operations of the proposed Project would not cast shadow on this park during any time of the year.

The nearest public open space near the Project site is a path extending from the entrance to the Lightship *Relief* vessel toward Jack London Square (100 feet from the east edge of the Project site), and a lawn and waiting area for the San Francisco Bay Ferry, located 300 feet from the east edge of the Project site. This area is commonly used for sitting, reading, eating, or waiting for the ferry. As shown in Figures 4.1-22 to 4.1-29, Project shadow would not reach this open area at any point in the year. The proposed Project would have no impact with respect to existing public or quasi-public open spaces.

Future Quasi-Public Open Spaces

The proposed Project would include a network of publicly accessible open spaces that would extend the pedestrian and bicycle network from West Oakland to the waterfront. The proposed Project would have three primary, large-scale open spaces for the Project site: Athletics Way (Water Street Extension), the Ballpark Rooftop Park, and the Waterfront Park.

Because these future, publicly accessible open spaces do not yet exist, any new shadow cast on these spaces would not constitute an impact under CEQA (i.e., the Project cannot affect an expectation of future sunlight on an open space when that open space does not currently exist). Therefore, the paragraph below is presented for informational purposes.

As shown in Figures 4.1-22 to 4.1-29, shadow from Phase 1 and buildout of the proposed Project would primarily be cast in the westerly, northerly, and easterly directions, and would not cover more than a minor portion of these spaces at any point during the year. Users of these spaces would benefit from substantial sunlight throughout the year. Since these future spaces would be publicly accessible with implementation of the proposed Project and would enjoy substantial sunlight throughout the year, this would constitute a less-than-significant impact.

Historic Resources

As discussed in Section 4.4, *Cultural and Tribal Cultural Resources*, the following historic resources are located on or near the Project site:

- Two historic vessels (USS *Potomac* and Lightship *Relief*);
- Southern Pacific Railroad Industrial Landscape Area of Primary Importance; and
- Peaker Power Plant (also known as the PG&E Substation C) on the Project site.

The City has received studies with differing conclusions on the historic significance of one of the Port of Oakland cargo cranes, Crane X-422, on the Project site. If the lead agency determines that the crane is historic, it also has the potential to be shaded by the proposed Project.

In terms of historic resources, the City of Oakland's CEQA thresholds of significance with respect to shadow state that a significant impact would occur if a project were to shade designated historic resources such that the new shadow would materially impair the resource's historic significance. While access to light is not typically an important characteristic of most historic buildings, it may be such a characteristic of, for example, historic places of worship where the light, specifically the light through stained glass windows, conveys or helps to convey the historical significance of the resource. Blockage of that light at certain times of day that coincide with designated times of worship could materially impair the resource's historic significance and lead to a significance impact.

None of the historic resources mentioned above requires access to direct sunlight as a defining characteristic of its historical significance. While Phase 1 and buildout of the proposed Project would cast new shadow on these historic resources at different times of the year, none of these resources contain light-sensitive features that, if shaded, would materially impair the resource's historic significance.

Consistency with General Plan and Uniform Building Code

There are no policies in the General Plan related to the provision of shadow or adequate sunlight with which the proposed Project could conflict. Also, all proposed buildings with the Project would be required to meet the Building Code. Therefore, the proposed Project would not have any conflicts with the General Plan related to the provision of adequate light related to appropriate uses.

Therefore, the proposed Project's impact with respect to shadow is less than significant.

Mitigation: None required.

Wind

Impact AES-5: The Project would create winds that exceed 36 mph for more than one hour during daylight hours during the year. (Criterion 10) (*Significant and Unavoidable with Mitigation*)

As described above under Approach to Analysis, a wind assessment (see Appendix AES) was completed because the Project includes buildings 100 feet or greater (measured to the roof) and is located adjacent to a substantial water body (the Estuary).

Construction Impacts

Phase 1 and Buildout – Construction

As with shadow, temporary structures such as cranes could result in minor effects on pedestrian-level winds. Wind effects during construction could differ from Phase 1 conditions or at full buildout. The wind assessment prepared for the proposed Project provides quantitative results for wind conditions after completion of Phase 1 and then after full buildout, but does not provide quantitative results during interim stages of development, and as a practical matter, it cannot provide such information given the number of possible construction scenarios and schedules for

development of each building. The quantitative analysis of wind impacts of the proposed Project wind is based on the anticipated permanent development of the Phase 1 and full buildout scenarios, described below. However, construction-period effects are also discussed qualitatively below. To provide appropriate context, the construction analysis follows the quantitative Project analysis.

Operational Impacts

The results of the wind assessment, performed to generally define the pedestrian wind environment that currently exists, and would exist with implementation of Phase 1 and Buildout, on sidewalks and open spaces around the Project site, are discussed below.

Table 4.1-6, Summary of Project Wind Test Results, presents the wind tunnel test results, while **Figures 4.1-30 to 4.1-32** present the test point locations and indicate the locations of test points that would exceed the 36 mph average wind speed threshold for more than one hour per year.

TABLE 4.1-6
SUMMARY OF PROJECT WIND TEST RESULTS

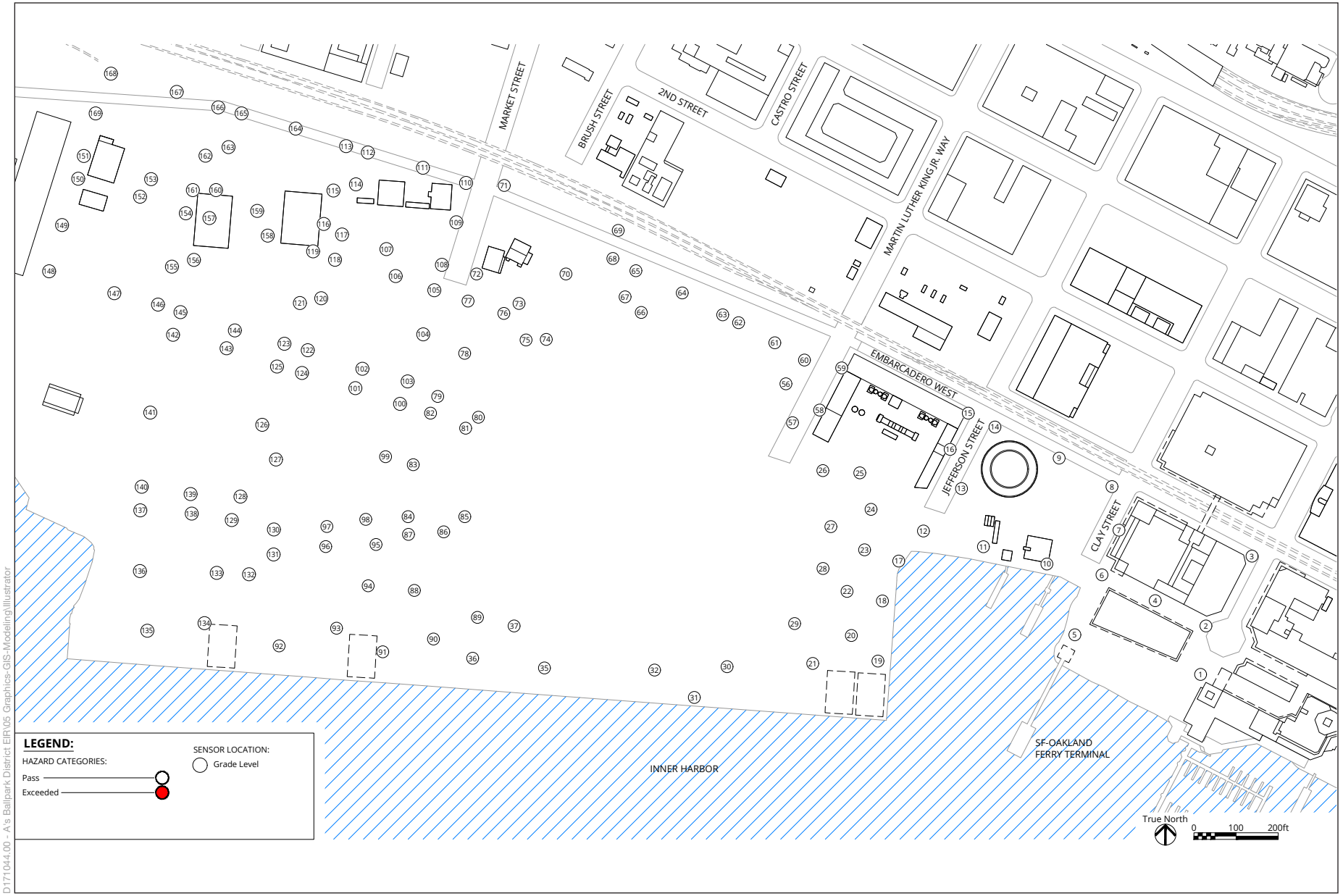
Scenario	Wind Hazard[a]			
	Average Wind Speed (mph)	Total Hours Exceeding Criterion	Hours Change	Total Exceedances
Existing Conditions	27 mph	0 hours	—	0 / 149
Phase 1	31 mph	151 hours	151	46 / 169[b]
Full Buildout	32 mph	103 hours	103	48 / 167[c]
Maritime Reservation Scenario	33 mph	131 hours	131	54 / 167

NOTES:
a Wind hazard = a test point location would exceed the wind hazard criterion if wind speeds exceed 36 mph for at least 1 hour per year, during daylight hours.
b Twenty test points (33-34, 38-55) were added to test the wind effects of Phase 1 development.
c Test points (152-153) were not analyzed for the full buildout scenario because these test points are located within the footprint of Block 20.

SOURCE: RWDI, 2020 (Appendix AES)

Phase 1 and Buildout

As shown in Table 4.1-6, there were no test point locations at which wind speeds exceed the hazard criterion of 36 mph for at least one hour per year under existing conditions. However, implementation of Phase 1 and full buildout would result in 46 and 48 test locations exceeding this criterion, respectively. The 46 test point exceedances under Phase 1 would generally be concentrated at the base and corners of the Phase 1 buildings, and at these locations, would result in exceedances of the hazard criterion for 151 hours during daylight hours annually.



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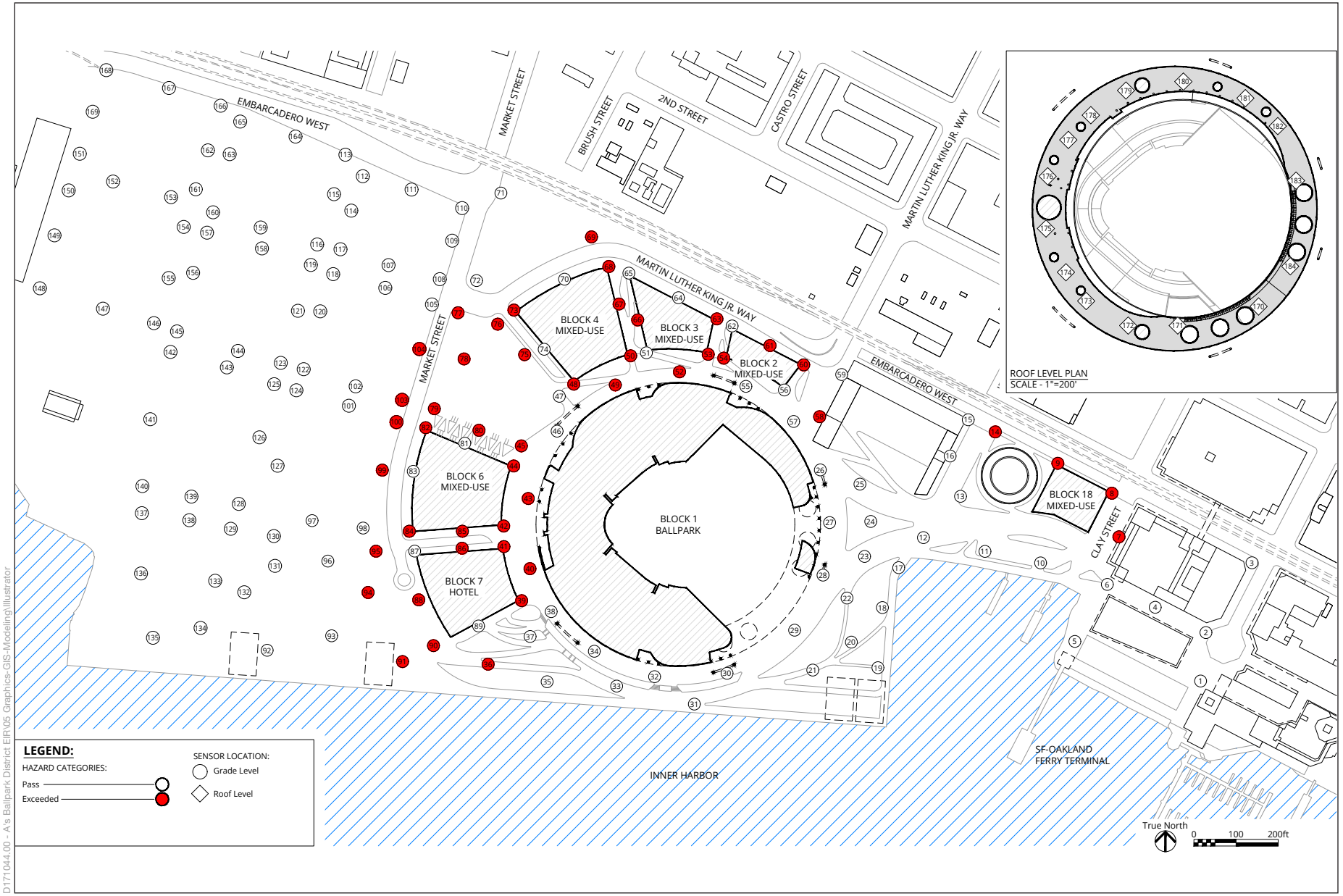
SOURCE: RWDI, 2019

Oakland Waterfront Ballpark District Project

Figure 4.1-30
Pedestrian Wind Hazard – Existing Conditions

ESA



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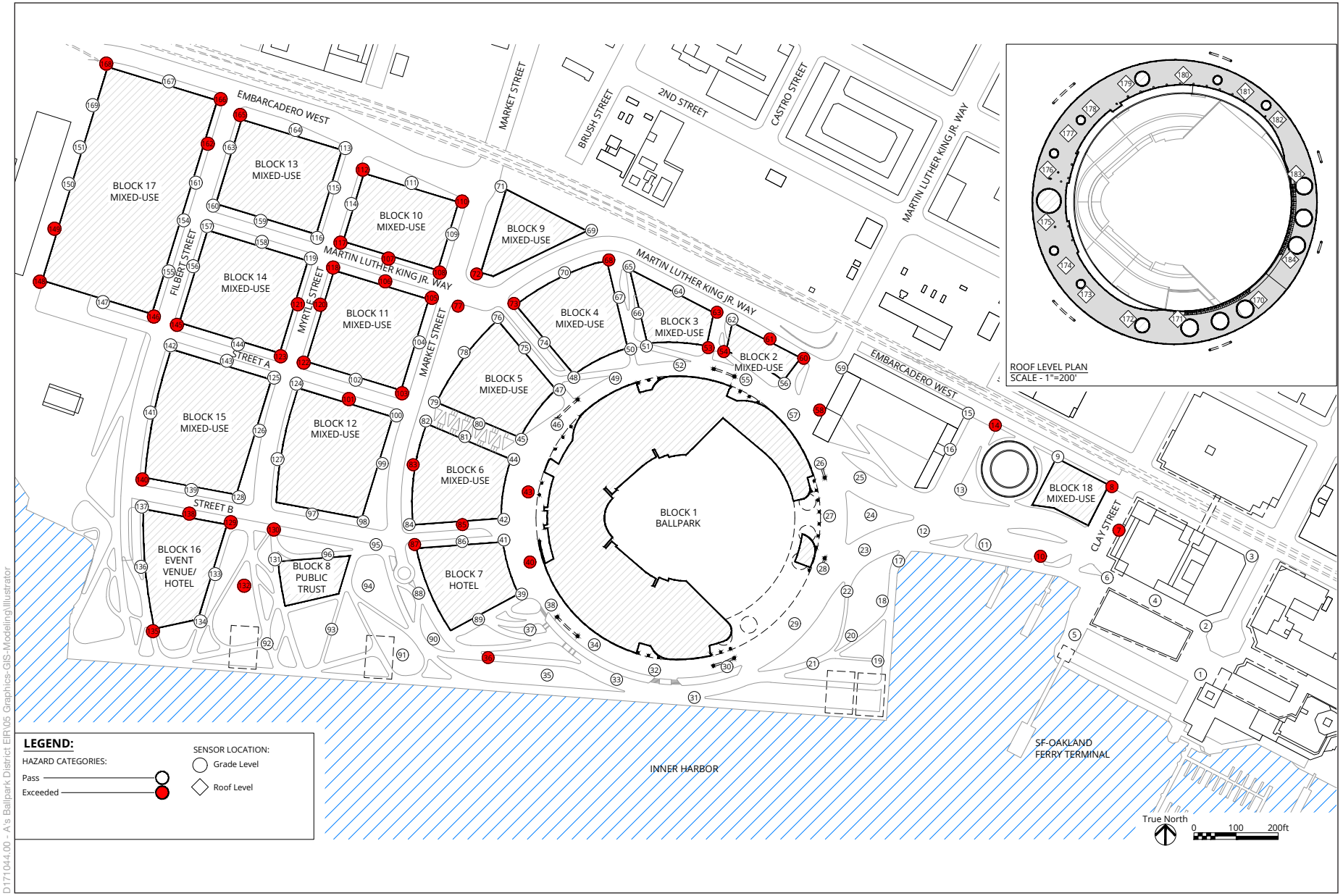
SOURCE: RWDI, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-31
Pedestrian Wind Hazard – Phase 1

ESA



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SOURCE: RWDI, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-32
Pedestrian Wind Hazard – Full Buildout

ESA

At full buildout, the 46 exceedances under Phase 1 would increase to 48, and the locations of exceedances would be dispersed across the Project site. Compared to Phase 1 conditions, under buildout, the wind hazard exceedances would generally move west toward the direction of prevailing winds due to increased shelter that would be provided to buildings farther downwind. The 48 locations would exceed the hazard criterion for a total of 103 hours per year, which would represent 48 fewer hazard exceedance hours compared to Phase 1 conditions, but would represent a degradation (103 more hours of hazard exceedance) from existing conditions.

As explained above in the Approach to Analysis, the model that was tested in the wind tunnel was based on a simple massing plan of the proposed Project and not on actual building designs because detailed building plans have not yet been developed. In particular, the model includes generally rectilinear building forms (except for the proposed ballpark) without setbacks, podiums, or building articulation that would reduce pedestrian-level wind speeds. Therefore, the analysis presents a conservative evaluation of potential Project wind effects and likely overstates the changes in wind speeds that would result from the Project. Nevertheless, based on the foregoing, the operational wind impact of the proposed Project would be significant. Implementation of Mitigation Measure AES-1, which would require wind-tunnel testing of individual building designs during Project development and design revisions to reduce pedestrian-level wind speeds, would reduce the severity of Project wind effects. Mitigation Measure AES-1 would ensure that at full buildout the number of hazardous wind locations or annual hours exceeding the wind hazard criterion are eliminated or reduced to the extent feasible, and that wind hazard exceedances that do result from the Project are minimized. Many exceedances of the wind hazard criterion could be eliminated through design measures that would change the shape of the building or the height of its street wall (e.g., through introduction of a tower set back on a podium), and/or a combination of street furniture and landscaping that would protect pedestrian walkways and building entrances. However, although including articulation in building designs and adding landscaping and street furniture can reduce wind speeds and eliminate wind hazards in specific locations, it cannot be stated with certainty at this stage of Project design that all wind hazards identified in the wind tunnel test would be eliminated. As a result, even with the implementation of Mitigation Measure AES-1, this operational impact of the proposed Project would be significant and unavoidable with mitigation.

Wind effects during interim conditions could differ from Phase 1 conditions or at full buildout. The wind assessment prepared for the proposed Project focuses on effects of completion of Phase 1 and buildout. A qualitative discussion of wind effects during construction and the phased buildout is provided below.

Based on the City of Oakland's CEQA thresholds, buildings over 100 feet located next to a body of water have the potential to redirect or alter wind speeds. As such, any individual building constructed that is over 100 feet tall could substantially increase wind speeds and could potentially create interim wind-hazard impacts. These interim wind-hazard impacts could occur during partial buildout and may or may not occur at full buildout because winds redirected by one building can interact with winds redirected by another building. In addition, the building configurations tested in the wind tunnel do not include design measures and landscape features, such as podium setbacks, terraces, architectural canopies or screens, vertical or horizontal fins, chamfered corners, and other

articulations to the building façade, as well as ground-level fences or screens, shrubs and trees, and/or street furniture, which could offer protection from hazardous winds.

Wind speeds were tested in the wind tunnel for existing conditions, Phase 1, full buildout, and for the Maritime Reservation Scenarios only. However, during partial buildout, wind hazards could occur at public locations not identified in the wind assessment, and wind effects at identified wind-hazard locations could be greater or lesser in severity or duration than shown by the assessment. During the rather lengthy construction period, a particular building configuration resulting from development of one or more individual structures could result in localized wind conditions that would be different than those reported for the Project at completion of Phase 1 or at full buildout. It is possible that such individual building(s) could cause the wind hazard criterion to be exceeded, perhaps for one or more years. However, once surrounding buildings have been completed, and they provide effective wind shelter as reported in the Project wind tunnel test, these temporary impacts could potentially cease or change. Depending upon the circumstances and the actual phasing of the construction, these temporary impacts could continue at various locations until the full buildout is completed. Therefore, this EIR conservatively considers such an occurrence to be a potentially significant and unavoidable wind impact with mitigation, as is the case for the proposed Project (both Phase 1 and buildout). Furthermore, if the proposed Project were not to be completed in the time period anticipated, a partial buildout situation could occur for an extended period, resulting in different wind characteristics than those tested in the wind tunnel. This, too, could result in one or more new exceedances of the wind hazard criterion and thus a significant and unavoidable wind impact with mitigation.

Implementation of Mitigation Measure AES-1 would reduce the severity of wind impacts under partial buildout conditions. However, as with Phase 1 and buildout, it cannot be stated with certainty whether Mitigation Measure AES-1 would reduce impacts to a less-than-significant level. As a result, the impact of the proposed Project related to interim hazardous wind conditions would be significant and unavoidable with mitigation.

Mitigation Measure AES-1: Wind Impact Analysis and Mitigation for Buildings 100 Feet or Greater in Height.

With the goal of preventing to the extent feasible a net increase in the number of hazardous wind exceedance locations, compared to existing conditions, prior to obtaining a building permit for any building within the Project site proposed to be at least 100 feet in height, the Project sponsor (including any subsequent developer) shall undertake a wind analysis for such proposed building.

The wind analysis shall be conducted by a qualified wind consultant. The consultant shall conduct an analysis of the proposed building using a model that represents the proposed building in the context of then-existing conditions, as well as in the context of the proposed Project as a whole (the buildout scenario tested in the EIR, as may be modified from time to time by the Project sponsor to reflect actual building designs known at the time). The testing shall include test points deemed appropriate by the consultant and agreed upon by the Oakland Department of Planning & Building to determine the wind performance of the building, such as building entrances and sidewalks, and the consultant's report shall be submitted to the Oakland Department of Planning & Building. If the wind consultant demonstrates to the satisfaction of the Oakland Department of

Planning & Building that the modified design would not create a net increase in hazardous wind hours or locations under partial buildout or buildout conditions, compared to then-existing conditions, no further review would be required.

If the wind analysis determines that the building's design would increase the hours of wind hazard or the number of test points subject to hazardous winds, compared to then-existing conditions, the wind consultant shall notify the City and the Project sponsor. The Project sponsor shall work with the wind consultant to identify feasible mitigation strategies, including design changes (e.g., setbacks, rounded/chamfered building corners, or stepped facades), to eliminate or reduce wind hazards to the maximum feasible extent without unduly restricting development potential. Wind reduction strategies could also include features such as landscaping and/or installation of canopies along building frontages, and the like.

Significance after Mitigation: Significant and Unavoidable. Since it cannot be stated with certainty that no such localized wind hazard exceedances would result, the impact could be significant with development of Phase 1, with buildout, and/or during the interim period, even with mitigation. Therefore, this impact would be considered significant and unavoidable with mitigation.

Maritime Reservation Scenario

Under the Maritime Reservation Scenario, up to approximately ten acres of the proposed Project site would not be developed. The reconfigured Project site boundary would change and the Project site area would become smaller. The analysis below compares the differences between the Maritime Reservation Scenario and full buildout of the proposed Project. Visual simulations and shadow diagrams for the Maritime Reservation Scenario are included in Appendix AES.

Like the proposed Project, the Maritime Reservation Scenario would qualify under Public Resources Code Section 21099(d) as an infill project for which aesthetic issues are not "impacts" within the meaning of CEQA. These topics are therefore addressed for information purposes.

Non-CEQA Topics

Scenic Vistas and Scenic Resources

Under the Maritime Reservation Scenario, impacts to scenic vistas and resources would be similar to under full buildout. Similar to the proposed Project, buildings under the Maritime Reservation Scenario would become visually prominent features of the visual landscape that would result in the loss of open skyline when viewing the Project site from nearby areas. It would also partially affect scenic vistas of San Francisco Bay, the downtown Oakland skyline, and the Oakland Hills. Because the Maritime Reservation Scenario would provide new waterfront and elevated publicly accessible scenic viewpoints from which scenic resources and scenic vistas can be viewed, like the proposed Project, the Maritime Reservation Scenario would also have a less-than-significant impact on scenic resources and scenic vistas if the proposed Project were subject to a review of aesthetics under CEQA.

Visual Character and Quality

Impacts from the Maritime Reservation Scenario would generally be the same as impacts from full buildout of the proposed Project. To accommodate the same development program on a smaller site, the Maritime Reservation Scenario would result in a slight increase in development intensity and density on certain Project blocks. The changes to the intensity and density of development at the Project site would result in generally the same changes to the visual character and quality of the site. Moreover, the visual character of the Project site would change from primarily industrial container storage to an intensely developed mixed-use civic and sports-related neighborhood, as would be the case under the Project. Like the proposed Project, the ballpark under the Maritime Reservation Scenario would give the area an entertainment-oriented character and would serve to activate the neighborhood on game days. While the removal of one or more of the four container shipping cranes may be noticeable to some observers, it is likely that many observers would not consider the changes to the visual setting between the proposed Project and the Maritime Reservation Scenario to be substantial. Therefore, the Maritime Reservation Scenario would result in generally the same less-than-significant impacts to visual character and quality if the proposed Project were subject to a review of aesthetics under CEQA.

Light and Glare

Light and glare impacts from the Maritime Reservation Scenario would generally be the same as impacts from full buildout of the proposed Project. Buildings would be required to comply with Title 24 standards, and Improvement Measure AES-1, which would result in shielded light fixtures during construction, would likewise apply to the Maritime Reservation Scenario. The Maritime Reservation Scenario would also be subject to the Oakland Outdoor Lighting Standards, which would require exterior lighting fixtures to be adequately shielded to prevent unnecessary glare onto adjacent properties. While compliance with these policies would reduce light and glare effects from the Maritime Reservation Scenario, the ballpark scoreboard and ribbon lights would be the same under the Maritime Reservation Scenario, which are the primary contributors to glare impacts to nearby receptors. Therefore, the light and glare impact from the Maritime Reservation Scenario would have the same significant and unavoidable impacts as the proposed Project if the proposed Project's aesthetics impacts were considered impacts under CEQA.

CEQA Topics

Shadow

The Maritime Reservation Scenario would result in the same less-than-significant impacts as the proposed Project with regard to shadow. As shown in **Figure 4.1-33**, the Maritime Reservation Scenario would not cast shadow on existing parks during any time of the year. Similar to the proposed Project, the Maritime Reservation Scenario would cast shadow on solar panels across the UPRR tracks from the Project site; however, like the proposed Project, shadow cast by the Maritime Reservation Scenario would not substantially impair the function of that building.

NOTE: massing illustrates maximum allowable building envelope only and based on current building zoning regulations refer to S1030 maximum building envelope height plan for block heights.

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SOURCE: BIG, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-33
Shadow Diagram – Existing and Buildout
Maritime Reservation Scenario
Winter Solstice (December 21) – Standard Time

ESA

This scenario would result in removal of one or more of the four shipping container cranes and would include buildings with the same maximum heights as would be developed under the proposed Project. Therefore, similar shadows would be cast under the Maritime Reservation Scenario as those cast by the proposed Project, with new shadow falling on historic resources for similar durations of the day and year. As with the Project, these shadows would be most pronounced in late fall, early spring, and in particular, around the winter solstice, when shadows are longest (see Figure 4.1-33). However, none of the historic resources that would be affected contain light-sensitive features that, if shaded, would materially impair the resource's historic significance. Therefore, the Maritime Reservation Scenario would have the same less-than-significant shadow impacts as the proposed Project.

Wind

The Maritime Reservation Scenario would result in the same significant and unavoidable impacts with respect to wind. As shown in Table 4.1-6, the Maritime Reservation Scenario would cause wind speeds at the Project site to increase. Under this scenario, wind speeds would exceed the wind-hazard criterion of 36 mph for 131 hours per year. In addition, the hazard criterion would be exceeded at 54 of 167 test points. Mitigation Measure AES-1 would apply to the Maritime Reservation Scenario as well, which would reduce wind impacts. However, like the proposed Project, it cannot be stated with certainty whether Mitigation Measure AES-1 would reduce impacts to a less-than-significant level. As a result, the impact of the Maritime Reservation Scenario related to hazardous wind conditions would be the same as the proposed Project's wind impacts, and would be significant and unavoidable with mitigation.

4.1.5 Cumulative Impacts

Impact AES-1.CU: The Project, combined with cumulative development in the Project vicinity and citywide, would result in significant cumulative aesthetics, wind, and shadow impacts. (*Significant and Unavoidable with Mitigation, but not CEQA impacts with regard to aesthetics*)

Geographic Context

The geographic scope for cumulative impacts on aesthetics, light and glare, wind, and shadow is the area east of Adeline Street, south of I-880, west of Washington Street, and north of the Estuary. Portions of this area are included in the draft Downtown Oakland Specific Plan and portions are included in the West Oakland Specific Plan. **Figures 4.1-34 through 4.1-38** show existing key viewpoints side by side with visual simulations of cumulative development for comparison purposes and form the basis for the analysis of visual resources, scenic vistas, and visual quality and character below.

As described above under *Visual Simulations*, the two large projects approved in Alameda that are discussed in Section 4.0—Alameda Point (redevelopment of the former Naval Air Station Alameda) and the Alameda Landing project—are not included in the 3D model upon which the visual simulations are based. This is because, although both are large projects, neither would be readily discernible in the two visual simulations in which these projects are in the field of view.

EXISTING

CUMULATIVE DEVELOPMENT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-34
Visual Simulation for Key Viewpoint 1 (Existing and Cumulative)
Westward View Across Project Site from the Intersection of Water Street and Clay Street

ESA

EXISTING

CUMULATIVE DEVELOPMENT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

SFO\170XX\D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-35
Visual Simulation for Key Viewpoint 2 (Existing and Cumulative)
Southwest View toward Project Site from Martin Luther King Jr. Way

ESA

EXISTING

CUMULATIVE DEVELOPMENT

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

SFO\170XXX\D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

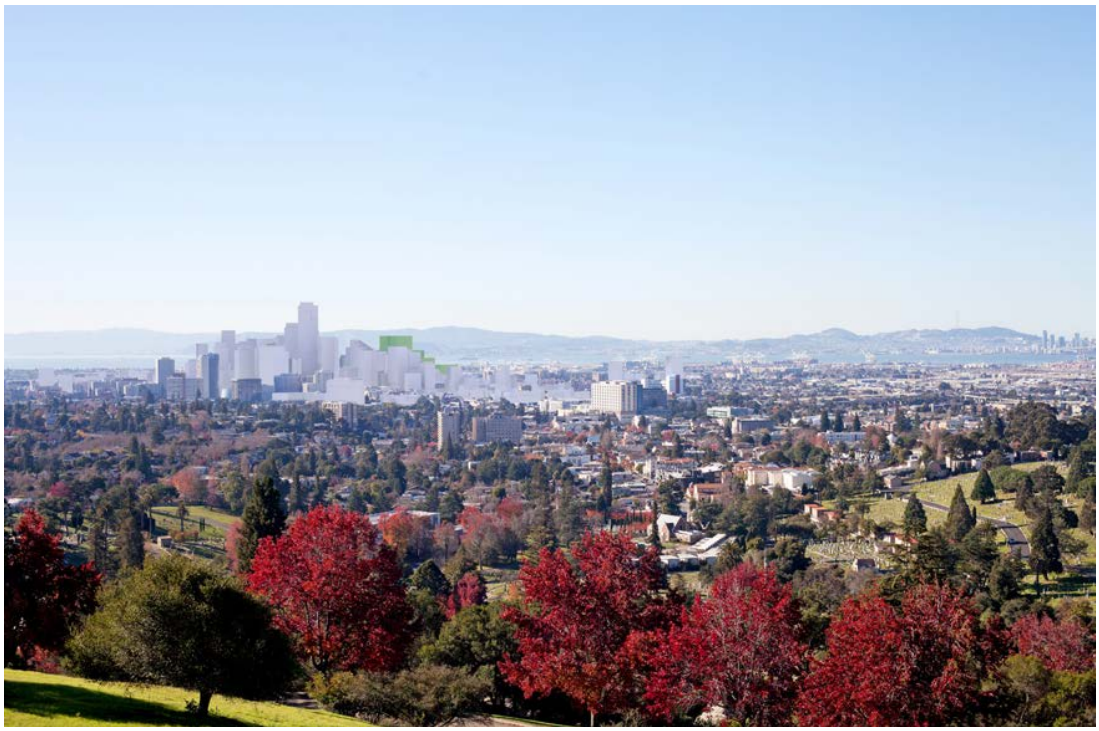
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-36
Visual Simulation for Key Viewpoint 3 (Existing and Cumulative)
Southeast View toward Project Site from the San Francisco-Oakland Bay Bridge

ESA

EXISTING



CUMULATIVE DEVELOPMENT

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

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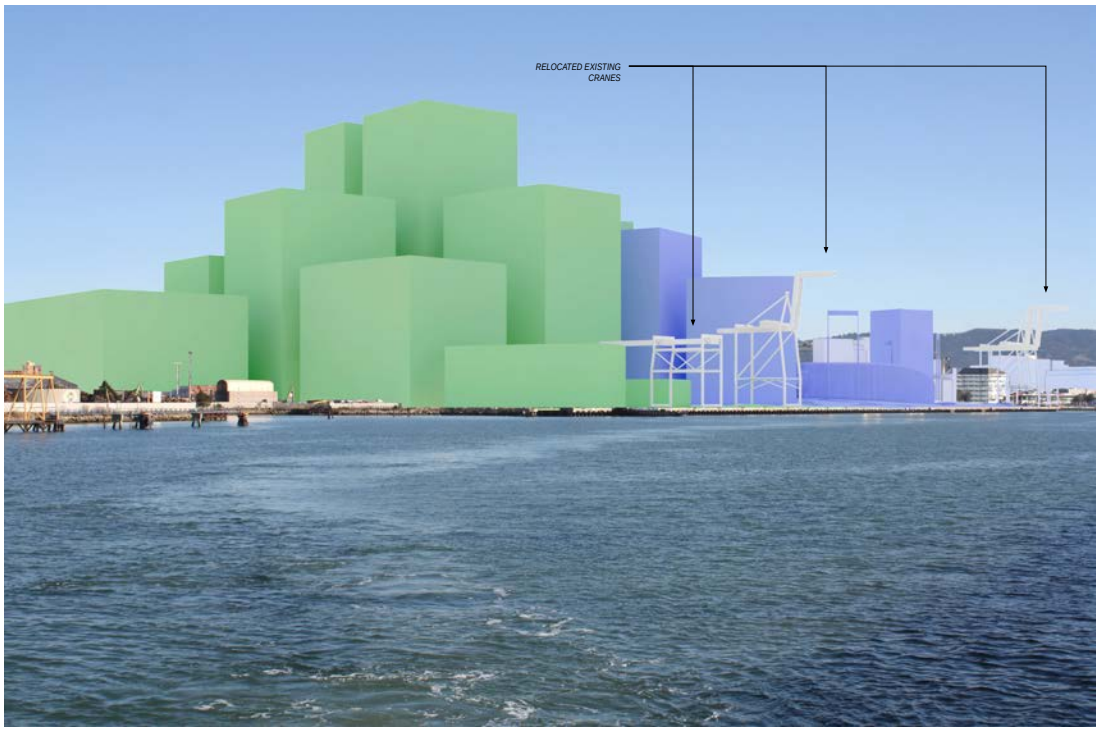
SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-37
Visual Simulation for Key Viewpoint 4 (Existing and Cumulative)
Southwest View toward Project Site from Mountain View Cemetery

ESA

EXISTING



CUMULATIVE DEVELOPMENT

NOTE: The Project sponsor intends to retain and relocate the existing container cranes on site. However, as stated in the Project Description, retention of the cranes may not be feasible. If any of the cranes were not retained, one or more cranes would be absent from these views.

LEGEND
- PHASE 1
- FULL BUILDOUT
- CUMULATIVE
- PROJECT VARIANT

SFO\170XXX\D171044.00 - A's Ballpark District EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Environmental Vision, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-38
Visual Simulation for Key Viewpoint 5 (Existing and Cumulative)
Northeast View toward Project Site from the San Francisco Bay Ferry on the Oakland Estuary

ESA

Cumulative Impact and Project Contribution

Visual Resources, Scenic Vistas, and Visual Quality and Character (Not a CEQA Consideration)

Development of cumulative projects as described in the Downtown Oakland Specific Plan and West Oakland Specific Plan would bring increased development intensity on key sites near I-880 and near the waterfront. Cumulative projects could affect the same visual resources and scenic vistas analyzed above for the proposed Project, and one or more cumulative projects could obstruct scenic vistas from various public vantage points, depending on the height, massing, and density of future development in the area. However, development under the cumulative projects scenario could serve to enhance individual visual resources and scenic vistas described in the Oakland General Plan. For instance, expanding the downtown Oakland skyline through development of projects at the height and scale outlined in the Downtown Oakland Specific Plan could expand views of this visual resource from some locations nearby, enhancing the status of downtown and its skyline as a visual resource, and increased waterfront access could improve views of the Estuary and the Bay.

At the same time, a greater number of tall buildings would further obstruct views of the Oakland Hills and/or San Francisco Bay from some locations. Development of these cumulative projects would change the visual character and quality of the surrounding area by increasing the development intensity on individual sites by building more mid- to high-rise buildings. However, because development of cumulative projects listed above would be subject to design review to ensure their consistency with the General Plan, the cumulative impact would be consistent with the City's long-term vision for this area, and this impact would not necessarily be adverse.

Moreover, the Project site's distance from the majority of downtown—on the opposite side of the I-880 freeway—would limit any contribution that the Project might make to cumulative visual changes. Therefore, the cumulative impact with respect to aesthetics would be less than significant if the proposed Project were subject to an aesthetics analysis under CEQA.

Light and Glare (Not a CEQA Consideration)

Development of cumulative projects would increase the overall amount of light in the area because the intensity and density of development is anticipated to increase near I-880 and the waterfront. Cumulative projects would be required to implement City of Oakland Standard Condition of Approval (SCA) #19, Lighting Plan, which would require exterior lighting fixtures to be adequately shielded to prevent unnecessary glare onto adjacent properties. In addition, Oakland SCA #29, Bird Collision Reduction Measures (applied to this Project through Mitigation Measure BIO-1b), would apply to cumulative projects which would reduce the amount of reflective glass and polished surfaces on cumulative projects. As discussed under Impact AES-3, lighting and glare associated with the proposed Project could substantially increase nighttime light and glare in the Project area. Improvement Measures AES-1 and AES-2 could reduce this impact, but it cannot be stated with certainty that it could be reduced to a less-than-significant level, and the Project's impact would be conservatively determined to be cumulatively considerable, and significant and unavoidable if the proposed Project's aesthetics impacts were subject to CEQA.

Shadow

There are reasonably foreseeable projects in the Downtown Oakland Specific Plan and West Oakland Specific Plan that could conceivably combine with shadow effects of the proposed Project. The Downtown Oakland Specific Plan conservatively assumed that new shadow as a result of specific plan implementation would have a significant and unavoidable impact because it could not be known with certainty that development under the specific plan would not impair the function of a building using passive solar collection; impair the beneficial use of a public or quasi-public park, lawn, garden, or open space; shadows on an historic resource, or otherwise result in inadequate provision of light. However, the West Oakland Specific Plan identified no significant impacts related to shade and shadow, thus requiring no mitigation measures or SCAs. Because the Downtown Oakland Specific Plan conservatively assumed that new shadow as a result of the plan would have a significant and unavoidable impact, and because the Project site is located in close proximity to the Downtown Oakland Specific Plan area, proposed Project shadow could combine with shadow from development under the Downtown Oakland Specific Plan.

However, as stated in the project-level analysis in Impact AES-4, Project shadow would not reach publicly accessible parks or open areas at any point in the year. In addition, historic resources that could receive shadow from the proposed Project, in combination with cumulative projects, are not particularly light-sensitive or light-dependent. Therefore, the proposed Project would not contribute to a significant cumulative impact related to shadow on public parks or open spaces. Additionally, the proposed Project would not impair the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors, and thus would not contribute to a significant cumulative impact related to building solar facilities. Moreover, increased shadow on historic resources would not substantially impair the resource's historic significance such that it would no longer be eligible for listing on a national, State, or local register of historic places. Therefore, the proposed Project's contribution to cumulative shadow impacts would be less than significant.

Wind

The wind assessment (see Appendix AES) modeled development of cumulative projects within a 1,500-foot radius of the Project site. As shown in **Table 4.1-7** below, development under the cumulative scenario would slightly improve wind conditions when compared to the proposed Project scenario. There would be 48 locations that would exceed the wind hazard criterion of 36 mph for at least one hour of the year. These 48 locations would exceed the hazard criterion for 109 hours annually, representing a potentially significant cumulative impact. As described in Impact AES-6 above and shown in Table 4.1-7 below, Phase 1 of the proposed Project would result in 46 test locations exceeding the hazard criterion, and full buildout of the proposed Project would result in 48 test locations exceeding the hazard criterion. Moreover, Phase 1 and full buildout of the proposed Project would exceed the 36 mph threshold for a total of 151 and 103 hours, respectively.

TABLE 4.1-7
SUMMARY OF CUMULATIVE WIND TEST RESULTS

Scenario	Wind Hazard[a]			
	Average Wind Speed (mph)	Total Hours Exceeding Criterion	Hours Change	Total Exceedances
Existing Conditions	27 mph	0 hrs	—	0 / 149
Phase 1	31 mph	151 hrs	151	46 / 169[b]
Full Buildout	32 mph	103 hrs	103	48 / 167[c]
Cumulative (Full Buildout)[d]	32 mph	109 hrs	109	48 / 167

NOTES:
a Wind hazard = a test point location would exceed the wind hazard criterion if wind speeds exceed 36 mph for at least 1 hour per year, during daylight hours.
b Twenty test points (33-34, 38-55) were added to test the wind effects of Phase 1 development
c Test points (152-153) were not analyzed for the full buildout scenario because these test points are located within the footprint of Block 20.
d Cumulative Maritime Reservation Scenario (Full Buildout) conditions not modeled separately and discussed in the analysis below under *Maritime Reservation Scenario – Cumulative*.

As shown in **Figure 4.1-39**, there would be a substantial number of exceedances of the wind hazard criterion under the cumulative scenario, which are in the immediate vicinity of proposed Project buildings. Thus, the proposed Project's contribution to this significant cumulative impact would be considerable. While implementation of Mitigation Measure AES-1, described above, would reduce this impact to the extent feasible, there is no practical way to guarantee that all wind hazards on Project sidewalks and open spaces would be eliminated without changing the basic character of these open spaces. As a result, even with the implementation of Mitigation Measure AES-1, this cumulative impact would be significant and unavoidable with mitigation.

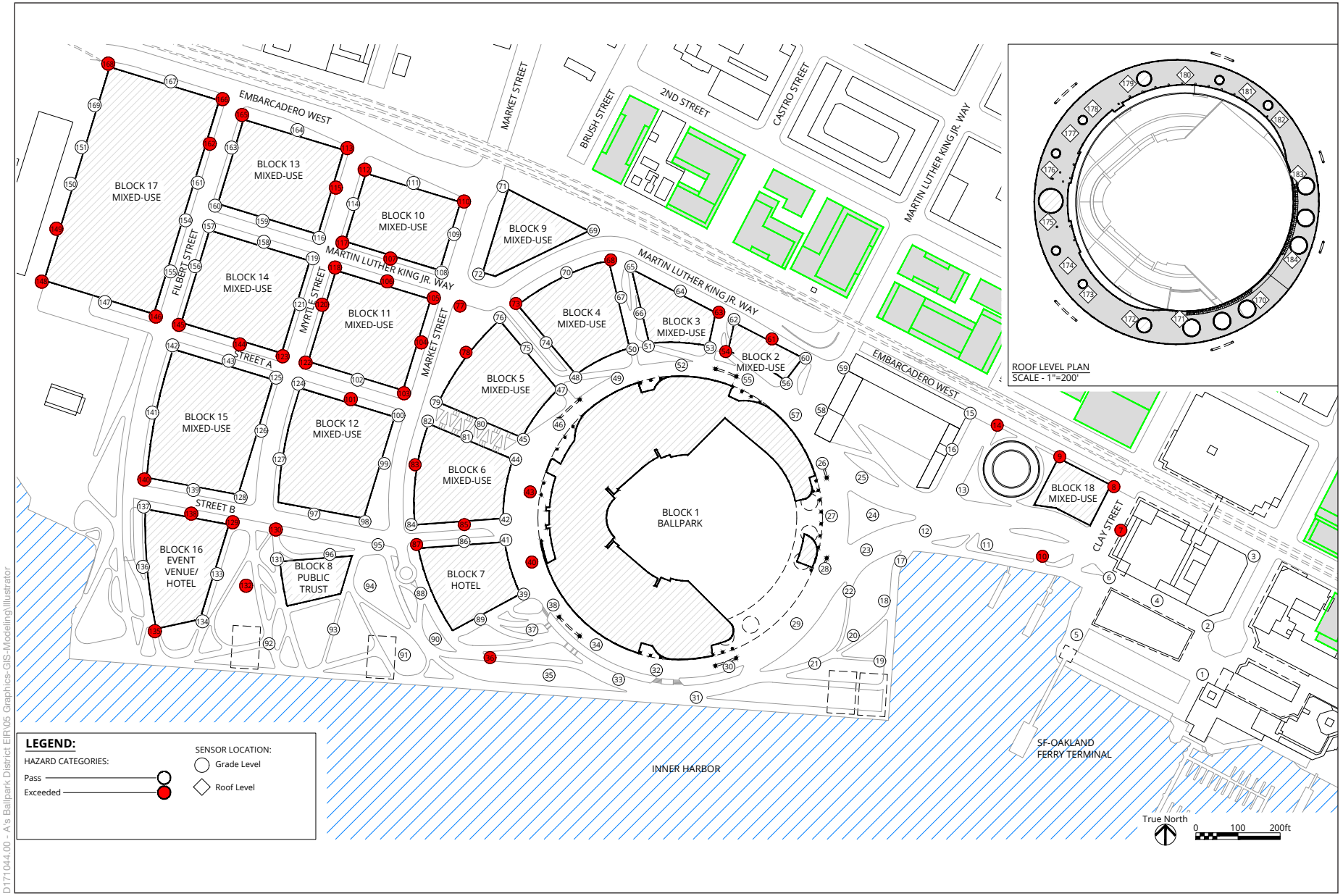
Conclusion

While the aesthetics cumulative impact would be less than significant, the proposed Project's contribution to a significant cumulative light and glare impacts would be considerable if the proposed Project were subject to an aesthetics analysis under CEQA. While the Project's shadow cumulative impact would be less than significant, the proposed Project's contribution to a significant cumulative wind impact would be considerable.

While aesthetics, light, and glare impacts are not considered environmental impacts pursuant to CEQA (see analysis on pp. 4.1-1 and 4.1-2), the proposed Project would have a cumulatively considerable contribution to a significant cumulative impact related to wind. Therefore, the overall impact of the proposed Project would be significant and unavoidable with mitigation.

Mitigation Measure AES-1: Wind Impact Analysis and Mitigation for Buildings 100 Feet or Greater in Height. (see Impact AES-5)

Significance after Mitigation: Significant and Unavoidable.



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SOURCE: RWDI, 2020

Oakland Waterfront Ballpark District Project

Figure 4.1-39
Pedestrian Wind Hazard – Cumulative

ESA

Maritime Reservation Scenario – Cumulative

Under the Maritime Reservation Scenario, up to approximately 10 acres of the proposed Project site would not be developed. The reconfigured Project site boundary would change and the Project site area would become smaller. However, all cumulative site conditions relative to aesthetics, light, and glare would remain the same as described for the proposed Project. Therefore, the cumulative impacts and analysis for the Maritime Reservation Scenario would be the same as those discussed above for the proposed Project.

To accommodate the same development program on a smaller site, the Maritime Reservation Scenario would result in a slight increase in development intensity and density on certain Project blocks. The Maritime Reservation Scenario would result in the same less-than-significant impacts as the proposed Project with regard to shadow, and cumulative shadow impacts under the Maritime Reservation Scenario would be the same as those described for the proposed Project above.

Although not separately modeled, it is expected that the cumulative developments to the northeast of the site would have a similar influence on the wind conditions under the Maritime Reservation Scenario as with the proposed Project due to the same maximum building heights as the proposed Project and because the Maritime Reservation Scenario would have the same development program as the Project in the area of the Project site closest to cumulative development. Therefore, cumulative wind impacts under the Maritime Reservation Scenario would also implement Mitigation Measure AES-1, however, like the proposed Project, there is no practical way to guarantee that all wind hazards on Project sidewalks and open spaces would be eliminated without changing the basic character of these open spaces. Therefore, even with the implementation of Mitigation Measure AES-1, the cumulative impact under the Maritime Reservation Scenario would similarly be significant and unavoidable with mitigation.

While aesthetics, light, and glare impacts are not considered environmental impacts pursuant to CEQA (see analysis on pp. 4.1-1 and 4.1-2), the proposed Project with the Maritime Reservation Scenario would have a cumulatively considerable contribution to a significant cumulative impact related to wind. Therefore, the overall impact of the proposed Project under the Maritime Reservation Scenario would continue to be significant and unavoidable with mitigation.

4.1.6 References – Aesthetics, Shadow and Wind

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