

From: [Ray Hiemstra](#)
To: supplementalcomm@surfcity-hb.org
Cc: [Ramos, Ricky](#)
Subject: Orange County Coastkeeper Comments on Agenda item 24-571
Date: Monday, September 16, 2024 1:24:18 PM
Attachments: [OCCK MTF Comment Letter to HBCC.pdf](#)

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Hello,

Attached is a comment letter from Orange County Coastkeeper on the September 17th 2024 City Council Agenda Item 24-571.

Thanks,

Ray Hiemstra

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Orange County Coastkeeper

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**SUPPLEMENTAL
COMMUNICATION**

Meeting Date: 9/17/2024

Agenda Item No. 24 (24-571)



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September 16, 2024

Mayor Van Der Mark and Council members
City of Huntington Beach
2000 Main St.
Huntington Beach CA 92648

RE: Do not adopt Resolution Nos. 2024-46 and 2024-47 regarding modifications to Local Coastal Program Amendment No. 17-001 approved by the California Coastal Commission and amend the Local Coastal Program and General Plan Land Use Element

Dear Mayor Van Der Mark and Members of the City Council,

Orange County Coastkeeper is an environmental organization with a long relationship with Huntington Beach. Our Executive Director and members of our staff live in town and we have worked cooperatively with the city on many projects over the last twenty five years. We urge the Council not to adopt Resolutions 2024-46 and 2024-47 that would change the zoning for the Magnolia Tank Farm (MTF) site. While we realize that the MTF proposal provides much-needed additional housing, we cannot support placing that additional housing (especially desperately needed affordable housing), a hotel and other infrastructure directly next to an **un-remediated** California Superfund site, surrounded by other contaminated sites¹, in an area well-known to already be subject to sea level rise (SLR), flooding, groundwater shoaling, earthquake faults, etc. There are alternative sites for housing within the city that are closer to where people work and will improve neighborhoods while generating additional funding.

The Un-Remediated ASCON CA Superfund Site

From our perspective, it seems almost impossible, in this day and age, that anyone would consider building homes literally **next to an un-remediated Superfund site**. And by 'next to', we mean currently separated by a chain link fence. Anyone who googles [preferable distance for a neighborhood from a Superfund site](#) quickly sees that it is generally measured in miles, not feet.

ASCON is a former landfill located directly to the north of the MTF site that received industrial, construction (asphalt, concrete) and oil field waste including drilling muds, wastewater brines and other drilling wastes in the form of liquid and semi-liquid wastes deposited on-site into open lagoons and pits from approximately 1938 until 1984. Staff reports that from 1957 to

¹ Integral Draft Report, Review of Magnolia Tank Farm Development – Sea Level Rise Hazard Analysis and Ongoing Contamination and Remediation Work, July 5th, 2024, pages 4-6.

1971, chromic acid, nitric acid, sulfuric acid, aluminum slag, oil tank bottoms, oil sump wastes, fuel oils, styrene (a form of plastic) and other wastes were also dumped into the landfill. In 2002, the DTSC signed an [Imminent and Substantial Endangerment Determination and Remedial Action Order](#) and in 2015 approved a Remedial Action Plan (RAP) for the site. The RAP included some excavation, particularly at Pit F, but at this stage appears to rely heavily on installing a cap over the contamination that will remain in situ in perpetuity to be covered by a vegetated layer.

In January of 2019, the RAP was implemented only to be shut down 6 months later after a [Notice of Violation](#) was issued by the South Coast Air Quality Management District due to the release of air contaminants and hundreds of complaints from nearby residents of odors and respiratory issues. As of today, 5 years later, the remedial work remains suspended, though DTSC anticipates it resuming in September 2024 – just 3 months from now.

When considering the potential for the future mobilization of contaminants from the site to the groundwater and/or the MTF site, DTSC asserts and the staff relies in part on a silt/clay layer to prevent any mobilization of contaminants caused by SLR or groundwater upwelling. However, in a May 14, 2024 Memorandum to the ASCON Site File ² (Attachment C), in response to questions raised by CCC staff, DTSC describes the silt/clay layer in the following, more nuanced ways:

- “the confining or **partially confining** nature of the silt/clay layer is **believed to impede, but not completely prevent, migration of contaminants to groundwater**, limiting dissolved phase impacts in groundwater to localized areas on site “
- “The **semi-confining** silt/clay layer **impedes** infiltration and transport to groundwater (e.g. only localized impacts in groundwater on Site)”

DTSC also admits that:

- “Pit F did extend below the groundwater table. **Pit F is an exception to the near-contiguous native silt/clay soil** believed to act as an aquitard.”

When asked by CCC staff if an assessment was made for areas outside of the ASCON parcel boundary given that the risk of a hypothetical resident living on the un-remediated Site would be unacceptable, the DTSC response stated:

- Risk assessment for on-Site receptors would have been conducted for the Site...As stated in RAP section 4.1, assessment due to groundwater impacts **outside of the Site**

² Memorandum to Ascon Site File, Huntington Beach, California, (DTSC Site Code 400007), From Clayton Larkins, PG, “ TECHNICAL MEMORANDUM IN RESPONSE TO QUESTIONS SUBMITTED BY THE CALIFORNIA COASTAL COMMISSION REGARDING THE ASCON SITE, HUNTINGTON BEACH, CALIFORNIA, (DTSC SITE CODE 40007), dated, MAY 14, 2024

boundaries was not required “Because there are no off-Site groundwater impacts [so] groundwater does not pose a health risk to off-site residents.”

Further on in the document, CCC staff inquires if “the risk of the remediated Site cannot be assessed until the remedial actions are completed.” DTSC confirms that the risk of the remediated site can only be confirmed after the remedial work is completed.

- “the remedial design is based on a **conceptual** understanding of the Site conditions derived from Site characterization data. Confirmation soil samples will be needed from the excavation floor and sidewalls of excavated areas outside of the final cap to confirm that remedial objectives are achieved through design implementation.”

In addition, it must be noted that DTSC has not conducted a Sea Level Rise Vulnerability Assessment (SLRVA) to evaluate the potential for SLR and related climate induced changes to impact the ASCON site **before** remedial work is conducted at the site. Neither did it conduct a SLRVA on the remediated MTF site before clearing it for future development although it did include a restriction against using the groundwater below the MTF site for potable use. DTSC has indicated that it only intends to do a SLRVA at the ASCON site after the remedial work is completed and they are preparing the Operations, Maintenance and Monitoring Plan (OOMP).

The ASCON Remediation Will Not Be Permanent

The California Department of Toxic Substances Control admits that the proposed remediation for ASCON will need to be monitored forever. There is good reason for that. Remediation failures at toxic waste sites are common and ASCON will need additional work after the proposed remediation is done. The proposed remediation includes capping the site rather than removing the contaminants. Unfortunately there is a history of caps failing, right here in southern California. So the statements that once the initial remediation at ASCON is completed it will be safe are questionable at best.

Concerns of Failing Caps:

- Groundwater contamination
- Especially in periods of heavy rainfall
- Reduces quality of drinking water supplies
- Airborne contamination
- Toxic gases from waste sites can enter the atmosphere, impacting local
- Communities
- Soil Contamination harms ecosystems

• Human Health Risks

Failing caps can lead to the following health issues in nearby communities: cancer, respiratory diseases, birth defects, and developmental issues in children

Local Examples of Failing Caps:

Stringfellow Acid Pits in Riverside County, CA

- Despite the clay cover, a leak occurred in May 1983. Some of the leakage from Stringfellow entered Pyrite Creek, which led into the Glen Avon residential community as well as the Santa Ana River
- Used as an industrial waste disposal site from 1956 to 1972
- 34 million gallons of waste were dumped into these pits (ie. acids, heavy metals, pesticides, etc)
- In the 1980s, a remediation cap was installed
- In 1993, there was a period of heavy rain that led to the release of contaminated water into the local groundwater
- Public health concerns about failing remediation cap
- Carcinogens→ Cancer: leukemia, kidney cancer, etc
- Respiratory illnesses
- Neurological disorders
- Birth defects
- Autoimmune diseases
- 1988 UC Santa Cruz study on the relationship between the Stringfellow toxic waste site and congenital anomalies
- Death rates for congenital anomalies were higher in Riverside County
- Despite the clay cover, a leak occurred in May 1983. Some of the leakage from Stringfellow entered Pyrite Creek, which led into the Glen Avon residential community as well as the Santa Ana River

McColl Superfund Site in Fullerton, CA

- Used to dispose of refinery waste such as sulfuric acid sludge and hydrocarbons from aviation in the 1940s
- In 1962, most of the site was covered in soil, part of it was left as an open space, and the rest was turned into a private golf course
- Became a Superfund site in 1982
- Installation of a remediation cap in the 1990s, but methane emissions continued
- Failed cap led to air and groundwater contamination
- Skin and throat irritation were reported among those exposed
- Neuropsychological, gastrointestinal, and respiratory effects were found in the local community
- Other observed symptoms: headache, fatigue, nervousness, sinus congestion, and irritated eyes

Vulnerability of Children

- Children face higher rates of cancer due to toxic waste sites because contaminants

include genotoxic carcinogens that are harmful to children

- Children living near toxic waste sites have a 10 times higher risk for cancer as compared to adults
- Asthma and lung function issues from windblown carcinogens, PM, and VOCs

SEA LEVEL RISE AND CLIMATE CHANGE

Sea Level Rise

As Patrick Barnard, the noted USGS scientist who is widely credited with raising awareness of the significant climate hazards affecting the California Coast stated in a 2022 [interview with the Los Angeles Times](#):

*“There’s definitely a lot of low-lying communities that have seasonal or annual high tide flooding today,” Barnard said. Venice, Seal Beach, Newport and **parts of Huntington Beach** are all examples. “They’re already sort of on that knife-edge, and another foot of sea level rise is going to increase the frequency of flooding of those communities.” (emphasis ours)*

We believe that knowingly placing new infrastructure in harm’s way is irresponsible and counter to our need to foster climate adaptation efforts that will provide multiple benefits. Restoring the MTF site to the wetland it was in the past will reduce sea level rise impacts while providing desperately needed wetlands habitat that supports our fisheries and endangered species.

As Coastal Commission staff acknowledged in their Staff Report:

“...the fact remains that the proposed land use designation changes would allow for more intense development of the site (up to 250 new private residences, a new hotel, and visitor serving areas), resulting in development that is itself far less adaptable to SLR and other coastal hazards and which would rely on access, transportation, and other infrastructure beyond the MTF site that will be vulnerable to climate change impacts in the future. Thus, although the studies provided to the Commission predict that expected hazards risks can largely be mitigated, the proposed LCPA does not ensure that risk in this high flood hazard area is minimized nor that the proposed new development will continue to be served with adequate public services as flood and SLR risk worsens over time. While the existing infrastructure will provide considerable flood reduction benefits, making flooding in the Southeast Huntington Beach area unlikely over the life of development at the MTF site, the potential for damage and loss of life in the event that the infrastructure fails is immense.”³

³ [CCC Staff Report](#), Item W11a, Staff Recommendation on City of Huntington Beach Major LCP Amendment Request No. LCP-5-HNB-24-0003-1 (Magnolia Tank Farm), page 29.

The Magnolia Tank Farm project site faces present day flood risk and the surrounding area, including access roads and utilities, will face increasing flood risk caused by rising seas and groundwater. The project site experiences frequent groundwater daylighting during high tides or rain events, along with its access roads at Magnolia Street and the Pacific Coast Highway. These effects will get worse over time as seas rise and storms intensify.

The “Island Effect” is a major concern with project site. Due to its location within historic wetlands, significant fill is required to elevate the development in a way that reduces the risks of flooding, especially as seas rise. In the past, the Commission has denied proposals to construct large projects on elevated building pads within flood zones.

For example, the Poseidon Huntington Beach desalination plant was found inconsistent with the Coastal Act in part due to the uncertainty regarding surrounding infrastructure such as roads, driveways, utilities or septic systems.⁴ The Commission also denied the proposed wastewater treatment plant in Morro Bay for similar reasons related to the Island Effect.⁵

The project will increase daylight flood levels for the surrounding area.⁶ The Coastal Commission staff report dismisses the risk of daylighting, noting that it has not caused structural damage yet. The staff report assumes that the additional 0.1-0.5 feet of flooding that the project will add to the surrounding area will not be a problem – but this assumption is unproven.

The 2024 Southeast Huntington Beach Climate Change Technical Study by Q3 Consulting (2024 Study) describes a tipping point for the area’s flood control system, according to the staff report:

“Based on the current flood control channels, that tipping point would occur for the area east of Talbert channel during a 100-year storm surge event with around 4.2 feet of SLR and for the area around the MTF site during a 100-year storm surge event with around 4.4 feet of SLR. Importantly, these SLR amounts are projected to occur after the end of the current projected service life of the floodwalls which is 50 years (approximately 2070). In other words, the walls will need to be replaced before SLR is expected to overwhelm the existing capacity.”

To assume the levee will be replaced or modified before then, is a great leap. The Orange County Flood Control District has a \$100 million backlog of projects, and many environmental justice communities in Orange County do not currently have 100-year protection. The Commission should require a commitment from OC Flood prior to issuance of a permit.

⁴ <https://documents.coastal.ca.gov/reports/2022/5/Th9a10a/Th9a10a-5-2022-staffreport.pdf>

⁵ <https://documents.coastal.ca.gov/reports/2013/1/Th23b-1-2013.pdf>

⁶ Anchor QEA Report, Magnolia Tank Farm Redevelopment Project, Table 2-6, page 24, footnote 2.

The cost of adapting this area for future hazards is enormous. In 2018, a report by Tetra Tech by the City identified \$76 million in flood control improvements to mitigation existing flooding issues. The 2024 Study identifies an additional \$170 million in needed pump station improvements to adapt the area to sea level rise. This does not include the cost to upgrade the existing levee system by the end of its lifespan in 2070. To put this in perspective, the city of Huntington Beach as budgeted only \$500,000 for pump station improvements each year in 2025/2026. This is only 13% of what is necessary to mitigation existing conditions.

To address the enormous cost of continuing to build in this hazardous location, creation of a Tax Assessment District is suggested ensure the development contributes its fair share of the cost of adaptation. However, it is difficult to conceive how the City and County will come up with the \$240+ million in funds to implement the improvements necessary to protect the site and adjacent neighborhoods from future conditions, even with the MTF funding mechanism. The Assessment District would only include 200 homes, if the affordable units are exempted – which is a very small quantity to make a dent in the adaptation price tag. As a small step toward bridging the gap, the developer should contribute to the Assessment District and related flood control improvements, not just the homeowners.

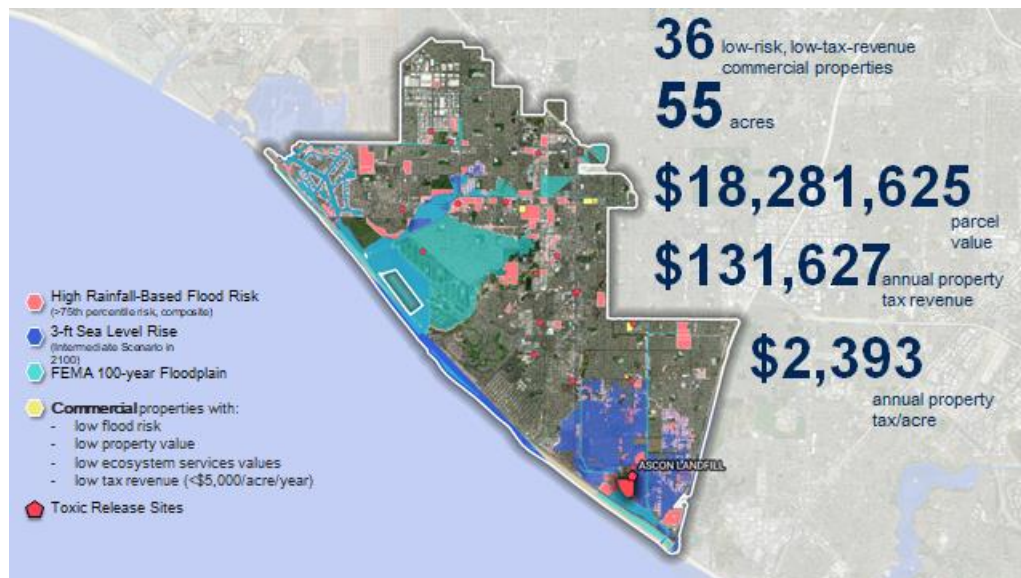
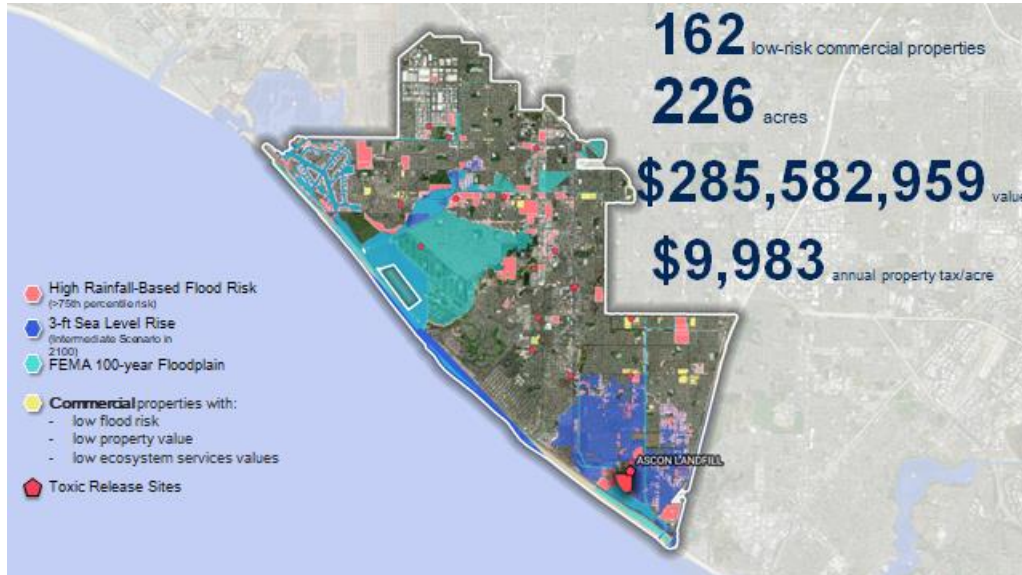
In a July 2024 Report, Integral Consulting highlights numerous additional coastal hazards related concerns, including:

- The proposed development will cause increases flooding in surrounding areas, as shown in Figure 1, provided by Anchor QEA.
- Groundwater shoaling at the site will increase demand on the drainage system including sheet pile walls, pump stations, building infrastructure and channel outlet.
- Closed beach barrier flooding could result in 5-feet of additional water elevation in the Talbert flood control channel, a channel that has maintenance restrictions due to endangered species protections.
- Stormwater drainage compounded with a closed barrier beach could result in present day flooding, or with higher levels of sea level rise.

Further, the benefits this site could provide as flood protection for the existing surrounding communities and infrastructure was not adequately assessed. The Q3 study of the Magnolia Tank Farm site as a benefit to flood control in the area is limited to its use as a detention basin that would be dry most of the time. This overlooks the multiple benefits of utilizing the site as a wetland like the adjacent Magnolia and Brookhurst Marshes. Therefore, the cost/benefit analysis is inaccurate. The MTF site needs to be analyzed as an addition to the existing Huntington Beach Wetlands Complex to determine its true value as a combination of wetland habitat and flood control.

Alternatives to the Magnolia Tank Farm Site

There are alternatives to the Magnolia Tank Farm site that would provide housing, improve neighborhoods, and increase tax revenue, while avoiding the flood, sea level rise, earthquake and toxic exposure risks of the MTF site. An analysis by Brisa Consulting showed that there are ample low risk commercial properties in Huntington Beach, many of them generating low property tax revenue. Just converting the low tax generating commercial properties to residential properties could yield an additional \$3.7 million in annual tax revenue.



Boosting Tax Revenue, Safely



Median Home Value: **\$1.3M**

<https://www.zillow.com/home-values/25218/huntington-beach-ca/>



Average Property Tax Rate: **0.79%**

<https://smartasset.com/taxes/orange-county-california-property-tax-calculator>

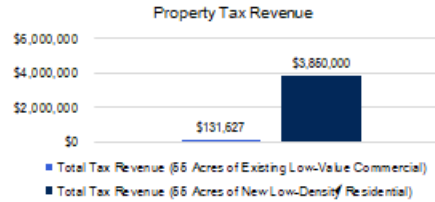


Annual Tax Revenue/Residence: **\$10,270**



Density: **7 to 15 residences per acre**

Low-to medium-density residential development in accordance with <https://ecode360.com/43902963#--tax#Maximum%20Density%20is%2015%20Units%20per%20acre>.



Transforming low-value commercial properties into residential developments presents a powerful opportunity for increased tax revenue. With a median home value of \$1.3M, even low-density residential redevelopment can generate **\$70,000 per acre in annual tax revenue**—a significant jump from the **\$2,393 per acre** currently collected from low-value commercial properties. This shift could yield a total of **\$3.85 million annually**, offering both economic and community benefits by optimizing land use in safer, more sustainable areas.

Conclusion

There is no avoiding the fact that the Magnolia Tank Farm site is one of the most risky sites to build housing in Huntington Beach. If built the residents and visitors will be subject to the risk from the ASCON Superfund Site, Flooding, Sea Level Rise and living directly on an earthquake fault. We have attached the Integral Consulting Comment letter to the Coastal Commission to provide additional information on these risks.

The project is only designed for a fifty year lifespan, that is less time than the surrounding homes have already been there. So this is a poor investment all around. However there are viable alternatives to the project that will meet the needs of the city for housing and increased revenue. We urge you to not approve the Magnolia Tank Farm project and instead focus on developing aging commercial properties into housing that will improve Huntington Beach neighborhoods.

Sincerely,

Ray Hiemstra

Associate Director of Policy and Projects

Orange County Coastkeeper



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July 5, 2024
Revised July 8, 2024

Project No. C4138

Magnolia Tank Farm - Land Use Plan Amendment
Orange County Coastkeeper
3151 Airway Ave. Suite F-110
Costa Mesa, CA 92626

Subject: **Review of Magnolia Tank Farm Development – Sea Level Rise Hazard Analysis and Ongoing Contamination and Remediation Work**

Dear Susan and Ray,

Integral Consulting conducted a review of sea level rise (SLR) and climate change studies and existing and ongoing contamination, and remediation work documented by third parties for the proposed rezoning of the Magnolia Tank Farm (MTF or site) within southeast Huntington Beach, CA. The project proposes the rezoning of the parcel to facilitate the redevelopment of the former MTF with 250 new private residences, a new hotel, and open space and park areas.

Upon reviewing available technical reports and the CCC staff report, there are still outstanding concerns about the project related to coastal hazards, SLR adaptation, and the adjacent contaminated sites. The coastal commission staff report does not fully acknowledge the existing and future climate related risks to flooding posed to the project site and those impacts to coastal resources exacerbated by this proposed change in land use. All technical reports are referenced as footnotes throughout the comment letter.

Project Concerns:

Under current conditions, the site has emergent groundwater that ponds water and floods during each rain event. Increasing climate risk (precipitation, SLR, and coastal hazards) increases the chance that this area would flood more frequently with longer duration and increases the stress on any mitigative measures on the site.

- 1) **Maladaptive:** The following change in land use at this location is maladaptive. It encourages more development in a hazardous area putting more life and property at risk over time. This site is in a low-lying area that was once an historic wetland.

- 2) **Increasing Flooding in Surrounding Areas:** If developed as proposed, the area would be hardscaped and “domed,” elevating it above the adjacent areas and transferring stormwater to surrounding areas. These nearby areas would suffer increased flood depths, as shown in Figure 1, provided by Anchor QEA¹.
- 3) **Island Effect:** Higher flood depths in the surrounding areas will limit roadway and utility access to the site, putting both first responders and residents at risk (Figure 2).
- 4) **Short-sighted Adaptation Strategies:** Increasing SLR and higher frequency of intense precipitation events will stress the site in terms of groundwater shoaling, hydraulic pressure due to coastal water elevations, and higher compound flood volumes. These stressors are projected to increase in the future, thereby putting more demand on the drainage system including maintaining the sheet pile walls, pump stations, building infrastructure and channel outlet.
- 5) **Increasing Cost to Local Agencies:** The increasing demand on the surrounding drainage system will cause additional maintenance and financial responsibilities as an undue burden to the local agencies. For example, the OCFCD maintains the vertical sheet pile walls of the Huntington Beach Flood Control Channel along with the City of Huntington Beach and the US Army Corps of Engineers. Increasing flooding due to climate change and increased flood depths would require more regular maintenance of the vertical sheet pile walls.
- 6) **Talbert Channel Flooding:** Historically, the mouth of the Talbert Channel was a bar-built estuary, meaning the sand berm fronting the estuary would open and close seasonally. If the channel mouth is closed, the estuary water levels could fill to the height of the beach berm. Elevation data² indicates an average of 13 feet NAVD88 beach berm crest elevation (12–15-foot range) between Brookhurst and Beach Blvd. Closed beach barrier flooding could cause flooding to elevations of ~12 to 15 feet NAVD88 under existing conditions. This could translate into 5 feet of additional water elevation in the flood control channel. This flooding could rise with sea level to an elevation of 16.5 to 19.5 feet with 4.5 feet of SLR³. The mouth of the Talbert Channel regularly requires sand removal and is maintained open by the

¹ Anchor QEA, 2021. *Sea Level Rise Vulnerability Assessment and Adaptation Plan*. Prepared for SLF-HB Magnolia, LLC. July 2021.

² Orange County Public Works Topographic Lidar Survey.

³ Ocean Protection Council, 2024. *Sea Level Rise policy guidance*. June 2024.

Orange County Public Works (OCPW), but when it does close, results can be catastrophic. Regulatory permits do not allow maintenance of the outlet from March 1 to September 30 unless emergency conditions are met⁴ to protect endangered species. A closure in 2022 resulted in fish die-off and poor water quality that poses hazards to coastal recreational users.

- 7) **Compound Flood Risk:** The study performed by Q3⁵ assumed that the Talbert Channel mouth was open and ocean water levels reached a maximum of 5.2 feet NAVD88. They found that compound flooding impacted the site with 6.7 feet of SLR (assuming a total ocean water level 11.9 feet). The study performed by Anchor QEA assumed that the ocean water level would reach a maximum of 6.44 feet and found that compound flooding impacted the site with 6.0 feet of SLR (assuming a total ocean water level 12.44 feet). These findings are not reflective of the worst-case scenario when the channel mouth is closed. As described above, if stormwater drainage encountered closed barrier beach water levels (12 to 15 feet⁶), then compound flooding could impact the site today.

- 8) **Shoaling Groundwater:** The site lies over the Talbert Aquifer, which is tidally influenced. Anchor QEA's study, which references LGC Valley⁷, estimates groundwater depths ranging from -0.20 to 1.67 feet above mean sea level (MSL)⁸, as shown in Figure 3. Note that these values (a negative number) imply that groundwater is already emerging at the northwest corner of the site at W-2 (Figure 3). This was corroborated with estimates made by the United States Geological Survey (USGS) (CoSMoS, Figure 4), which estimated current groundwater depth to be either emergent or very shallow. Increasing SLR will cause groundwater to increase in elevation, daylighting at the site, causing inundation.

⁴ Merkel & Associates, Inc., 2022. Talbert Marsh 2022 Inlet Closure Impact Evaluation. January 5, 2022.

⁵ Q3 Consulting, 2024. *Technical Study: Assessment of Climate Change-Induced Impacts to Flooding in Southeast Huntington Beach and Adaptation Measures for Future Conditions*. Prepared for the City of Huntington Beach. February 22, 2024.

⁶ Orange County Public Works Topographic Lidar Survey.

⁷ LGC Valley, Inc., 2018a. *Groundwater Investigation at 2185 Magnolia Street within the City of Huntington Beach, California*. Prepared for SLF-HB Magnolia, LLC. Project No. 164011-01. January 17, 2018.

⁸ The Anchor QEA and LGC report reference different vertical datums, confusing the interpretation of the impacts of groundwater changes.

- 9) **Contamination Potential:** The site is adjacent to several contaminated properties currently under regulatory oversight, including a State Superfund site, the former Ascon Landfill, which is overseen by the Department of Toxic Substances Control (DTSC). The following cases were reviewed on DTSC's EnviroStor website:
- a. Ascon Landfill (EnviroStor 30490018) – Ascon is a former landfill located adjacent to the north of the site that received industrial, construction (asphalt, concrete), and oil field waste including drilling muds, wastewater brines, and other drilling wastes in the form of liquid and semi-liquid wastes deposited onsite into open lagoons and pits from approximately 1938 to 1984.⁹ Ascon was designated as a State Superfund site and is regulated by DSTC under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which is also known as Superfund. Two remedial excavations were completed between 2003 and present. A Remedial Action Plan (RAP), prepared by Geosyntec Consultants (Geosyntec), was approved by DTSC in 2015. The RAP includes limited waste removal, onsite waste reconsolidation under an engineered cap with a vegetated cover. A landfill gas collection and treatment system and stormwater collection system are included with the cap.

Reconsolidated waste material will be placed above a clay/silt layer that extends across the central portion of the Ascon property. Geosyntec identified the clay/silt layer as confined (i.e., an aquitard) or semi-confined,¹⁰ which can be defined as a saturated, low permeability (low hydraulic conductivity) geologic material that prevents (does not allow) transmission of significant quantities of water into water bearing units below the confining layer. However, confining layers or aquitards may transmit substantial water to or from adjacent aquifers. In addition, where there are breaks in a confining layer or variations in grain size (i.e., silty clay), water can readily transmit to units below these confining layers. A well draw down test for wells screened above and below the clay/silt layer has not been performed or are not available for review. Such tests would help to evaluate the assertion that the clay/silt layer is confining. In the absence of pump tests, it is difficult to assess whether Ascon Landfill COCs would leak from

⁹ Geosyntec Consultants, 2015. Final Remedial Action Plan (RAP), Ascon Landfill Site, Huntington Beach, California. Dated June 9, 2015.

¹⁰ Geosyntec Consultants, 2007. Groundwater Remedial Investigation Report (Revision 1.0), Ascon Landfill Site, Huntington Beach, California. Dated June 14, 2007.

the containment units and either into the water bearing units below or adjacent. The degree to which the clay/silt layer is confining has not been assessed. Based upon geologic cross-sections and well logs prepared by Geosyntec, the clay/silt layer is not continuous, and pinches to zero or near zero thickness (See boring logs AW-5 through AW-7, GP-6 through GP-11, and P-9) along the southern portion of the Ascon property, which is adjacent to the site.

In the context of oil field waste contained within the Ascon Landfill, oil and gas exploration and production drilling utilize fluid products to help prevent drilling fluid loss, reduce friction while drilling, and increase extraction efficiency. The United States Environmental Protection Agency (USEPA) found that the oil and gas industry may have handled per- and polyfluoroalkyl (PFAS) products at a higher rate than other industries.¹¹ Fluorinated surfactants are commonly found in drilling fluids, including those used for stimulating oil wells during water flooding and in foam-reducing hydrocarbon liquids, such as perfluorooctanesulfonamide (one of more than 10,000 PFAS compounds). Minnesota Pollution Control Agency (MPCA) found that North American Industry Classification System (NAICS) codes for the oil and gas industry (e.g., NAICS 211130, 324, and 424710) have a higher risk for PFAS sources than other industries.¹²

In April 2024, USEPA finalized a critical rule to designate two widely used PFAS compounds, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), as hazardous substances under CERCLA.

Oil field wastes may contain significant quantities of PFAS compounds with potential to impact soil and groundwater, especially beneath land disposal sites such as Ascon. The Ascon property is topographically higher than the surrounding area and groundwater beneath this property is near MSL. Recent groundwater monitoring reports indicate that known chemicals of

¹¹ Palmerton, D. L., 2024. Navigating PFAS Compliance in the Oil and Gas Industry. The PIOGA Press. Dated February 2024.

¹² Minnesota Pollution Control Agency, 2024. PFAS Desktop screening tool and review guide. Accessed July 2, 2024. Available at: <https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.pca.state.mn.us/sites/default/files/gp3-08.pdf&ved=2ahUKEwi119jnv5GHAXWAmo4IHeuWCKAQFnoECBkQAQ&usg=AOvVaw2wqZum2CkCOnXDMvX954LL>

concern (COCs), such as volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and 1,4-dioxane, are generally not present in groundwater beneath Ascon.¹³ However, the presence of PFAS compounds in soil and groundwater has not been evaluated at either Ascon or the MTF site.

As SLR progresses, groundwater emergence could remobilize known residual impacts and unknown COCs (like PFAS) from beneath the planned landfill cap at Ascon and into the underlying aquifers. In addition, the historical groundwater flow direction from the Ascon property, prior to municipal supply well pumping, may have been to the south (towards the ocean), and towards the MTF site.

Currently, groundwater flow from the Ascon property is towards the north, away from the site, reportedly due to municipal supply well pumping. Historically, prior to municipal pumping and construction of the Huntington Beach Flood Control Channel in the 1950s, the likely groundwater flow direction would have been towards the ocean to the south. Under this historical scenario, groundwater would have flowed from the Ascon property towards the site, potentially mobilizing COCs beneath the site. Further subsurface investigation would be needed to assess whether PFAS compounds from the Ascon property have impacted soil, soil vapor, and/or groundwater beneath the MTF site.

- b. EPTC - Huntington Beach (EnviroStor CAD000631085) – In 1995, Southern California Edison (SCE) was issued a court order to close 11 facilities for violating hazardous waste laws, including for their Huntington Beach electricity generating facility at 21730 Newland Street. In response to the court order, SCE conducted investigations to close two wastewater retention basins (Wastewater Retention Basin and Boiler Chemical Cleaning Basin) that operated at the power station without permit or authorization from DTSC (Chapter 15 of Title 22, California Code of Regulations) from 1958 until about 1989.¹⁴ The EPTC facility engaged in the use of ponds or lagoons (concrete lined in 1958 and retrofitted synthetic lined in 1984), nonstationary containers, and hazardous waste treatment. In 1981, EPTC reportedly

¹³ Geosyntec Consultants, 2023. Interim Groundwater Monitoring Report – September 2023, Ascon Landfill Site, Huntington Beach, California. Dated October 25, 2023, Revised December 19, 2023.

¹⁴ Department of Health Services, *Interim Status Document*, Huntington Beach Generating Station. April 6, 1981.

handled toxic waste, extremely hazardous waste, flammable waste, water reactive wastes, volatile wastes, bulk liquid wastes, containerized liquid wastes, asbestos, alkalis, acids, pesticides, and polychlorinated biphenyls (PCBs). These wastes included K-listed hazardous (Resource Conservation and Recovery Act or RCRA) wastes (e.g., K-054), which, according to USEPA, included sludges, residues, and byproducts from activities like metal plating, wood preservation, and pesticide manufacturing. EPTC wastes also included D-listed hazardous wastes (e.g., D-001 [ignitable] and D-002 [corrosive]).

EPTC is still undergoing closure and continually reports their water quality results as part of their closure plan. In 2019, the most recent Summary of Observations issued by DTSC available on EnviroStor indicated that they are reviewing compliance information. While no violations were noted as part of DTSC inspections in 2002, 2014, 2015, 2016, and 2019, minimal water quality monitoring data are available for review on EnviroStor. EPTC has a groundwater monitoring network that includes 14 monitoring wells. Groundwater flows towards the north-northwest (away from the site). Groundwater test results include VOCs, metals, pH, total dissolved solids (TDS), 1,4-dioxane, and chloride. Exceedances have been observed in cobalt, nickel, and arsenic in groundwater. Further research would be needed to evaluate this case. The regulatory status for EPTC is Corrective Action/Post Closure. Evaluation of this regulatory case is further discussed below in subsections c and d.

- c. Huntington Beach Generating Station (HBGS) (EnviroStor 30490057) – The HBGS is under a Corrective Action Plan (CAP). However, the CAP was not available for review on EnviroStor. Additional research would be needed to evaluate this case.
- d. AES SCE - Huntington Beach Generating Station (EnviroStor 600001194) – A risk analysis and a health risk evaluation were completed for potential vapor intrusion for the wastewater basins/pipelines area. Results of these analyses were not available for review on EnviroStor. Additional research would be needed to evaluate this case.
- e. OCSD – OCSD Plant 2, which is a Publicly Owned Treatment Works (POTW) located approximately 0.7 miles to the southeast of the site along the coast, consistently found PFAS in influent, effluent, and biosolids samples analyzed during four quarterly sampling events conducted in 2021.

The presence of PFAS at this and many other POTW facilities in California suggests that PFAS compounds are prevalent in wastewater and should be evaluated at wastewater and waste storage, treatment, and disposal facilities, such as Ascon and MTF.¹⁵

10) Additional Hazards:

- a. Tsunami – The Anchor QEA study found that although the area is not within a tsunami hazard zone, according to a 2021 report,¹⁶ it would be reasonable to assume that the site could be in a tsunami hazard zone as SLR progresses. The site is currently mapped adjacent to a tsunami hazard area (Figure 5). In 1964, following an 8.2 magnitude earthquake in Alaska, an approximately 4-to-5-foot tidal surge hit the Huntington Harbor area causing substantial damage. On March 11, 2011, a 9.0 magnitude earthquake occurred near Tohoku, Japan causing a two-foot run up (above MSL) in Huntington Beach.
- b. Faults – A northwest-oriented Quaternary fault trace mapped by USGS and California Geological Survey (CGS) (2018) and an inferred fault trace mapped by Morton (2004) bisect the central portion of the site (Figure 6).¹⁷ This fault trace, which is associated with the South Branch fault, cuts through Late Holocene eolian/dune deposits that underly the site. Shallow groundwater depths in the site vicinity have prevented fault trenching, which is the most definitive method for fault characterization and for evaluating whether Holocene rupture occurred along a fault. Past desktop fault studies have concluded that “...although there is no information that directly implicates the “South Branch” as being active, there are no data that demonstrably preclude Holocene activity.” If a fault study involving trenching were undertaken, the fault traces inferred through the site may

¹⁵ CDM Smith, 2021. PFAS Sampling Results for Treatment Plan No. 2, Final. Orange County Sanitation District, Contract No. CS-2020-11178BD, December 2021.

¹⁶ State of California, 2021. Tsunami Hazard Area Map County of Orange. Produced by the California Geological Survey, the California Governor’s Office of Emergency Services, and AECOM. Dated July 8, 2021. Accessed July 14, 2021. Available at: https://www.conservation.ca.gov/cgs/Documents/SHP/Tsunami/HazardArea/Maps/Tsunami_Hazard_Area_Map_Orange_County_a11y.pdf

¹⁷ Lettis Consultants International, Inc. *Assessment of the Newport-Inglewood Fault Zone*. Prepared for Orange County Coastkeeper. May 13, 2020, Revision 1.

demonstrate active (Holocene) faulting, which would preclude the proposed development project in its current form.

- c. Liquefaction – The entire project area is located within a mapped liquefaction hazard zone, whereby earthquake-induced ground shaking causes soils to change from a solid to a liquid state (Figure 7 and 8).^{18,19} Liquefaction would likely be exacerbated onsite by an increase in groundwater levels due to SLR.
- d. Storms – Storm surge fueled by global warming increases the frequency and intensity of storms, increasing the probability of flooding in low lying areas. In 1983, El Niño spawned a record-breaking storm that inundated the low-lying areas of Huntington Beach, causing severe damage with floodwaters 3 to 5 feet deep. Project adaptation measures are unlikely to overcome long term flood potential without continual flood protection improvements. CoSMoS results indicate coastal wave storm flooding would occur at the site under the SLR projections of 5.0 to 7.0 feet under existing conditions (Figure 9).²⁰ The 100-year flood maximum water levels under future sea levels for existing condition places the site under water with 6.0 to 7.0 feet of SLR and no flooding for proposed adaptation measures. However, under such scenarios, the Ascon property and the site and would become an island.

In general, wetlands and marshes absorb and store flows, reducing flood velocities and erosion. An alternative to the site project would be to extend and elaborate local wetlands/marshes (e.g., Magnolia Marsh) with constructed wetlands/marshes to help absorb runoff from storm events, and slow flood velocities caused by storm/tidal surge or tsunami and exacerbated by SLR. This would increase coastal community resilience in the early stages of SLR, particularly for existing residential neighborhoods adjoining the site to the east.

¹⁸ Orange County Liquefaction Zones map. Dated August 19, 2015. Accessed July 3, 2024. Available at: <https://gis.data.ca.gov/datasets/cadoc::cgs-seismic-hazards-program-liquefaction-zones/explore?location=35.673513%2C-119.759465%2C7.01>

¹⁹ City of Huntington Beach, 2008. Liquefaction Potential map, City of Huntington Beach, Information Services Department. Dated October 2008. Accessed July 3, 2024. Available at: <https://www.huntingtonbeachca.gov/Documents/Departments/City%20Maps/Liquefaction.pdf>

²⁰ Lettis Consultants International, Inc. *Assessment of the Newport-Inglewood Fault Zone*. Prepared for Orange County Coastkeeper. May 13, 2020, Revision 1.

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Sincerely,

A handwritten signature in black ink, appearing to read "David Revell". The signature is written in a cursive, flowing style.

David Revell, Ph.D.
Principal Coastal Climate Risk and Resilience

Enclosure

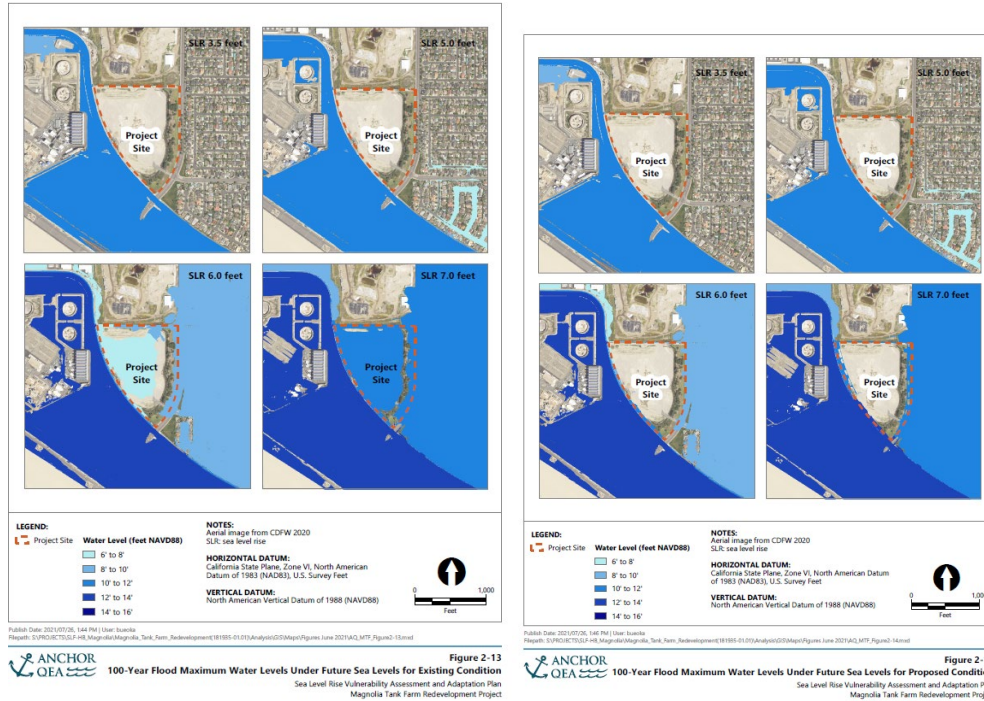
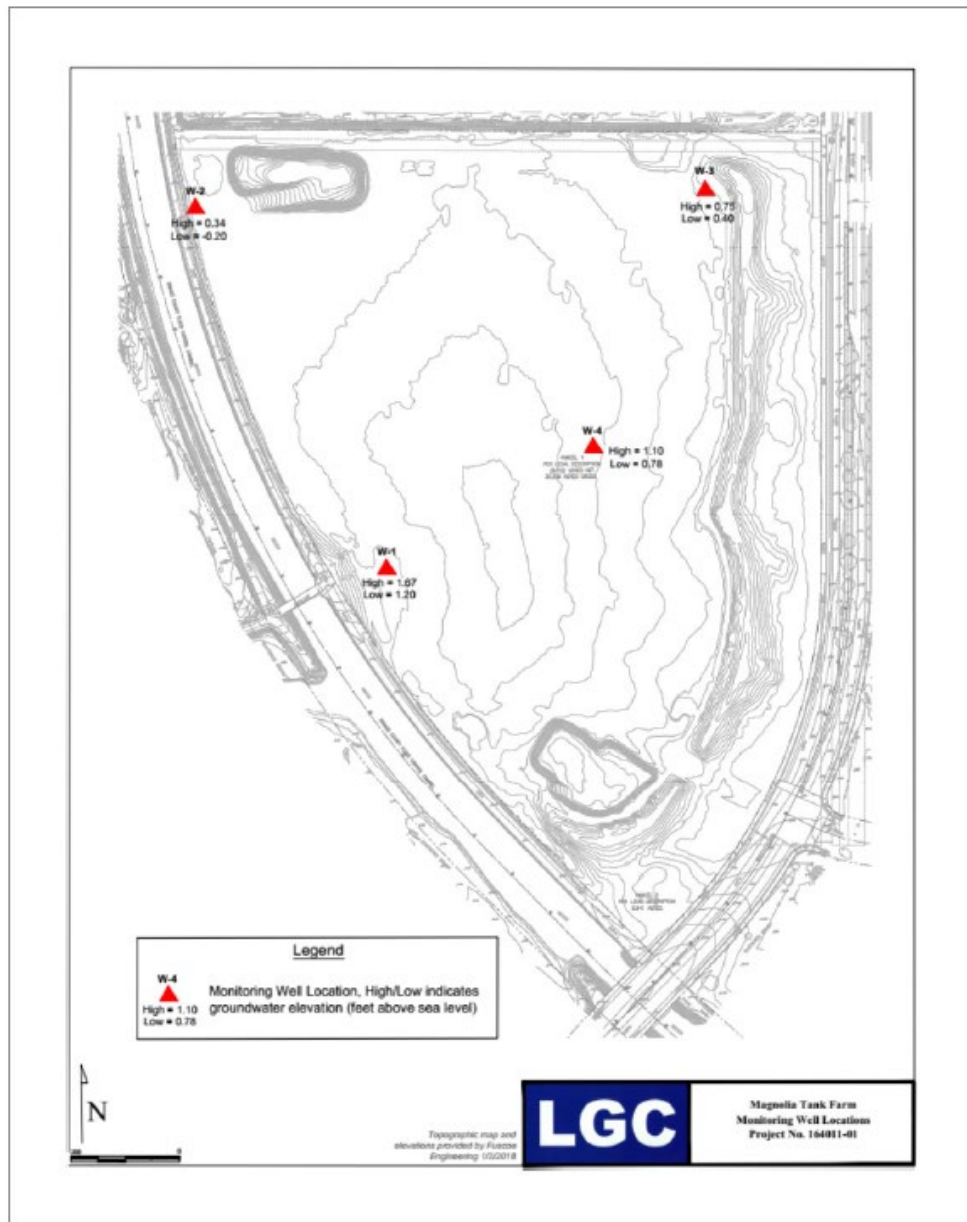


Figure 1. Flood levels from the Anchor QEA Hec-RAS 2D study. The undeveloped project is on the left panel, and the developed project is on the right panel. The study shows the island effect of the project site, with where water that typically would flow into the project site (left panel, undeveloped) would flow into the surrounding areas.



Figure 2. Closed mouth of the Talbert Channel on April 24, 2022. Source: Google Earth.



Source: LGC Valley, Inc. 2018a



Figure 2-20
Magnolia Tank Farm Groundwater Well Monitoring Locations
 Sea Level Rise Vulnerability Assessment and Adaptation Plan
 Magnolia Tank Farm Redevelopment Project

Figure 3. Groundwater well monitoring locations provided in the Anchor QEA referencing the LGC memo showing the minimum and maximum groundwater elevations in feet above sea level. Note that negative values indicate lower than sea level.

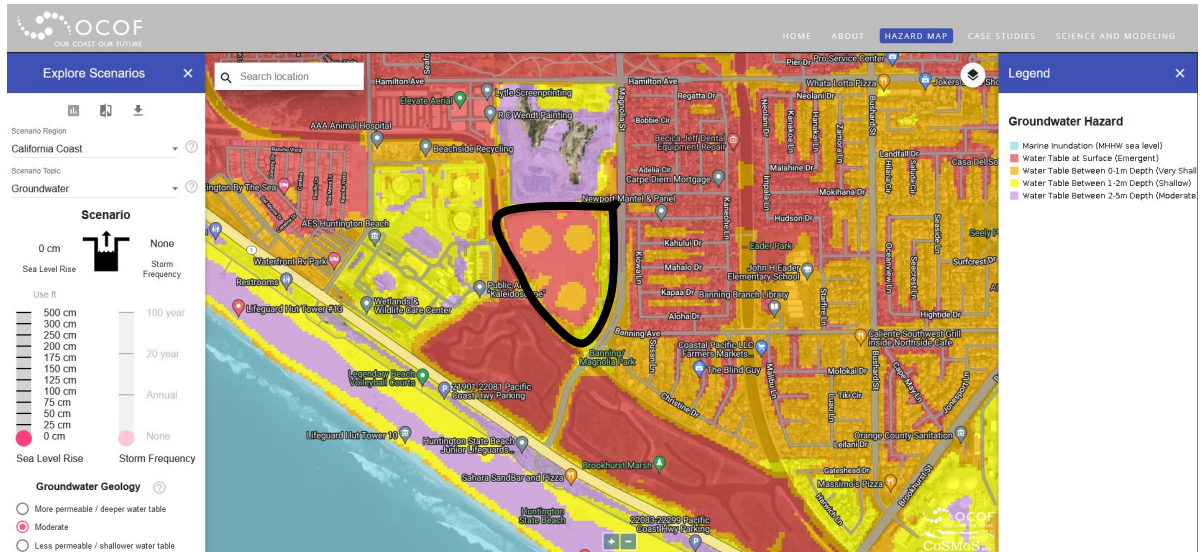


Figure 4. CoSMoS groundwater viewer showing groundwater levels as emergent at the site under moderate permeability geology. The site outlined in black.

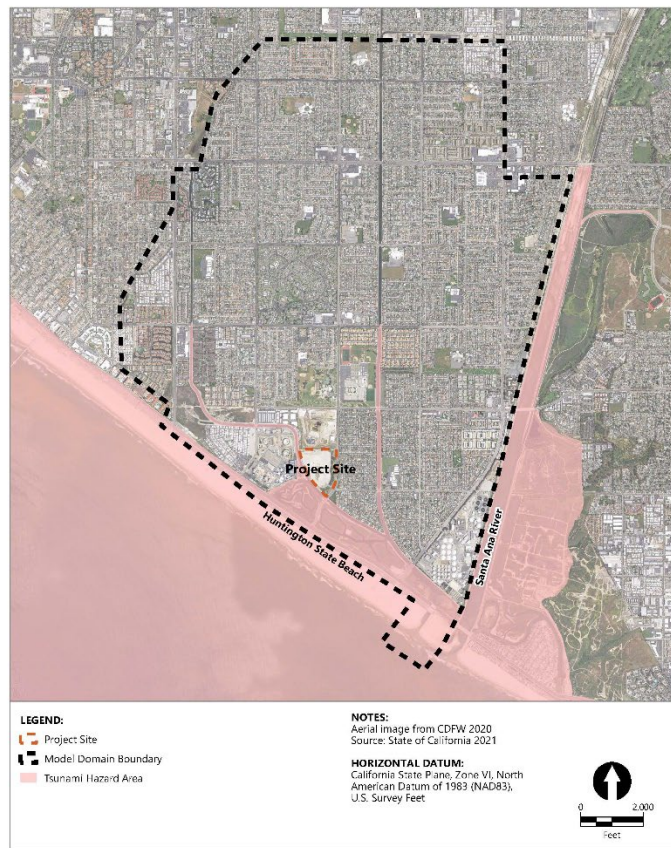


Figure 2-19
Tsunami Hazard Area for Orange County
Sea Level Rise Vulnerability Assessment and Adaptation Plan
Magnolia Tank Farm Redevelopment Project

Figure 5. Tsunami Hazard Area Map. Site outlined in orange.

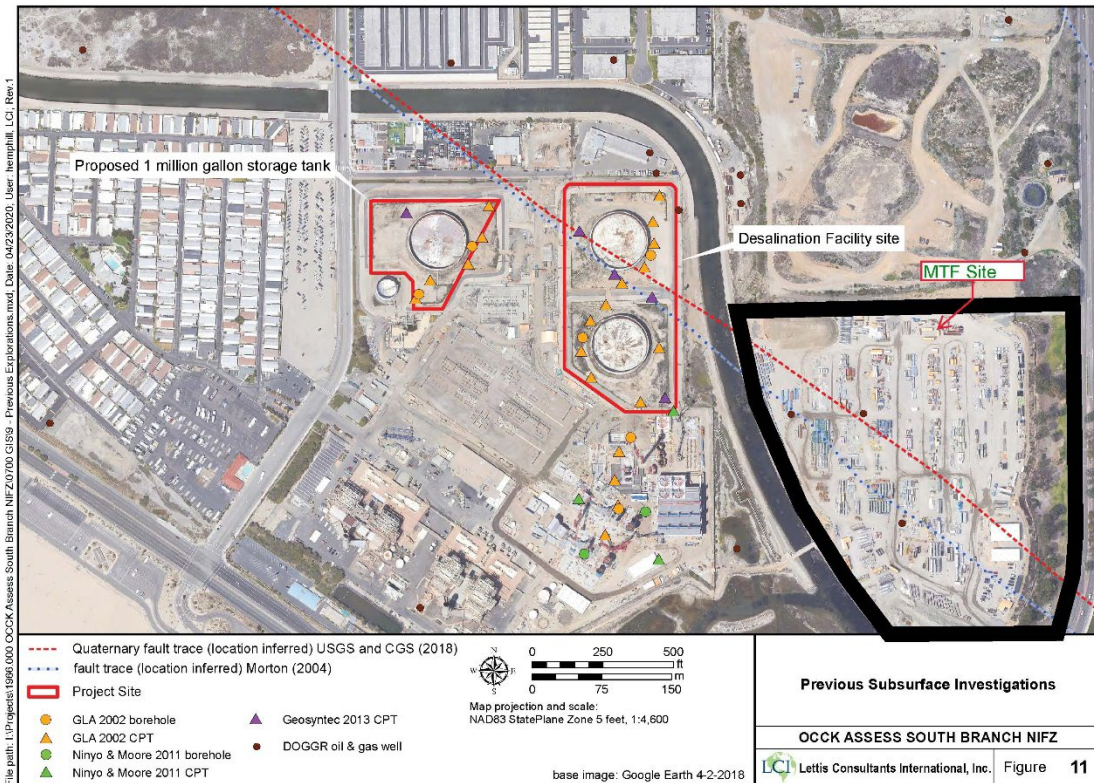


Figure 6. Quaternary fault traces (LCI, 2020). Site outlined in black.

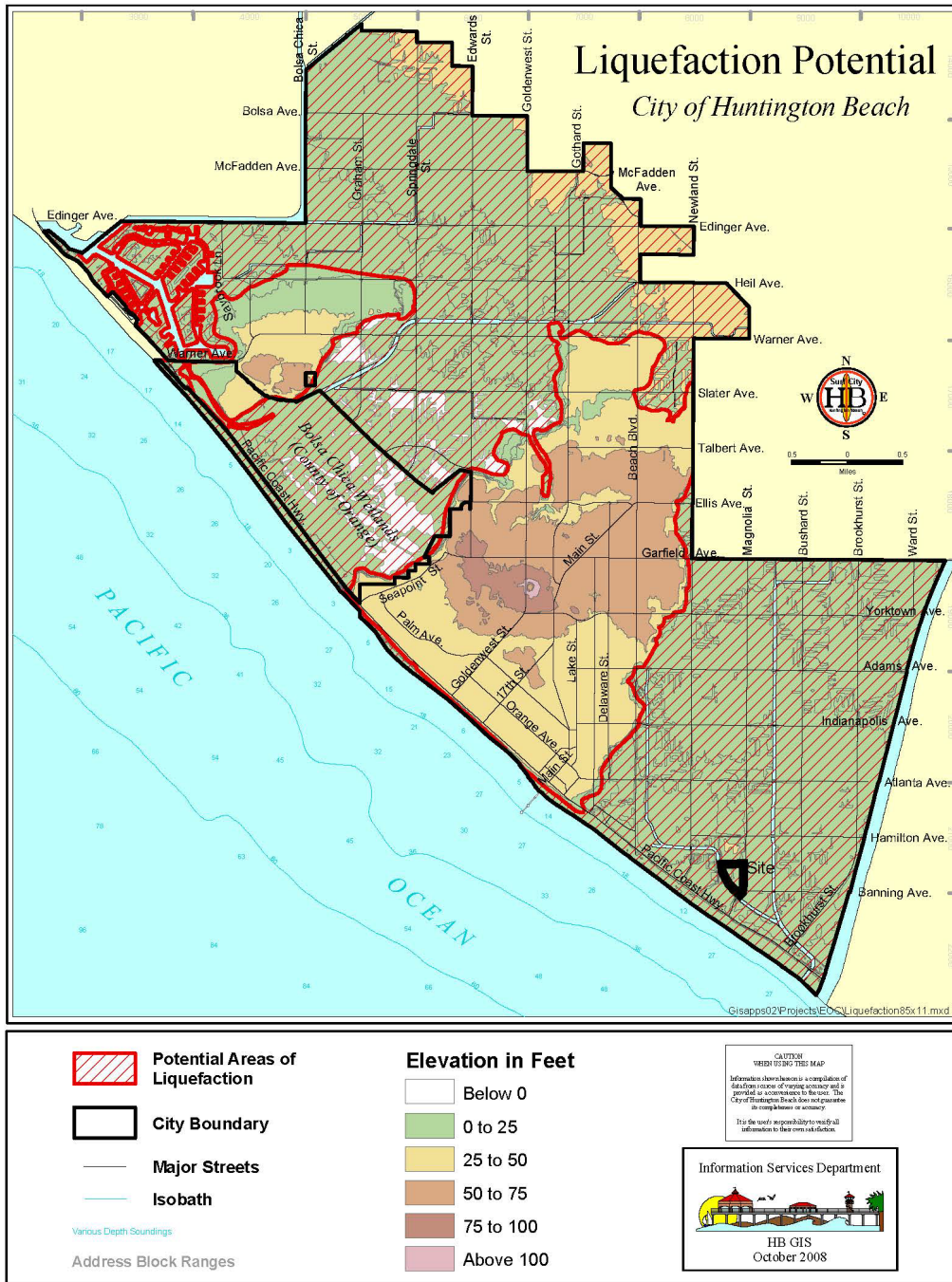
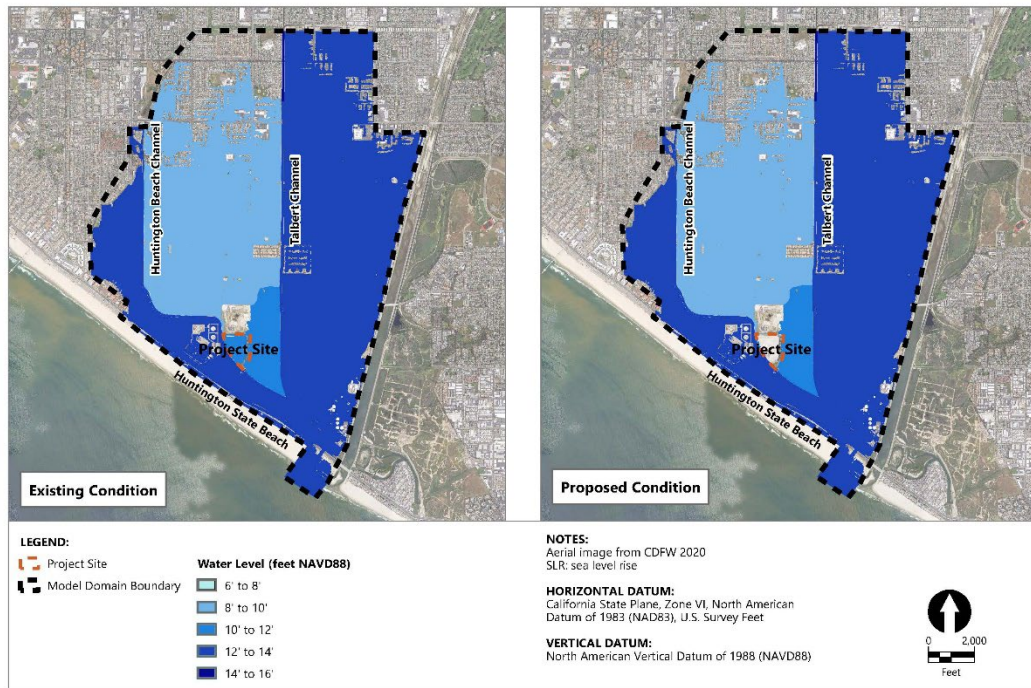


Figure 8. Liquefaction Potential map, City of Huntington Beach. Site outlined in black.



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Figure 2-18
100-Year Flood Maximum Water Levels Under 7.0 feet SLR for Existing and Proposed Conditions
 Sea Level Rise Vulnerability Assessment and Adaptation Plan
 Magnolia Tank Farm Redevelopment Project

Figure 9. Flooding under Existing and Proposed Conditions from the Anchor QEA Hec-RAS 2D study. Site outlined in orange.