



Erik Buehmann
Planning Manager
San Francisco Bay Conservation and Development Commission
Bay Area Metro Center
375 Beale Street, Ste. 510
San Francisco, CA 94105
via email

June 6, 2022

Re: Supplemental Information in Support of Bay Plan Amendment 2-19

Dear Mr. Buehmann,

This letter responds to a question posed via email following the June 2, 2022 BCDC Commission meeting regarding BPA 2-19. Commissioner Wasserman asked about the correlation between contamination at Howard Terminal and sea level rise. As noted in the Project's Final EIR (FEIR), Response to Comment O-55-14, "the anticipated effects of sea level rise and the potential to mobilize contaminants at the Howard Terminal site have been investigated and the design of the proposed Project accounts for this."

The Ballpark District Project will invest millions of dollars in the Howard Terminal site for environmental remediation and sea level rise resiliency. This investment would not occur on site without the implementation of the Howard Terminal Ballpark District Project. The key features of the environmental remediation and the benefits of the sea level rise adaptive measures are listed below. See attachment A and B for additional technical detail.

Environmental Remediation

Before the Howard Terminal site was proposed as the location for the Baseball District Project, various investigations, cleanup actions and risk management measures were implemented to address soil and groundwater contamination at the site, under the oversight of the lead oversight agency, the California Department of Toxic Substances Control (DTSC). The site at that time was anticipated to remain in industrial use, so certain low levels of residual contaminants remained, subject to various restrictions and management requirements. Because the Project would change the use of the Site to include residential uses and involve substantial soil and groundwater disturbance, a new remedial action plan has been prepared for DTSC's approval to cleanup the site to stricter, residential standards. This will result in substantial removal of residual contaminants that would otherwise remain in the subsurface without the Project. The Project will therefore reduce the risk that sea level rise could result in exposure to subsurface contaminants from rising groundwater, even if it were to rise to the surface, which it will not because of the extensive site improvements and increased site elevation discussed below.



Sea Level Rise Resiliency

The project will implement a suite of measures to ensure the site is resilient until the end of century. Pursuant to AB1191, the Project is required to detail adaptation strategies that will make the site resilient against H++ sea level rise scenario, one of the most extreme sea level rise scenarios identified by the Ocean Protection Council. Clean fill will be imported to raise the site grades such that all development parcel grades on site will have a minimum pad grade of +10'. A series of adaptive measures have also been identified that will further enhance the site's protection against sea level rise. These measures include perimeter berms, sea walls, and wharf edge enhancements, among others. The measures will be detailed as required concurrent with the BCDC Major Permitting process.

As noted in response to Comment O-55-14 in the FEIR, taken together, the environmental remediation of the Howard Terminal site and the inherent design of the project "would prevent exposure of people and the environment to contaminated materials."

The Project will only improve the conditions resulting from the sea level rise on site, and its effect on underground contaminants. Sea levels are rising, regardless of the Project's implementation. However, when implemented, the project will improve environmental conditions on site through a DTSC regulated remediation program, and site grades will be raised to defend against sea level rise.

Thank you for the opportunity to address this question, and please know the project team is available at your convenience to further discuss the issue, should that be required.

Sincerely,

Noah Rosen
Sr Manager, Project Development
Oakland Athletics
Oakland Coliseum | 7000 Coliseum way, Oakland

Attachment A: ENGEO Memorandum – Environmental Commentary, Sea Level Rise

Attachment B: Response to Comment O-55-14, Howard Terminal Ballpark District FEIR



MEMORANDUM

To: Mr. Noah Rosen
Oakland Athletics

Date: June 6, 2022

From: Scott Johns, PE; Jeffrey A. Adams, PhD, PE

Project No.: 14682.000.001

Project Name: Athletics Ballpark Development – Howard Terminal Site

Subject: **ENVIRONMENTAL COMMENTARY – SEA-LEVEL RISE**

We have carefully considered the issue of how rising groundwater levels resulting from anticipated sea level rise could affect the residual levels of contaminants remaining in the subsurface beneath the Howard Terminal Site, and the remediation plans for the Site. Our conclusions are as follows:

- The groundwater beneath the Howard terminal Site is not significantly contaminated. The Human Health and Ecological Risk Assessment (HHERA) for the Site approved by the Department of Toxic Substances Control (DTSC) concluded that “none of the COPCs (constituents of potential concern) in groundwater present an unacceptable risk to human health or the environment for current use, during construction, and after the project is completed.”
- With respect to the potential impact of sea level rise on environmental conditions at the Site, groundwater is currently situated at a relatively shallow depth (approximately 6.5 to 9.5 feet below the ground surface) and is subject to several feet of daily fluctuation due to tidal activity. Sea level rise will raise the groundwater table because of the hydraulic connection of the Site to San Francisco Bay. Consideration of the potential effects on the Site and the environment has been incorporated into site investigation and remedial plan documents.
- Although the groundwater elevation would be expected to increase because of sea level rise, the overall condition and action of groundwater, including direction of groundwater flow and water level fluctuation, would not be expected to change. Additionally, because of the increases in site grade, there is no risk of groundwater rising above the ground surface, eliminating the potential for exposure at the surface to chemicals in the groundwater.
- The prevalent COPCs at the Site have a high affinity for adsorption to soil and have little solubility in water, minimizing the potential for mobilization into the groundwater as groundwater levels rise.
- As the groundwater rises, the higher elevation soil it will contact will be of the same geologic type and similar contaminant content as soil it encountered at deeper depths. Therefore, concentrations of COPCs in groundwater would not be expected to change markedly due to exposure to soil with increases in groundwater elevations.
- Environmental remediation/mitigation activities will be performed to address certain areas of environmental subsurface impact encountered during site development. Therefore, if anything, the site conditions are expected to improve.
- Fill materials imported to the Site will be tested in accordance with DTSC protocols to ensure that they do not contain any contaminants in excess of DTSC’s stringent import fill environmental screening levels.
- Past studies have determined that groundwater conditions beneath the Site have not impacted San Francisco Bay, and sea level rise would not be expected to affect this condition.

Further, the Department of Toxic Substances Control has been providing lead regulatory agency oversight for decades at the Site and will continue to provide oversight in the future.

O-55

COMMENT

RESPONSE

O-55-14

As discussed above, sea level rise poses an inherent risk to toxic hotspots such as the proposed Project site. All around the country we are already seeing the catastrophic consequences of these risks. In 2017, Hurricane Harvey flooded numerous heavy industrial facilities and wastewater treatment plants in the Houston, Texas, region. Local, state, and federal authorities had not planned for flooding on that scale, and the deluge spread huge volumes of toxic industrial contamination in residential neighborhoods, commercial properties, and neighboring wetlands and waterways.

O-55-15

In the Bay Area, increased El Niño storm intensity, coupled with sea level rise and the threat of earthquake-borne tsunamis, will almost certainly result in widespread flooding and the release of toxic contaminants from otherwise safe sites. Remediation of contaminated sites such as the proposed Project site must account for the long-term risks of flooding from sea level rise or storm surges. This threat must be managed comprehensively both from the perspective of the Bay as a whole and on a site-by-site basis. If even one link in the chain is broken, the whole Bay will suffer.

O-55-16

In many cases, sites that have been deemed safe under current conditions—where surface water or groundwater cannot reach contaminants and transport them to the Bay or nearby neighborhoods—will not be safe in the future. Yet today's laws, regulations, and planning documents, including the DEIR, do not adequately take this risk into account. In most instances, contaminants at these sites have already leaked out of underground storage tanks or were spilled as part of routine industrial processes. Such risks are out of sight and difficult to identify in the absence of rigorous analyses and expert assessments. Regulators, including the Regional Water Quality Control Board, Department of Toxic Substances Control, and county agencies tasked with tracking and assessing such issues have few resources to conduct thorough analyses of complex toxic sites and force adequate cleanup.

O-55-17

One example of a nearby site where remediation required under current regulatory oversight did not adequately take into account sea level rise is the Brooklyn Basin project. Brooklyn Basin is located on a former industrial site south of Jack London Square in Oakland. This site was known to host a number of contaminants including hydrocarbons, PCBs, heavy metals, and other harmful volatile organic compounds. Remediation prior to construction did not adequately take into account the possibility that the site would be inundated, in which case the underlying contaminated soil and groundwater will pose a significant threat to residents and wildlife. This project was conceived nearly 20 years ago and required a \$1.5 billion investment to complete. Other sites, such as Howard Terminal, will require more foresight and more investment to do what is needed upfront, instead of passing the bill down to future generations.

Another cautionary tale involves the redevelopment of the Hunters Point Naval Shipyard, one of the region's most notorious attempts to clean up heavily contaminated lands. The San Francisco shipyard closed in 1994 after decades of operation. Among other military operations, the site hosted the Naval Radiological Defense Laboratory, which conducted atomic research and decontamination, resulting in radiological contamination of the site. It was designated a Superfund site in 1989. The site is also widely contaminated by PCBs, heavy metals, and hydrocarbon-related pollutants. In the 2000s, the Navy hoped to pass on the responsibility for remediating the site to Lennar, a private development company, for a 700-acre redevelopment project. In 2011, a court ruling required the Navy to first conduct an environmental cleanup prior to transfer of the site to private ownership. Residential redevelopment is now occurring on lands deemed safe. However,

O-55-14

As discussed in Draft EIR Section 4.9, *Hydrology and Water Quality*, under *Sea Level Rise*, various recent studies have been conducted to estimate the amount of sea level rise under various climate scenarios and land use considerations. Consequently, the Port of Oakland prepared a sea level rise assessment to prepare Port property and assets for impacts of sea level rise. In addition, the *Tidal Datums and Sea Level Rise Design Basis Memorandum*⁴ and *Coastal Flooding, Proposed Grading Strategy, Sea Level Rise Adaptation, and Public Access on Wharf Oakland Athletics Howard Terminal Project*⁵ prepared for the Project include sea level rise adaptation strategies proposed for the medium-high risk aversion and extreme risk aversion scenarios. San Francisco Bay is expected to experience about 1.1 feet of sea level rise under the low risk aversion projection, or up to 1.9 feet of rise under the medium-high risk aversion projection. By 2070, this increases to 1.5 to 1.9 feet of sea level rise under the low risk aversion projection, and to 3.1 to 3.5 feet under the medium-high risk aversion projection. The projections for 2100 sea level rise are 2.4 to 3.4 feet under the low risk aversion projection, and 5.7 to 6.9 feet under the medium-high risk aversion projection.

As discussed in Chapter 3.0, *Project Description*, Section 3.11.1, *Sea Level Rise*, fill would be added to most of the Project site such that the floor elevations of residential buildings would be at or above 10 feet City of Oakland datum (COD). The majority of the ballpark structure would be at 5–10 feet COD or higher. Consequently, the proposed raising of elevations of the Project site would be above estimated future base flood elevation of San Francisco Bay for up to 6 feet of sea level rise. In addition, the projected sea level rise would not be able to raise groundwater levels beneath the Project site to above ground surface levels. To further ensure that sea level rise would not adversely affect the Project site, a cutoff wall and groundwater drainage system would be installed beneath the ballpark as described in Draft EIR Section 3.12.2, *Stormwater*, under *Cutoff Wall*, and in Section 4.9.4, *Impacts of the Project*. This system would collect groundwater from behind the cutoff wall and pump that water to the bay. For other areas not raised to 10 feet COD or higher, a sea level rise final adaptive management and contingency plan would be developed to describe monitoring, triggers, and implementation of measures to address future sea level rise impacts.

As discussed in Draft EIR Section 4.8, *Hazards and Hazardous Materials*, under *Current Nature and Extent of Onsite Contamination*, contaminated soil and groundwater is currently encapsulated beneath the existing hardscape and behind the quay wall and wooden bulkhead wall to prevent exposure to people and the environment. The projected sea level rise would be expected to also raise groundwater levels beneath the Project site to higher elevations. This may also mobilize some of the encapsulated contamination. However, as discussed above, the elevation of the Project site would be raised so that groundwater would not be

7

⁴ Moffat & Nichol, 2019. Tidal Datums and Sea Level Rise Design Basis. Prepared for the Oakland Athletics. December 18, 2019.

⁵ Moffat & Nichol, 2021. Coastal Flooding, Proposed Grading Strategy, Sea Level Rise Adaptation, and Public Access on Wharf, Oakland Athletics Howard Terminal Project, July 9, 2021.

O-55

COMMENT

RESPONSE

able to reach the ground surface. The previously noted cutoff wall and groundwater drainage system under the ballpark would further ensure that groundwater would not be able to reach the ground surface. The groundwater collected in the drainage system would be treated prior to release to San Francisco Bay. Consequently, the raising of elevations across the Project site and the installation of the cutoff wall and drainage system would prevent exposure of people and the environment to contaminated materials.

- O-55-15 See Response to Comment O-55-14, which explains that the anticipated effects of sea level rise were taken into account in the design of the proposed Project.
- O-55-16 This comment refers to a separate hazardous materials site that is not located at or adjacent to Howard Terminal. The investigation and remediation activities at the separate site were conducted by others in response to conditions unique to that site, and are therefore not relevant to this Project. The comment is included herein for the record. Note that as discussed previously in Response to Comment O-55-14, the anticipated effects of sea level rise and the potential to mobilize contaminants at the Howard Terminal site have been investigated and the design of the proposed project accounts for this.
- O-55-17 This comment refers to a separate hazardous materials site that is not located at or adjacent to Howard Terminal. The investigation and remediation activities at the separate site were conducted by others in response to conditions unique to that site, and are therefore not relevant to this Project. The comment is included herein for the record. Note that as discussed previously in Response to Comment O-55-14, the anticipated effects of sea level rise and the potential to mobilize contaminants at the Howard Terminal site have been investigated and the design of the proposed project accounts for this.

O-55

	COMMENT	RESPONSE
O-55-17	<p>redevelopment of a large portion of the site is still mired in controversy, including falsification of data related to radiation-contaminated soils. Given that the site lies just above current sea level, serious concerns remain as waters rise to potentially leach contamination to the soil surface and into the Bay.</p> <p>Hunters Point has acquired the nightmarish aspect of Groundhog Day because areas we thought were safe keep making headlines as a danger to residential and commercial use. At Hunters Point, housing was built in toxic, undesirable areas. Compounding that issue, it has now become clear that sea level rise will mobilize contaminants from non-remediated areas to threaten nearby communities and the entire Bay with the dangerous impacts of leaching contamination. It is critical that the DEIR take these sorts of impacts into account and lay out a comprehensive plan for proper mitigation and remediation that includes guarantees that future generations will not be left to pay the bills.</p> <p>b. Remediation of the hazardous waste present on the site requires a detailed plan presented to the public as part of the DEIR</p>	
O-55-18	<p>The Project site presents a gordian knot of pollution compounded by low-lying unstable soils and sea level rise. Hazards and hazardous materials are discussed in the DEIR at section 4.8, which states that the site has a “long history of industrial use that has resulted in the contamination of fill, soil, and groundwater.” DEIR at 4.8-1. The rogues’ gallery of chemicals of concern (COCs) present on the site include: petroleum hydrocarbons as gasoline, diesel, and motor oil, including benzene and naphthalene; cyanide; heavy metals such as arsenic, cobalt, and lead; organochlorine pesticides such as dieldrin; polychlorinated biphenyls (PCBs) including Aroclor 1254 and 1260; semi-volatile organic compounds (SVOCs), including polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs).⁷ DEIR at 4.8-9 – 4.8-15. Screening levels for these contaminants exceed residential and commercial benchmarks. <i>See, e.g.</i>, DEIR Figures 4.8-2, 4.8-3, and 4.8-4 (onsite areas with screening level (residential, commercial, etc.) exceedances for soil gas, soil, and groundwater); DEIR at 4.8-11 (“most of the Project site has soil gas with COCs at concentrations that exceed commercial screening levels, which would also exceed the lower residential screening levels;” “much of the Project site has soil with COCs at concentrations that exceed commercial screening levels, which would also exceed the lower residential screening levels. Additional areas of the Project site have soil with COC concentrations that exceed commercial screening levels.”).</p> <p>Groundwater, in particular, “is in contact with waters of the Estuary, which could expose aquatic receptors to chemicals in groundwater.” DEIR at 4.8-10 – 4.8-11. This is alarming because “certain onsite areas have free product floating in groundwater.” 4.8-11. Historical depth to groundwater at the site is a mere 5 to 12 feet below the surface, and is already subject to tidal fluctuation of several feet daily. DEIR at 4.8-15. Local site hydrology (including rate of groundwater flow to the estuary) and contamination of groundwater are likely to change under sea level rise scenarios,⁸ increased storm intensity, as a result of seismic activity, and/or during site</p> <p>⁷ The DEIR fails to consider the presence petroleum metabolites, also known as hydrocarbon oxidation products (HOPs), in groundwater.</p> <p>⁸ <i>See, e.g.</i>, Plane, B.; Hill, K.; May, C. A Rapid Assessment Method to Identify Potential Groundwater Flooding Hotspots as Sea Levels Rise in Coastal Cities. <i>Water</i> 2019, 11, 2228. https://doi.org/10.3390/w11112228 (attached as Exhibit 5, also available at https://www.mdpi.com/2073-4441/11/11/2228/html) (“Our study suggested that there is</p>	<p>O-55-18 This comment repeats information provided in Section 4.8, <i>Hazards and Hazardous Materials</i>, regarding the chemicals present in the fill and soil currently encapsulated under the hardscape cap at concentrations above regulatory screening levels, and then expresses concern regarding several topics, as addressed below.</p> <p>Unstable Soils</p> <p>The commenter makes a general statement about “unstable soils” but provides no evidence in support. As described in Draft EIR Section 3.2.4, <i>Existing Wharf Conditions, Utilities, and Site Conditions</i>, fill and soil at the site are currently under hardscape that covers the entire site. The fill and soil are separated from the estuary by a concrete quay wall protected by riprap. As described in Draft EIR Section 3.13, <i>Construction</i>, the proposed Project would add fill across the site to raise the floor elevations of structures above the anticipated amount of sea level rise. This fill would be imported clean fill that would be properly compacted. The quay wall would be raised to meet the new ground surface elevation. Therefore, there would be no unstable soils at the site.</p> <p>Contaminated Groundwater and Aquatic Receptors</p> <p>As explained in Draft EIR Section 4.8, <i>Hazards and Hazardous Materials</i>, Section 4.8.1, <i>Environmental Setting, Current Nature and Extent of Onsite Contamination</i>, groundwater samples collected from wells located on the estuary side of the quay wall verify that contamination is not detected on the estuary side of the quay wall. Therefore, groundwater beneath the site does not pose a risk to aquatic receptors. As explained above in the response to the comment on unstable soils, fill would be added across the site to raise the site above the anticipated amount of sea level rise, and the quay wall would be raised to meet the new raised site elevation. Therefore, the raised quay wall would continue to prevent contaminated groundwater from reaching the estuary and there would be no increased risk to aquatic receptors.</p> <p>Mobilization of Contaminants by Sea Level Rise</p> <p>As discussed previously in Response to Comment O-55-14, the anticipated effects of sea level rise and the potential to mobilize contaminants at the Howard Terminal site have been investigated and the design of the proposed Project accounts for this.</p>