From: Miyoko Sakashita
To: CSLC CommissionMeetings
Cc: Emily Jeffers; Victoria Bogdan Tejeda; Brady Bradshaw
Subject: 4/7/2023: Item 71
Date: Thursday, March 30, 2023 10:32:21 AM
Attachments: image001.png
2023-03-29 Cover Letter SLC Long Beach Unit Plans.pdf
23.03.21 Ctr Biol Diversity - Comment on LBU Program Annual Plans .pdf

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Attention: This email originated from outside of SLC and should be treated with extra caution.

Dear State Lands Commission,

The Center for Biological Diversity submits the attached comments in response to Item 71 regarding the City of Long Beach's draft five-year Program Plan for the Long Beach Unit, covering years 2023-28, and the related one-year draft Annual Plan for the LBU, covering July 1, 2023-June 30, 2024.

All sources cited in the comment letter are included in this public folder, which are included here as part of our comments: Long Beach Unit Annual & Program Plans - References

Please confirm you can access and will download these references, if you would like them sent via email please let me know the maximum file size for emails as they will need to be sent in several parts. Copies of everything were also mailed via the US Postal Service on March 29, 2023.

Thank you,

Miyoko
Center for Biological Diversity

Miyoko Sakashita

Oceans Director | Senior Counsel

Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
tel. 510-844-7108 | miyoko@biologicaldiversity.org
@endangeredocean | Center for Biological Diversity

March 29, 2023

California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

cslc.commissionmeetings@slc.ca.gov

SUBJECT: 4/7/2023: Comment on Item 71 Long Beach Unit Program Plan (2023-2028) and Annual Plan

Dear Members of the State Lands Commission,

On behalf of the Center for Biological Diversity, we are writing regarding the City of Long Beach's five-year Program Plan for the Long Beach Unit, covering years 2023-28, and the related one-year Annual Plan for the Long Beach Unit.

As a threshold matter, the Commission and City of Long Beach must conduct an environmental review under the California Environmental Quality Act ("CEQA"). The plans propose over 100 drilling activities and open the door to other actions such as the use of enhanced oil recovery. As a result, they meet the low-bar test of triggering environmental review under CEQA. CEQA was intended to afford the fullest possible protection to the environment, and the Commission must take action to comply by subjecting the plans to full environmental review and public comment.

The plans represent a significant increase in oil drilling activity and present impacts beyond the status quo. As detailed in the enclosed comment letter, Long Beach oil and gas drilling impacts air quality, climate emissions, water quality, subsidence, species, environmental justice, energy use, and other areas of consequence. Notably, the plan projects over 26.2 million barrels of oil and over 12 billion cubic feet of natural gas production — a marked increase over the previous five-year program's production numbers. Increasing activities at the Long Beach Unit will exacerbate the harms already caused by oil and gas drilling in Long Beach. This is unacceptable, especially in light of Long Beach's own plans to phase out oil and gas by reducing production. We urge the Commission to work with Long Beach to implement a five-year phaseout of oil drilling in Long Beach, as it is necessary to protect public safety and the environment.

Additionally, the Commission must require an end to all oil and gas operations within 3200 feet of homes, schools, nursing homes, and hospitals, as established by Senate Bill 1137 (2022). Governor Newsom signed SB 1137 into law, and while its enactment is delayed because of a referendum, it is a vital public health protection that begins to address the environmental health disparities experienced by frontline communities. The Commission must not perpetuate the harms that the legislature already declared "disproportionately impact Black, indigenous, and

people of color in California." SB 1137 (Gonzalez, 2022). For these and other reasons, the plans are not in the public interest.

Moreover, the Commission and Long Beach should ensure that these drilling activities obtain appropriate permits under the Coastal Act. Any person wishing to engage in development in the coastal zone must obtain a coastal development permit. Cal. Pub. Res. Code, § 30600. The Act requires a coastal development permit for "any development" in the coastal zone, which is broadly defined. *Id.* §§ 30600 & 30106. Here, with the increase in drilling and production—as well as the intensified uses, associated services, activities, and potential for enhanced recovery practices—these plans should be subject to a coastal development permit.

We urge the Commission to use its authority to review and revise the five-year Program Plan and Annual Plan. The Commission must reduce production and eliminate operations in setback zones because these steps are "necessary to assure that the plan . . . does not involve significant safety or environmental risks." Chapter 941 of Statutes of 1991 Sec. 3 (a). The Commission should extend its review of the plans to allow for meaningful consideration of Item 71 and re-agendize it for a future meeting.

Thank you for your consideration of these important issues. We urge the Commission to take action to protect public safety and the environment by revising the proposed plans and by ensuring they are subject to full environmental review under CEQA.

Sincerely,

Victoria Bogdan Tejeda
Emily Jeffers
Center for Biological Diversity

Enclosures:

Letter to the Long Beach City Council
References Cited

March 21, 2023

Submitted via email to cityclerk@longbeach.gov

References available at https://centerforbiologicald-my.sharepoint.com/:f:/g/personal/celkins_biologicaldiversity_org/EnKgnCor99lGuuLZ09VgLJEBe1qZCkB-L3ApueGIIPlwhQ?e=glc5NS

References also submitted via USB flash drive

Long Beach City Council
411 W. OCEAN BOULEVARD
Long Beach, CA 90802

Re: City Council Agenda Item: Recommendation to approve and adopt the Long Beach Unit Annual Plan (July 1, 2023 to June 30, 2024) and Program Plan (July 1, 2023 to June 30, 2028). (Citywide)

Dear Long Beach City Council:

The Center for Biological Diversity submits the following comments in response to the City of Long Beach's ("the City") draft five-year Program Plan for the Long Beach Unit ("LBU"), covering years 2023-28, and the related one-year draft Annual Plan for the LBU, covering July 1, 2023-June 30, 2024. The City posted both plans to its website for review by the public on Monday, March 13, 2023, and consideration by the City Council on March 21, 2023.

First, as a threshold matter, the City's plans must be subject to environmental review and public comment under the California Environmental Quality Act ("CEQA"). CEQA requires only that a discretionary activity *may* either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, for review to be triggered. As plans that propose over 100 drilling activities and open the door to other actions such as use of enhanced oil recovery, the plans meet this low-bar test. Long Beach oil and gas drilling, as we discuss below, impacts air quality, climate emissions, water quality, subsidence, species, environmental justice, energy use, and other areas of consequence. CEQA was intended to be interpreted in such a manner as to afford the fullest possible protection to the environment and the City must take action to comply by subjecting the plans to full review.

Second, we urge the City to adhere to its own plans to eliminate oil and gas by phasing down production. Inexplicably, the draft plans project over 26.2 million barrels of oil and over 12 billion cubic feet of natural gas production—an *increase* over the previous five-year Program

Plan's production numbers. This comes despite the City "know[ing] and support[ing] the position that oil production is not in [its] long-term future."[1]

Third, the City must end all oil and gas operations within 3200 feet of homes, schools, nursing homes, and hospitals, as established by Senate Bill 1137 (2022). Governor Newsom signed SB 1137 into law, and while its enactment is delayed because of a referendum, it is a vital public health protection that begins to address the environmental health disparities experienced by frontline communities. The City must not perpetuate the harms that the legislature already declared "disproportionately impact[s] Black, indigenous, and people of color in California."[2] Instead of pushing forward its plans that lead to continued harms and increased drilling, the City should create a plan for alternative sources of revenue, consistent with a five-year phaseout of oil drilling, that supports a just transition for impacted workers.

Finally, one week is an appallingly short amount of time for the public to review the proposed plans that will have consequences for years to come. In addition to pausing approvals for CEQA review, the City must provide the public with adequate time (at least 30 days) for review and public comment.

I. Because the plans are projects, CEQA review is required

The City of Long Beach is proposing in its five-year Program Plan for 2023-28 and associated Annual Plan to conduct oil and gas drilling activities in the LBU that are likely to cause adverse environmental impacts, as described in greater detail below. That neither the City nor any affiliated agencies have conducted CEQA review on the plans runs counter to law and deprives the public and other officials of information necessary to make informed decisions and formulate project alternatives and mitigations.[3]

CEQA directs state and local agencies to "take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state" and to "[e]nsure that the long-term protection of the environment . . . shall be the guiding criterion in public decisions."[4] "CEQA was intended to be interpreted in such a manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language," and "[t]he purpose of CEQA is . . . to compel government at all levels to make decisions with environmental consequences in mind."[5] By "requir[ing] full environmental disclosure," the Act

[1] City of Long Beach, Recommendation from the Sustainable City Commission (March 15, 2022) at 19, https://www.longbeach.gov/globalassets/city-manager/media-library/documents/memos-to-the-mayor-tabbed-file-list-folders/2022/march-15--2022---recommendation-from-the-sustainable-city-commission; *see also* City of Long Beach, Recommendation from the Sustainable City Commission & Reducing Reliance on City Revenue from Oil Production (Jan. 2022 and Oct. 2021) at 4, http://longbeach.legistar.com/View.ashx?M=F&ID=10423777&GUID=CE2373C6-1897-4A8F-9FE8-858224EC882E.
[2] SB 1137 (Gonzalez, 2022), approved and filed Sept. 16, 2022.
[3] Cal. Pub. Res. Code § 21002.
[4] *Id.* § 21001.
[5] Cal. Code Regs. tit. 14, § 15003 (hereinafter, "CEQA Guidelines").

ensures public awareness and participation in decisions with the potential for environmental consequences.[6]

The LBU plans are projects under CEQA and therefore warrant environmental review. CEQA applies to all "discretionary projects proposed to be carried out or approved by public agencies."[7] CEQA defines "project" as "the whole of an action" directly undertaken, supported or authorized by a public agency, "which *may cause* either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[8] The bar for what constitutes a direct or reasonably foreseeable indirect physical change in the environment is low. According to the California Supreme Court, the "likely *actual* impact of an activity is not at issue when determining its status as a project."[9] Instead, the threshold question is whether an activity, "by its general nature" may be "capable, at least in theory, of causing" direct or "reasonably foreseeable indirect" environmental changes.[10]

The LBU plans easily meet the test for what constitutes a "project" under CEQA. The draft Program Plan, covering years 2023-28, prescribes discretionary activities such as redrilling and possible new drilling, potential use of enhanced oil recovery, and other activities that could be capable of producing environmental impacts on air quality, water quality, noise, species, and more. The Annual Plan is not only "based upon 33 replacement wells" described in the Program Plan, but also pledges to undertake discretionary activities related to "facilities piping, tanks, and vessels" as well as to "plug[] wells to surface, in-zone, and conditional abandonments."[11] These are all activities that are capable of causing environmental changes and must be subject to environmental review. Further, just because the City is projecting to end its reliance on revenue from oil production by 2035,[12] that does not preclude the current plans (which extend to 2028) or future plans from triggering CEQA, given that the plans are capable of causing environmental impacts for many years to come.

Once CEQA review begins for the plans, it is likely that a full environmental impact report ("EIR") will be warranted because oil drilling activities may cause significant

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[6] *Cmtys. for a Better Env't v. City of Richmond*, 108 Cal. Rptr. 3d 478, 491 (Cal. Ct. App. 2010).
[7] Cal. Pub. Res. Code § 21080(a). Note that just because "further governmental decisions need to be made before . . . actual environmental impacts can be determined" does not mean an activity is not a project triggering CEQA review. *Muzzy Ranch Co. v. Solano Cnty. Airport Land Use Com.*, 41 Cal. 4th 372, 383 (2007), *as modified* (Sept. 12, 2007); *see also Save Tara v. City of W. Hollywood*, 45 Cal. 4th 116, 194 P.3d 344 (2008), *as modified* (Dec. 10, 2008) ("CEQA review may not always be postponed until the last governmental step is taken, because postponing the environmental review may incentivize ignoring environmental concerns.").
[8] Cal. Pub. Res. Code. § 21065 (emphasis added); CEQA Guidelines § 15378.
[9] *Union of Med. Marijuana Patients, Inc. v. City of San Diego*, 7 Cal. 5th 1171, 1199 (2019) (emphasis in original).
[10] *Id.* at 1197.
[11] Annual Plan 2023-24 at 3-5.
[12] *See* City of Long Beach, Recommendation from the Sustainable City Commission & Reducing Reliance on City Revenue from Oil Production (Jan. 2022 and Oct. 2021), http://longbeach.legistar.com/View.ashx?M=F&ID=10423777&GUID=CE2373C6-1897-4A8F-9FE8-858224EC882E.

environmental effects.[13] That EIR must present "feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such" activities.[14]

The foundational components of CEQA—transparency, analysis and information sharing, alternatives and enforceable mitigation measures, public comments and agency responses[15]—are vitally important to environmental protection and civic participation. Notably, *all* such components are absent in the City's current process for Program and Annual Plans. The draft plans provide no impacts analysis, offer no alternatives, and prescribe no mitigations. Moreover, the City provided only one week between release of the draft plans and the hearing date before City Council—hardly enough time for the public, and particularly those in overburdened and frontline communities—to digest the plans and offer comment. As such, the City is running afoul of CEQA and undermining public participation.

II. Impacts of Plan Activities

The plans prescribe drilling and operations activities that will lead to the production of over 26.2 million barrels of oil and over 12 billion cubic feet of natural gas. These activities will cause a range of direct and indirect environmental impacts. The drilling will put communities and ecosystems at risk of oil spills and other accidents, degrade groundwater aquifers, and cause subsidence which can lead to flooding and increased seismicity. The plan activities will lead to harmful air pollution as well as approximately the same greenhouse gas emissions as two coal-fired powerplants. The activities also perpetuate environmental injustice since much of the operations are within the health and safety buffer researchers have identified as necessary to avoid frontline communities at risk. Because of these foreseeable impacts, and others, the City must conduct a robust CEQA review.

A. The Plans Risk Harmful Oil Spills and Other Accidents

Oil spills are an inevitable consequence of oil drilling and can occur during every phase of onshore and offshore drilling, from exploration to extraction to transportation and refinement. California has seen spill after spill during the decades oil companies have been drilling on land and in our ocean. In the last two years alone, Orange County has seen multiple oil spills discharge tens of thousands of gallons of oil into the ocean, from breaks in pipes connecting offshore drilling operations to shore. And in 2015, the Plains All American pipeline ruptured and spilled up to 142,000 gallons of oil on the Santa Barbara coastline. While there are inherent risks in any drilling, the infrastructure in waters off California is especially susceptible to causing another disaster due to its age and condition, including Long Beach's oil islands and pipelines. Long Beach must consider the risk and mitigate the risk oil spills pose to the local community, the coastal ecosystem, endangered wildlife, and the economy.

In addition to the risks inherent in drilling for oil, hazards from climate change, such as increased severity of storms and sea level rise, increase the risk of oil spills and other accidents

[13] Cal. Pub. Res. Code § 21080(d); *see also* CEQA Guidelines §§ 15063(b)(1), 15064.
[14] Cal. Pub. Res. Code § 21002.
[15] *See* Cal. Pub. Res. Code § 21002, 21003.1; *see generally* CEQA Guidelines § 15002.

from aging infrastructure. Their old age also increases the risk of spills. For example, according to scientists, aging poses risks of corrosion, erosion and fatigue stress to subsea pipelines.[16] Subsea pipeline corrosion appears to accelerate over time,[17] and can act synergistically with fatigue stress to increase the rate of crack propagation.[18] Marine environments are especially known to produce significant corrosion on steel surfaces, and when a steel structure is at or beyond its elastic limit, the rate of corrosion increases 10 to 15 percent.[19] One offshore pipeline study found that after 20 years the annual probability of pipeline failure increases rapidly, with values in the range of 0.1 to 1.0, which equates to a probability of failure of 10 to 100 percent per year.[20]

The U.S. Department of Transportation itself found that offshore pipelines can be more vulnerable than onshore pipelines. They have a greater vulnerability to severe weather conditions than onshore pipelines, especially during hurricane events. And massive wave action can alter the pipeline stability, causing gradual displacement, especially in small diameter pipelines.[21] Offshore pipelines can also face more corrosion than onshore pipelines due to higher temperature and pressure conditions that occur during the laying of these pipelines.[22]

Oil spills have a wide array of lethal and sublethal impacts on terrestrial and marine species, both immediate and long-term. For example, a growing body of evidence demonstrate that even brief exposures to crude oil and its components can have severe impacts on fish and invertebrate species. Schlenker et al. (2022) investigated the response of wild mahi-mahi (*Coryphaena hippurus*) to crude oil exposure and found:

> profound effects on survival and reproduction in the wild. In addition to significant changes in gene expression profiles and predation mortality, we documented altered acceleration and habitat use in the first 8 days oil-exposed individuals were at liberty as well as a cessation of apparent spawning activity for at least 37 days. These data reveal that even a brief and low-dose exposure to crude oil impairs fitness in wild mahi-mahi.[23]

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[16] Petroleum Safety Authority Norway, Material Risk – Ageing offshore installations (2006) ("PSA Norway").
[17] Mohd, M.H. and J.K. Paik, *Investigation of the corrosion progress characteristics offshore oil well tubes*, 67 Corrosion Science 130-141 (2013).
[18] PSA Norway 2006.
[19] Mohd and J.K. Paik, *Pitting corrosion in pipeline steel weld zones*, 53:12 Corros. Sci. 4026–4032 (2011); R.E. Melchers, et al., *Statistical characterization of surfaces of corroded steel plates*, 23 Mar. Struct. 274–287 (2010).
[20] Bea, R., C. Smith, et al., Real-time Reliability Assessment & Management of Marine Pipelines, ASME, 21st Int'l Conference on Offshore Mechanics & Arctic Engineering (2002), https://asmedigitalcollection.asme.org/OMAE/proceedings-abstract/OMAE2002/36142/133/294825.
[21] U.S. Dep't of Transportation: Federal Highway Administration. Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: The Gulf Coast Study, Phase 2 (2014).
[22] Keuter, J., In-line Inspection of Pipes Using Corrosion Resistant Alloys (CRA) (2014), Rosen Technology and Research Center GmbH, Rosen Group, Germany; Standard Oil Company (1981) Drilling fluid bypass for marine riser. U.S. Grant. US4291772 A.
[23] Schlenker, Lela S. et al., *Brief oil exposure reduces fitness in wild Gulf of Mexico mahi-mahi* (*Coryphaena hippurus*), 56 Envt'l Sci. & Tech. 13019, 13019 (2022). *See also* Ek-Huchim, Juan Pablo et al., *Red blood cell cytotoxicity associated to heavy metals and hydrocarbons exposure in flouder fish from two regions of the Gulf of Mexico*, 108 Bull. Envt'l Contamination & Toxicology 78 (2022); McDonald, Ashley M. et al., *Prior*

Recent research demonstrates that fish exposure to oil and gas from any given lease—exposure that contributes to the cumulative stresses experienced by individual animals—rises to the level of significance. For example, Pulster et al. (2021) found that 99 percent of red snapper (*Lutjanus campechanus*) sampled throughout the Gulf of Mexico between 2011–2017 showed signs of liver damage (*e.g.*, inflammation, neoplasms and other lesions, parasites) associated with exposure to PAHs.[24] And Lawson et al. (2021) found that deep-sea invertebrate species including sea anemones, sea cucumbers, and sea pens bioaccumulate PAHs.[25]

Oil pollution poses a well-known and significant threat to seabirds.[26] Seabirds are particularly vulnerable to offshore oil and gas development because of their frequent contact with the water's surface, their myriad foraging strategies, and the propensity of oil—even the thinnest sheen—to adhere to the birds' plumage.[27] Birds may be exposed to oil through acute events like spills, and chronically through routine discharges and leaks.[28] Chronic oil exposure is more challenging to measure, but can have pervasive lethal, sublethal, and cascading effects that

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exposure to weathered oil influences foraging of an ecologically important saltmarsh resident fish, 10 PeerJ e12593 (2022).

[24] Pulster, Erin L. et al., *Hepatobiliary PAHs and prevalence of pathological changes in Red Snapper*, 230 Aquatic Toxicology 105714 (2021). Previous research has demonstrated that fish exposed to PAHs may experience reduced growth, endocrine disruption, reproductive harms, embryonic malformations, behavioral impairment, suppressed immune system function, skeletal and skin disorders, abnormal liver growths, cancer, and death. Peter Albers, Petroleum and Individual Polycyclic Aromatic Hydrocarbons, Ch. 14 *in* David J. Hoffman *et al.* (eds), Handbook of Ecotoxicology 352, 353 (2d ed. 2002); Tracy K. Collier et al., *Effects on fish of polycyclic aromatic hydrocarbons (PAHs) and naphthenic acid exposures*, 33 Organic Chemical Toxicology of Fishes 195, 197-98, 200-06, 211-22, 224-30 (2014); Ronald Eisler, Polycyclic aromatic hydrocarbon hazards to fish, wildlife, and invertebrates: a synoptic review, U.S. Fish & Wildlife Serv. Biological Report 85 (1.11) 32 (May 1987); Xavier Cousin & Jerome Cachot, *PAHs and fish—exposure monitoring and adverse effects—from molecular to individual level*, 21 Envtl. Sci. and Pollution Research 13685, 13688 (2014); Canadian Water Quality Guidelines for the Protection of Aquatic Life: Polycyclic Aromatic Hydrocarbons (PAHs) 5, 6, 8 (1999); Britton C. Goodale, Ph.D., Dissertation: Developmental toxicity of Polycyclic Aromatic Hydrocarbons: Defining Mechanisms with Systems-Based Transcriptional Profiling 8 (2013); Jerry F. Payne et al., Ecotoxicological Studies Focusing on Marine and Freshwater Fish, Ch. 11 *in* Peter E.T. Douben (ed.), PAHs: An Ecotoxicological Perspective 192, 201-06, 208-09 (2003). The harms of exposure may be passed down through the generations. Collier et al. at 222-24; Cousin & Cachot 16389; Payne et al. at 205-06.

[25] Lawson, M. Chase, et al. *PAH and PCB body-burdens in epibenthic deep-sea invertebrates from the northern Gulf of Mexico*, Marine Pollution Bulletin 162 (2021): 111825.

[26] Dias, M.P. et al., *Threats to seabirds: a global assessment*, 237 Biological Conservation 525 (2019).

[27] O'Hara, Patrick D. & Lora A. Morandin, *Effects of sheens associated with offshore oil and gas development on the feather microstructure of pelagic seabirds*, 60 Marine Pollution Bull. 672 (2010); Haney, J.C. et al., *Challenges to oil spill assessment for seabirds in the deep ocean*, 73 Arch. Environ. Contam. Toxicol. 33, 33 (2017).

[28] Jodice, P. G. R., et al., GoMAMN Strategic Bird Monitoring Guidelines: Seabirds, at 129-170 in R. R. Wilson, A. M. V. Fournier, J. S. Gleason, J. E. Lyons, and M. S. Woodrey (Eds.) (2019), Strategic Bird Monitoring Guidelines for the Northern Gulf of Mexico, Mississippi Agricultural and Forestry Experiment Station Research Bulletin 1228, Mississippi State University; Lamb, Juliet S., et al., *Seasonal variation in environmental and behavioural drivers of annual-cycle habitat selection in a nearshore seabird*, 26 Diversity & Distributions 254 (2020).

hinder species and ecosystem recovery.[29] Sublethal effects can occur even when oil is not visible.[30]

Marine mammals can be exposed to oil internally by inhaling volatile compounds at the surface, swallowing oil, consuming oil-contaminated prey, and externally by swimming in oil.[31] Exposure to toxic fumes from petroleum hydrocarbons during oil spills have been recently linked to mortality in cetaceans, even years after such accidents.[32] Studies have determined, for example, that the Deepwater Horizon oil spill caused adrenal and lung lesions in bottlenose dolphins which led to an unusual mortality event in which dolphins died over the course of several years.[33]

Oil spills can harm a wide variety of wildlife, which includes species protected under the Endangered Species Act ("ESA"). For example, ESA-listed sea otters are particularly vulnerable to contamination from oil spills. When sea otters come into contact with oil, it causes their fur to mat, which prevents the fur from insulating their bodies. Without this natural protection from the cold water temperature, sea otters can quickly die from hypothermia. The toxicity of oil can also be harmful to sea otters, causing liver and kidney failure and damage to their lungs and eyes.[34] ESA-listed western snowy plovers and the California least tern are extremely sensitive to disturbances such as oil spills, especially during the nesting season.[35]

ESA-listed fish also may be affected by the lease extensions. Tidewater goby is a small, endangered coastal fish that inhabits the coastal areas of California. Steelhead trout are an anadromous fish, and the southern California population is listed as endangered. They both have designated critical habitat in areas along the Southern California Coast.[36] Oil field pollution degrades tidewater goby habitat.[37] Fish are vulnerable to offshore oil and gas pollution and oil spills at all life stages.[38] For example, oil induced developmental abnormalities in laboratory

[29] Peterson, Charles H. et al., *Long-term ecosystem response to the Exxon Valdez oil spill*, 302 Sci. 2082 (2003).
[30] Fallon, J.A. et al., *Ultraviolet-assisted oiling assessment improves detection of oiled birds experiencing clinical signs of hemolytic anemia after exposure to the deepwater horizon oil spill*, 29 Ecotoxicology 1399 (2020).
[31] NOAA, Analysis of Hydrocarbons in Samples Provided from the Cruise of the R/V WEATHERBIRD II, (May 23-26, 2010).
[32] Venn-Watson et al., *Adrenal Gland and Lung Lesions in Gulf of Mexico Common Bottlenose Dolphins (Tursiops truncatus) Found Dead following the Deepwater Horizon Oil Spill*. PLoS ONE 10(5): e0126538 (2015), doi:10.1371/journal.pone.0126538.
[33] *Id.*
[34] U.S. Fish and Wildlife Service, Southern Sea Otter (*Enhydra lutris nereis*) 5-Year Review: Summary and Evaluation (Sept. 15, 2015).
[35] U.S. Fish and Wildlife Service, Recovery Plan for the Pacific Coast Popultion of the Western Snowy Plover at 73 (Sept. 13, 2007). Available at https://www.biologicaldiversity.org/species/birds/western_snowy_plover/pdfs/2007%20recovery%20plan.pdf.
[36] 70 Fed. Reg. 52488-52627 (2005); 78 Fed. Reg. 8746-8819 (2013).
[37] U.S. Fish and Wildlife Service, Recovery Plan for the Tidewater Goby (2005).
[38] Bernanke, J. & H.R. Kohler, *The impact of environmental chemicals on wildlife vertebrates*, 198 Rev. Envtl. Contamination & Toxicology 1 (2009).

zebrafish,[39] and salmonid embryos exposed to oil exhibited reduced growth and significantly lower survival.[40]

Oil and gas activity also creates noise, light, and other pollution that can harm ESA-listed species. For example, Senzaki et al. (2020) found "that anthropogenic noise and light can substantially affect breeding bird phenology and fitness."[41] Noise pollution created by offshore oil and gas activity can also harm marine mammals. In addition, the air, water, noise, light, and vibration pollution from injection activities onshore extends beyond the well pad and affects nearby habitat. Numerous studies have documented density effects whereby wildlife species decrease use of preferable habitat areas or avoid habitat areas altogether in areas with increasing densities of oil and gas development, leading to indirect habitat loss.[42]

Wetlands, and the sensitive vegetation and species they support, are also vulnerable to oil spills. When marsh plants come into contact with crude oil, it can cause nearly complete mortality.[63] Additionally, the oil can reside in the soil and cause long-term stress for marsh vegetation and erosion of marshlands.[43] Salt marsh bird's-beak, Ventura marsh milkvetch, and other threatened and endangered plants along the Southern California coast are at risk.

The coastal areas affected by oil spills in California include some of the more important cultural resources for Indigenous people. For example, the disastrous spills in 1969 and 2015 off Santa Barbara harmed Chumash sacred sites and animals.[44] The 2021 Platform Elly pipeline spill has harmed Acjachemen and Tongva homelands and cultural resources. A spill in Long Beach would harm important cultural resources. Under CEQA, agencies must, when feasible, avoid damaging tribal cultural resources, which include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to California Native American tribes.[45] Several tribal entities of the Acjachemen and Tongva nations hold critical cultural information regarding the cultural sites affected by the continued development of oil infrastructure, continued extraction, and continued threat of oil spills that threaten to impact these cultural resources and sacred sites. Oil spill response efforts without consultation with these entities risk further impacting cultural resources, and the City should consult early and often on these impacts and oil spill response plans. The City has the responsibility to engage in early and meaningful

[39] de Soysa, T. Yvanka et al., *Macondo crude oil from the Deepwater Horizon oil spill disrupts specific developmental processes during zebrafish embryogenesis*, 10 BMC Biology 40 (2012).
[40] Heintz, R.A. et al., *Delayed effects on growth and marine survival of pink salmon Oncorhynchus gorbuscha after exposure to crude oil during embryonic development*, 208 Marine Ecology Progress Series 205 (2000).
[41] Senzaki, Masayuki et al., *Sensory pollutants alter bird phenology and fitness across a continent*, 587 Nature 605 (2020).
[42] Beckmann, J.P. et al., *Human-mediated shifts in animal habitat use: Sequential changes in pronghorn use of a natural gas field in Greater Yellowstone*, Biological Conservation 147(1): 222-3 (2012); Dzialak M.R. et al., *Prioritizing conservation of ungulate calving resources in multiple-use landscapes*, PLOS One 6(1): e14597 (2011); Doherty, K.E. et al., *Greater sage-grouse winter habitat selection and energy development*, Journal of Wildlife Management 72: 187-195 (2008).
[43] NOAA, Oil Spills in Marshes (2013).
[44] Ben-Hur, Arielle, The Chumash Heritage National Marine Sanctuary: An Exploration of Changing the Discourse on Conservation, 105 Pitzer Senior Theses. 45-50 (2020).
[45] Cal. Pub. Res. Code § 21084.3.

consultation with tribes traditionally and culturally affiliated with the area (if such consultation is requested by the tribes).[46]

Oil spills also cause economic impacts, from closures of fisheries to lost revenue from tourism. Even before the 2021 oil spills in Orange County, an analysis found that since 1986, nearly 1400 oil and gas pipeline leaks, spills and other incidents in the California have caused at least $1.2 billion in damages, as well as 230 injuries and 53 deaths.[47] On average California has suffered 40 significant pipeline incidents a year, according to federal data.[48]

Other areas also experience significant costs as a result of oil spills. For example, tourism significantly declined after the 2010 BP Deepwater Horizon oil disaster in the Gulf of Mexico, even in neighboring states that were largely free of oil on their beaches.[49] Leisure visitor spending in Louisiana alone dropped by $247 million in 2010, with a total loss of $422 million over three years.[50] Even after shorelines are clean of oil, normal tourism activities may not resume if public perception of prolonged and wide-scale pollution remains.[51]

Both the Plains All American Oil Spill and the Platform Elly pipeline spill closed California fisheries and caused longer-term harm. The Deepwater Horizon disaster also has long lasting impacts on the region's fisheries. The long-term economic impact of the spill on commercial and recreational fisheries in the Gulf of Mexico is estimated at $8.7 billion.[52] California's economy similarly stands a lot to lose if an oil spill were to seriously impact the state's commercial fisheries. In 2017, approximately $210 million dollars in ex-vessel revenue (the amount paid directly to fishermen) came from commercial fishery landings, and more than 120,000 jobs on and off the water were supported by the state's seafood industry.[53]

B. Injection Wells Could Contaminate Drinking Water and Result in Earthquakes

The Plans will result in the injection of produced water containing chemicals used in oil production, and analysis must be done to ensure these injections do not contaminate drinking water in Long Beach or have other harmful impacts to human health and the environment including increased seismicity. Under CEQA, Long Beach must consider and mitigate direct and

[46] *Id.* §§ 21080.3.1, 21080.3.2.
[47] Center for Biological Diversity, Analysis: Even Before Orange County Leak, California Pipeline Incidents Cased $1.2 Billion in Damages, available at https://biologicaldiversity.org/w/news/press-releases/analysis-even-before-orange-county-leak-california-pipeline-incidents-caused-12-billion-in-damages-2021-10-07/ (Oct. 2021).
[48] Pipeline and Hazardous Materials Safety Administration, Accident and Incident Data, available at https://www.phmsa.dot.gov/data-and-statistics/pipeline/distribution-transmission-gathering-lng-and-liquid-accident-and-incident-data
[49] Oceana, Oil Spills and Tourism: They Don't Mix (2015), https://coastalcarolinariverwatch.org/wp-content/uploads/2019/06/14Oil-Spills-Tourism-Dont-Mix-Oceana.pdf.
[50] The Impact of The BP Oil Spill on Visitor Spending in Louisiana: Revised estimates based on data through 2010 Q4 , Tourism Economics, prepared for the Louisiana Office of Tourism (June 2011).
[51] ITOPF 2014, Effects of Oil Pollution on Social and Economic Activities, https://www.itopf.org/fileadmin/uploads/itopf/data/Documents/TIPS_TAPS_new/TIP_12_Effects_of_Oil_Pollution_on_Social_and_Economic_Activities.pdf.
[52] Sumaila et al. 2012, *Impact of the Deepwater Horizon well blowout on the economics of US Gulf fisheries*, Canadian Journal of Fisheries and Aquatic Sciences, https://doi.org/10.1139/f2011-171.
[53] NOAA, Fisheries Economics of the United States (2017), https://media.fisheries.noaa.gov/2021-09/FEUS2017-final-v1.3.pdf

indirect impacts of allowing injection. Because injecting produced water is part of the process of producing oil and gas, all those impacts should be adequately disclosed, analyzed, and mitigated for the entire 5-year duration of this project.

CalGEM's independent scientific panel has recommended a 3,200 foot buffer between homes and all oil and gas activities, including injection, and Long Beach must ensure that it meets this minimum distance for all injection wells.[54] CalGEM has also questioned the validity of Long Beach's maximum allowable injection pressure, and in particular the current injection gradient.[55] If altered, this "would limit the Unit's ability to inject water and subsequently reduce produced volumes."[56] Long Beach must disclose the content of the discussions with CalGEM and why the agency believes the current injection pressures and gradients are insufficient to protect the environment, including human health.

1. Risk of Aquifer Contamination

The Plans make clear that new injection wells are anticipated in the coming years, but make no attempt to ensure they do not result in contamination of nearby aquifers. The Plans also suggest that injection wells will be drilled in more permeable layers, which could result in increased leaching into nearby aquifers.[57] (To support the "strategy to invest and minimize the decline of the LBU's oil production rate" . . . activities will include [d]rilling injection wells targeting increased throughout in the less mature sand layers"). At a very minimum, Long Beach must disclose what is in the water being injected, and the water quality of the aquifer being injected into. Because the risks of aquifer contamination are great, and because Long Beach relies upon local groundwater for 60% of its water use, the City must ensure injection wells do not risk the drinking water for any residents of Long Beach.[58]

As shown by a century-long hydrological record, California undergoes repeated cycles of drought and non-drought due to natural climate variability.[59] During drought periods—when precipitation and snow pack are at a minimum—the state is forced utilize its groundwater reserves to meet it agricultural and drinking water needs. With ever-progressing climate change, such demand will only increase as drought-favorable conditions become more prevalent.[60]

Studies show that anthropogenic warming contributed to the severity of the recent California drought. One study attributes as much as 27 percent of California 2012-14 drought

[54] PSE Berkeley, Response to CalGEM Questions for the California Oil and Gas Public Health Rulemaking Scientific Advisory Panel (Oct. 1, 2021), https://www.conservation.ca.gov/calgem/Documents/public-health/Public%20Health%20Panel%20Responses_FINAL%20ADA.pdf.
[55] Program Plan at 13.
[56] *Id.*
[57] *Id.* at 27.
[58] Long Beach Water, Water Sources, available at https://lbwater.org/water-sources/ ("Roughly 60% of the Long Beach water supply is local groundwater).
[59] *See* Cheng, L. et al., *How has human-induced climate change affected California drought risk?*, 29 Journal of Climate 111 (2016); Diffenbaugh, N.S. et al., *Anthropogenic warming has increased drought risk in California*, 112 PNAS 3931 (2015); Williams, A.P., *Contribution to anthropogenic warming to California drought during 2012-2014*, 42 Geophys. Res. Lett. 6819 (2015).
[60] *Id.*

severity to anthropogenic warming, with natural variability accounting for the remainder.[61] As a result, drought severity was record-breaking in many counties.[62] This is because higher temperatures increase soil moisture loss, alter the timing of snowmelt, and decrease reservoir levels due to increased evaporation.[63]

In the future, municipalities may need to look not just to seawater, but to aquifers previously considered too salty to be usable, as a source of drinking water. The SDWA mandates protection of future drinking water sources as well as current sources. Given the potential for desalination and other treatment systems to render what was previously considered unusable water potable, the City must protect "freshwater" using a protective approach that more accurately reflects current technology in water treatment, and the necessity of preserving the future availability of sufficient fresh water during times of drought.

The fragile state of groundwater makes any potential impact of great and significant concern. All oil and gas wells, cyclic steam wells included, use a host of chemicals that are harmful to the environment and human health that would jeopardize groundwater. Recent studies have found numerous chemicals contained in fluid involved in routine oil production operations are harmful to human health.[64, 65] These include injection activities like waste disposal and enhanced oil recovery.[66] Disposal wells may receive wastewater that contains chemicals used to perform well maintenance or other chemical-dependent processes. Oil and gas wastewater and fluids injected for enhanced oil recovery may contain additional chemicals added in other phases of production or maintenance of a well.

Contaminating nearby aquifers would be an irreversible disaster. The State Water Resources Control Board explained to the state legislature recently that injection wells across the state have already contaminated scores of aquifers: "any injection [from injection wells] into the aquifers that are not exempt has contaminated those aquifers."[67] And once contaminants reach an aquifer, according to the Water Board, "you don't clean up aquifers, you contain the spread of

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[61] Williams, A.P., *Contribution to anthropogenic warming to California drought during 2012-2014*, 42 Geophys. Res. Lett. 6819 (2015).
[62] *Id.*
[63] Gleick, Peter, Circle of Blue, Clarifying the Discussion about California Drought and Climate Change (Mar. 7, 2014), *available at*: http://www.circleofblue.org/2014/in-the-circle/peter-gleick-clarifying-discussion-california-drought-climate-change/.
[64] Stringfellow WT, et al., *Comparison of chemical-use between hydraulic fracturing, acidizing, and routine oil and gas development*, 12 PLoS ONE(4): e0175344 (2017), https://doi.org/10.1371/journal.pone.0175344.
[65] *See* Shonkoff, S., "Hazard Assessment of Chemical Additives Used in Oil Fields that Reuse Produced Water for Agricultural Irrigation, Livestock Watering, and Groundwater Recharge in The San Joaquin Valley of California: Preliminary Results," PSE Health Energy Technical Report (Sept. 2016).
[66] *Id.*, citing Muggeridge, A, et al., *Recovery rates, enhanced oil recovery and technological limits*, Phil Trans R Soc A. 372:20120320 (2014), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3866386/.
[67] Transcript: Joint Oversight Hearing: Senate Natural Resource and Water and Environmental Quality Committees, "Ensuring Groundwater Protection: Is the Underground Injection Control Program Working?" Jonathan Bishop speaking at 74, (March 10, 2015). See also, CalEPA 2015, Memo: CalEPA Review of UIC Program,
https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/3_10_15_cal_epa_review_of_uic_program.pdf.

contamination."[68] Thus, any plans that puts groundwater at risk could lead to irreversible damage. Long Beach should not be jeopardizing groundwater for the benefit of the oil industry.

Injection activity does not occur in isolation. Operators use chemicals in all stages of oil production, such as drilling muds to facilitate the drilling process, powerful cleaning solvents, or chemical mixtures designed to maintain the well. Unfortunately, neither state nor federal regulations require companies to fully disclose the chemical identities or volumes used. While some chemicals have been identified, a substantial portion of chemicals remain secret. This is worrisome because enhanced oil recovery operations like cyclic steam injection commonly employ harmful chemicals acting as surfactants, polymers, caustics, or biocides to facilitate the operation.

The City must be aware of the full spectrum of substances being injected in order to regulate effectively. Accordingly, the range of substances to be tested for must be expanded, so that regulators and operators are aware of all fluids and chemicals injected or emplaced into a Class II injection well. Without such chemical information, it is impossible to detect contamination or predict how chemicals will interact or migrate in the subsurface.

The potential for harm is evident from past studies of oil and gas activities. CalGEM itself acknowledges that there are potential pathways for the chemicals and hydrocarbons to migrate underground. For example, "[o]ther wells within the area of review that penetrate the injection zone could potentially serve as conduits for fluid migration."[69]

The injection wells themselves may become conduits for fluid migration. In cyclic steam injection, the repeated soaking of the formation with very hot steam creates "large temperature variations and formation movements," putting extreme pressure on the ground and well casing, which can cause well failure or the migration of fluids and steam.[70] Indeed, "[c]yclic steam injection presents some of the harshest conditions" under which a well can be placed.[71] Thus, it is not surprising that rates of well casing failure from "excessive deformation, buckling, and collapse" are especially high in cyclic steam injection wells.[72] Further, the injection of hot steam can deform the surrounding formation and overlying ground so much that cyclic steaming can result in the migration of fluids and steam. This can sometimes pollute underground aquifers. It can also result in "surface expressions," in which the steam, oil, gas, and whatever else might be mixed in underground come bubbling to, or even exploding out of the surface of the ground.[73]

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[68] *Id.* at 73.
[69] Division of Oil, Gas, and Geothermal Resources (DOGGR), Initial Statement of Reasons In Support of Updated Underground Injection Control Regulations (2018) ("Statement of Reasons 2018"), at p. 16.
[70] Xie, Jueren, Analysis of Casing Deformations in Thermal Wells (2008), https://www.researchgate.net/publication/308709003_Analysis_of_Casing_Deformations_in_Thermal_Wells.
[71] Kulakofsky, David, Achieving Long-Term Zonal Isolation in Heavy-Oil Steam Injection Wells, a Case History (Aug. 2008), DOI: 10.2118/115201-MS.
[72] Wu, Jiang, Casing Temperature and Stress Analysis in Steam-Injection Wells, paper presented at the International Oil & Gas Conference and Exhibition (December 2006); *see also* Wu, Jiang, Casing Failures in Cyclic Steam Injection Wells (2008).
[73] Cal. Dep't of Conservation, Division of Oil, Gas, and Geothermal Resources, Report of Occurrences,

Cyclic steam injection leads to changes subsurface pressures, which are poorly understood and opens the door to fluid migration. A scientist at Lawrence Berkeley National Laboratory explained:

> "As important as the subsurface is for U.S. energy strategy, our understanding of how the subsurface responds to common perturbations, such as those caused by pulling fluids out or pushing fluids in, is quite crude.…We're not able to manipulate the subsurface with the control that can guarantee that we're not only maximizing energy production or waste storage, but that we're also protecting our environment—including minimizing greenhouse gas emissions, impacts to groundwater, and induced seismicity. That's a significant gap."[74]

Cyclic steam operations will lead to significant and unavoidable impacts for surface and groundwater. In the winter of 1995, six well casings in a field in Alberta, Canada, failed under the pressure of cyclic steam stimulation.[75] Similar to projects in Long Beach, the operations were pursuing heavy oil at relatively shallow depths.[76] The failures released approximately 55,000 cubic meters of "oil, saline produced water, and solids" to the environment, polluting two groundwater aquifers in the process.[77]

2. Increased risk of earthquakes

The mechanisms linking wastewater injection and earthquakes are well understood: injection-induced increases in fluid pressure within aquifers and fault lubrication by injected fluids have the potential to destabilize well bores and cause preexisting faults to slip.[78] Such mechanisms serve to explain atypical seismic activity, such as the extensively documented earthquakes in the central and eastern United States. There, earthquake count has increased dramatically over the last decade, with more than 300 earthquakes with $M \geq 3$ between 2010 and 2012, or an average of 100 events/year, compared with an average rate of 21 events/year for the period spanning 1967 to 2000.[79] This surge of activity includes a magnitude 5.7 earthquake that struck Oklahoma in 2011, in close proximity to active hydraulic fracturing wastewater wells,[80]

The Chevron Fatality Accident, June 21, 2011, and Area Surface Expression Activity, Pre and Post Accident, Sections 21 & 22 T.32S./R.23E., Midway-Sunset Oil Field, Kern County (May 2012) ("Accident Report"); Cal. Dep't of Conservation, Division of Oil, Gas, and Geothermal Resources, Reports of Occurrence: Surface Expressions in Bakersfield (2011) ("Spill Binder").

[74] Chao, J., "Underground Science: Berkeley Lab Digs Deep For Clean Energy Solutions," Lawrence Berkeley National Laboratory (Oct. 19. 2016), quoting Susan Hubbard, Associate Director, available at http://newscenter.lbl.gov/2016/10/19/berkeley-lab-digs-deep-clean-energy-solutions/.

[75] Kennedy, Alan and Calvin Sikstrom, *Assessment and Remediation of a Heavy-Oil Spill into Groundwater Aquifers*, International Oil Spill Conference Proceedings, Vol. 1997, No. 1, pp. 347-363 (April 1997).

[76] *Id.*

[77] *Id.*

[78] Brodsky, Emily and Lisa J. Lajoie, *Anthropogenic Seismicity Rates and Operational Parameters at the Salton Sea Geothermal Field*, 341 Science (2013); Davies, Richard et al., *Induced Seismicity and Hydraulic Fracturing for the Recovery of Hydrocarbons*, 45 Marine and Petroleum Geology 171 (2013).

[79] Ellsworth, William, *Injection-Induced Earthquakes*, 341 Science (July 12, 2013), https://www.science.org/doi/10.1126/science.1225942.

[80] Keranen, Katie M. et al., P*otentially Induced Earthquakes in Oklahoma, USA: Links between Wastewater Injection and the 2011 Mw 5.7 Earthquake Sequence*, 41 Geology 699 (2013).

and a 5.8 magnitude quake on September 3, 2016 that proved to be the most powerful earthquake ever recorded in Oklahoma.[81]

Detecting induced events in California has received less attention due to the greater background seismicity in the West. However, such connections have been made, as is the case in a published 2016 study linking wastewater injection in the Tejon Oil Field in Kern County to a September 2005 earthquake swarm of three $M \geq 4$ events near the White Wolf Fault.[82]

Given California's history with earthquakes and the noted links between wastewater injection and seismicity, these plans should not be approved without adequate consideration of these threats.

In Oklahoma, wastewater injection has already led to a magnitude 5.8 earthquake.[83] The earthquake's epicenter was an unknown fault.[84] The proposed regulations require disclosure of only previously *known* faults. This leaves the operator with no requirement to seek out any unmapped fault lines, like the one triggering Oklahoma's record earthquake, before injection operations begin.

Seismic monitoring should apply to all injection wells. Until more is known about the link between injection activity and seismic events, it is necessary to collect more data on earthquakes near injection activity. By failing to require data collection on injection wells, Long Beach is eschewing an important opportunity to further study how injections may lead to increased seismic activity.

3. Track record of missing well integrity tests

An analysis of state public records between 2015 and 2018 from California's Division of Oil, Gas and Geothermal Resources showed that the THUMS offshore platforms had long lapses with missing well integrity tests that are required by state law at least every five years. Most of the missing and failed well tests in the THUMS notices of violation were for underground injection wells, which are used to stimulate oil and gas production and help prevent the land subsidence that has caused billions of dollars in damage to Long Beach. Drilling wastes contaminated with toxic chemicals and heavy metals can be injected into these wells, which state law requires to be enclosed and able to withstand pressure so the ocean and freshwater aquifers don't get contaminated. "Mechanical integrity tests" are required before any underground injections take place. THUMS had 103 violations for missing tests and 47 failed tests, and Tidelands had 68 missing tests and 10 wells that failed the tests over the past three years.[85] Long

[81] Chen, Xiaowei et al., *The Pawnee earthquake as a result of the interplay among injection, faults and aftershocks*, 7 Nature Scientific Reports 4945 (2017).
[82] Goebel, T.H.W. et al., *Wastewater Disposal and Earthquake Swarm Activity at the Southern End of the Central Valley, California*, 43 Geophys. Res. Lett. 1092 (2016), https://doi.org/10.1002/2015GL066948.
[83] Yeck, W. L., et al., *Oklahoma experiences largest earthquake during ongoing regional wastewater injection hazard mitigation efforts*, 44 Geophys. Res. Lett. (2017), doi:10.1002/2016GL071685.
[84] *Id.*
[85] Center for Biological Diversity, "Records: Nearly 400 Violations at California Offshore Drilling Operations (April 11, 2018), https://www.biologicaldiversity.org/news/press_releases/2018/offshore-drilling-04-11-2018.php#:~:text=THUMS%20had%20103%20violations%20for,over%20the%20past%20three%20years; *see also* Database of Violations (included in references).

Beach must ensure that oil and gas operations are performing the proper well integrity tests to ensure adequate protection of the environment and human health.

C. Enhanced Oil Recovery

The Program Plan leaves open the possibility for enhanced oil recovery to "be considered for implementation if economically and technically viable."[86] Long Beach must examine and mitigate the impacts of such dangerous oil and gas extraction techniques under CEQA.

Enhanced oil recovery involves the injection of fluids or steam underground to increase the flow of oil and gas to the surface. Enhanced oil recovery techniques may combine injected fluids or steam with harmful chemicals used as surfactants. And while there are a number of enhanced oil recovery technologies, some elements are common to all processes; the use of a recovery fluid, a system to inject recovery fluids, surface processing, and a need to dispose of waste materials.[87] As a result, the environmental risks of enhanced oil recovery are shared by all methods.

Groundwater contamination: As discussed above, migration of injection fluids into drinking water aquifers is concerning due to the potentially hazardous substances those fluids may contain.[88] Chemical additives are often added to help increase production, and disclosure of contaminants in not required by federal or state regulations. Post injection, dissolution of other contaminants present in oil reservoirs can introduce new compounds into the fluid that will be recovered with oil. Contamination of groundwater is a major concern as approximately 60% of Long Beach's water needs are filled by local groundwater.[89] Health risks from chemicals migrating into Long Beach's groundwater must be adequately examined and mitigated.

Air pollution: As detailed below, oil and gas drilling in Long Beach results in emissions of hazardous air pollutants include volatile organic compounds and considerable greenhouse gas pollution. The pressure and heat needed for extended oil recovery operations can lead to significantly larger quantities of air pollution that conventional oil and gas extraction techniques. The California Air Resources Board itemized a number of sources associated with operational activities including steam generators, steam drive wells, cyclic steam wells, fugitive emissions from the wellhead, valves, fittings, and evaporation from sumps and pits.[90] The air pollution from these operational activities will be a significant impact if the Plans authorize extended oil recovery. In addition, the energy required to create the steam and transport the oil makes

[86] Program Plan 2023-28 at 6.
[87] *See* Clean Water Action, Environmental Risks and Oversight of Enhanced Oil Recovery (2017), https://www.cleanwateraction.org/sites/default/files/docs/publications/Environmental%20Risks%20and%20Oversight%20of%20Enhanced%20Oil%20Recovery%2011.08.17a.pdf.
[88] Stringfellow, et al., Comparison of chemical-use between hydraulic fracturing, acidizing, and routine oil and gas development, 12 PLoS ONE(4): e0175344 (2017) https://doi.org/10.1371/journal.pone.0175344.
[89] Long Beach Water, Groundwater, available at https://lbwater.org/water-sources/ground-and-imported-water/.
[90] CCST Report Vol. II at p. 199, citing CARB (California Air Resources Board) (2013), Almanac Emission Projection Data: 2012 Estimated Annual Average Emissions by California Air District, http://www.arb.ca.gov/ei/maps/statemap/dismap.htm.

California's oil production some of the most carbon-intensive in the world, especially from fields that rely on enhanced oil recovery.[91]

Worker safety: California regulators now rightly *presume* injections into diatomaceous formations "creates a risk of surface expressions…."[92] These surface expressions have occurred frequently and with disastrous effects. On June 21, 2011, a Chevron worker was killed when investigating steam coming from a surface expression caused by cyclic steaming in Kern County's Midway-Sunset oil field.[93] When approaching the plume of steam, the ground gave way, and the worker fell into a sinkhole and died.[94] In May 2012, California's Division of Oil, Gas, and Geothermal Resources (now known as CalGEM) issued a report on the tragedy.[95] As with the Plan at issue, operations in the Midway-Sunset oil field were using enhanced oil recovery (cyclic steam injection) to exploit shallow heavy oil deposits.[96]

D. Subsidence and Increased Impacts from Sea Level Rise, Storm Surges, and Flooding

Long Beach admits in its Program Plan that "the oil reservoir zones of the Wilmington Oil Field are susceptible to compaction" and "[a] major goal during the operation and development of the Unit is the continued prevention of subsidence related to oil and gas production."[97] Long Beach must examine and mitigate the risks of subsidence under CEQA, especially as subsidence will be exacerbated by sea level rise, storm surges, and flooding caused by climate change.

Land subsidence in Long Beach is caused by the extraction of oil and gas from underground reservoirs. Long Beach is home to one of this country's most dramatic cases of land subsidence caused by oil and gas production; between 1928 and 1965, the community sank almost 30 feet. As the oil reservoirs were depleted, sand compaction caused a land subsidence that flooded streets and wharfs and caused structural damage to bridges, railroads, and other harbor facilities.[98]

While subsidence in Long Beach in recent years is less dramatic, subsidence is still a major issue. One recent study that examined subsidence in Long Beach was conducted by the

[91] Center for Biological Diversity, Killer Crude: How California Produces Some of the Dirties, Most Dangerous Oil in the World (2021), https://www.biologicaldiversity.org/programs/climate_law_institute/pdfs/June-2021-Killer-Crude-Rpt.pdf.
[92] Statement of Reasons at p. 30.
[93] Department of Conservation Division of Oil, Gas and Geothermal Resources, Executive Summary of Report of Occurrences: The Chevron Fatality Accident June 21, 2011 and Area Surface Expression Activity Pre and Post Accident – Sections 21 & 22 T.32S./R.23E., Midway-Sunset Oil Field Kern County (May 2012). (aka "Accident Report ES"); Accident Report at 2.
[94] *Id.* at 2.
[95] *Id.* at 1.
[96] *Id.* at 9.
[97] Program Plan 2023-28 at 11.
[98] USGS, National Assessment of Coastal Change Hazards (2003), https://pubs.usgs.gov/of/2003/of03-337/extraction.html.

United States Geological Survey ("USGS") in collaboration with the City of Long Beach.[99] The study, published in 2018, used satellite data to measure changes in land surface elevation in Long Beach over a 17-year period. The study found that parts of Long Beach had subsided by as much as 9 inches during that time period, with the greatest subsidence occurring in areas where oil extraction had taken place.

The impacts of land subsidence are particularly dire near sea level where minor lowering of the land surface results in permanent inundation. Not only are many of Long Beach wells near sea level, but sea level rise in coming years will compound the subsidence problem and result in increased flooding. In the Los Angeles region, containing all of Ventura, LA, and Orange Counties, roughly 1 to 2 feet of sea level rise is projected by mid-century, with the most extreme projections predicting 8 to 10 feet of sea level rise by the end of the century.[100] Scientific estimates suggest that sea level rise in California could be at least half of a foot just in 2030.[101] In its recent adopted Climate Action Plan, the city of Long Beach projected 11 inches of sea level rise by 2030.[102] As drilling in Long Beach exacerbates land subsidence in the community, the impacts of sea level rise will become increasingly severe.

The City of Long Beach has voiced extreme concern at the prospect of sea level rise and resulting economic impacts.[103] For example, in its Climate Action Plan, Long Beach acknowledges that "permanent inundation from [sea level rise] as well as increased frequency and intensity of temporary flooding from king tides and storm surges will become a very real threat in the near future." The Plan identifies a number of actions the City will take to address sea level rise and flooding.[104] These include relocating/elevating critical infrastructure, including elevating riverine levees and flood proofing vulnerable sewer pump stations, elevating streets and pathways, extending sea walls, and investigating the feasibility of a managed retreat in the long term.[105] Despite the concern the City professes to have for the impacts of sea level rise, it continues to allow oil and gas drilling that will inevitably increase subsidence and vulnerability to sea level rise, as well as produce the very emissions that causes sea level rise in the first place.

The subsidence caused by drilling in Long Beach will also result in increased expense to mitigate the harm of sea level rise. With 11 inches of sea level rise (predicted by 2030), approximately 1.3 million square feet of buildings are projected to be exposed to annual king tides. Approximately half of these buildings are residential (624,100 square feet) and half are

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[99] USGS, Comparison of regression relations of bankfull discharge and channel geometry for the glaciated and nonglaciated settings of Pennsylvania and southern New York (2018), https://pubs.er.usgs.gov/publication/sir20185066.
[100] California's 4th Climate Change Assessment, Los Angeles Region Report, https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf.
[101] Legislative Analyst's Office, What Threat Does Sea Level Rise Pose to California (2020), https://lao.ca.gov/reports/2020/4261/sea-level-rise-081020.pdf.
[102] City of Long Beach, Climate Action Plan at 16 (2022), https://longbeach.gov/globalassets/lbds/media-library/documents/planning/lb-cap/adopted-lb-cap_-aug-2022.
[103] *Id.* at 55.
[104] *Id.* at 11-12.
[105] *Id.*

commercial (689,600 square feet).[106] At the very least, Long Beach must examine to the degree to which oil and gas drilling exacerbate the burdens of sea level rise within the city.

In addition, larger storms are predicted in the future, resulting in increased rainfall, flooding, and storm surges. According to the Climate Action Plan: "Urban flooding during precipitation events is already a problem in Long Beach, and extreme events today provide an example of what may become more common in the future, when more intense precipitation events are projected."[107] As Long Beach experiences heightened storm surges and king tides, battering the coast, subsidence will increase water inundation and cause innumerable problems for residents of the city.

E. Environmental Justice

There are significant environmental justice impacts from drilling in the Long Beach Unit. According to analysis by FracTracker, an estimated 140,138 Long Beach residents—amounting to over 30% of the City's population—live within 3,200 feet of an operational oil and gas well within the city limits.[108] Of those, 101,498 (72.4%) are people of color.[109]

According to CalEnviroScreen, communities living near Long Beach Unit drilling activities are in the highest percentiles for pollution vulnerability. The CalEnviroScreen map below "shows the combined Population Characteristics scores, which is made up of indicators from the Sensitive Populations and Socioeconomic Factors components of the CalEnviroScreen model. Population Characteristics represent physiological traits, health status, or community characteristics that can result in increased vulnerability to pollution."[110]

Environmental justice is increasingly being incorporated into State decisionmaking, and CEQA is an important environmental justice tool. The State Attorney General announced that his office "is particularly concerned that land use planning and permitting decisions consider and address any additional burdens on environmental justice communities."[111] And as stated by the California Environmental Justice Alliance, "CEQA protects the basic rights of disadvantaged or EJ communities in California. These rights include the right to clean air and water, [and] the right to participate in local land use decisions, and the right to affordable housing and good schools free from pollution and other harms."[112] As shown above, environmental justice considerations are directly relevant to LBU plans. The City's current process to prepare, propose, and adopt Program and Annual Plans ignores the need to take environmental justice considerations into account.

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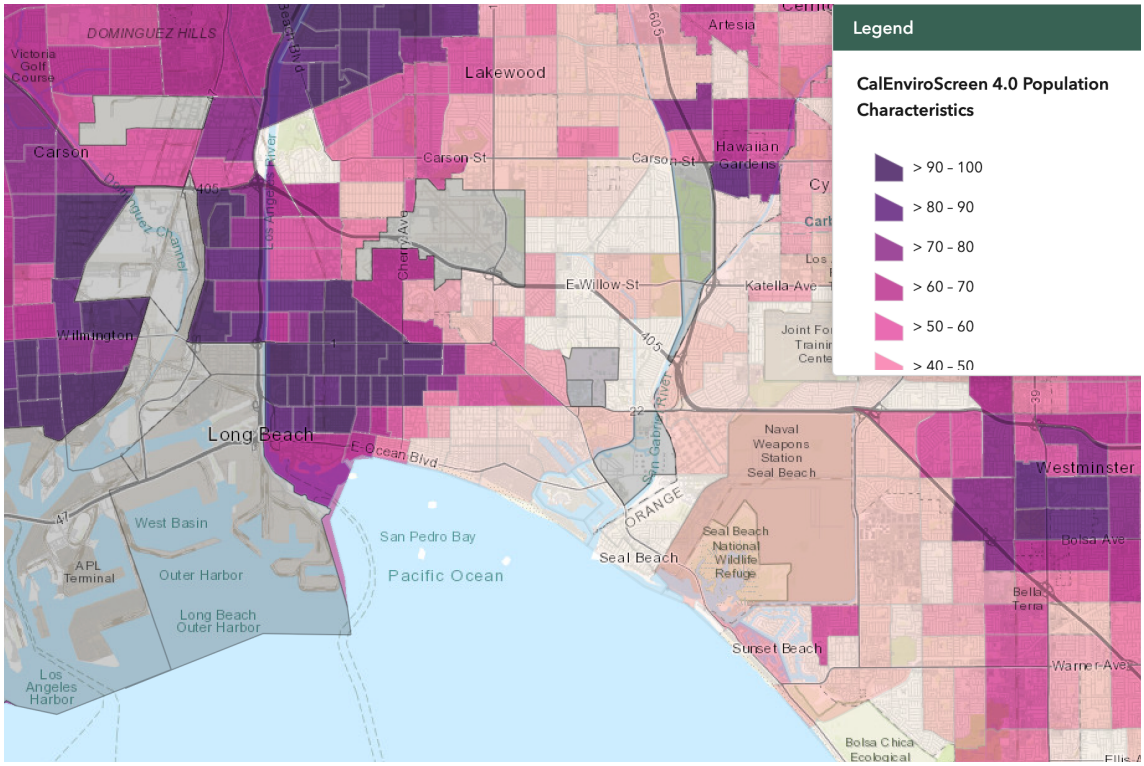
[106] *Id.* at 23, Appendix C.
[107] City of Long Beach, Climate Action Plan at 56.
[108] FracTracker, City of Long Beach Oil and Gas Extraction (April 1, 2022) at 2.
[109] *Id.*
[110] OEHHA, CalEnviroScreen 4.0, https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40 (search for "Long Beach" and "Population Characteristics").
[111] Bon Bonta, Cal. Attorney General, https://oag.ca.gov/environment/justice.
[112] Cal. Environmental Justice Alliance, Protect CEQA to Advance Environmental Justice and Protect Housing, https://caleja.org/2019/05/protect-ceqa-to-advance-environmental-justice-and-protect-housing/.



F. Greenhouse Gas Emissions & Air Pollution

Drilling and other oil field operations in the LBU produce significant air pollution and greenhouse gas ("GHG") emissions, impacts that must be analyzed and mitigated under CEQA.[113]

The climate crisis, caused primarily by fossil fuels, poses an existential threat to every aspect of society. In the words of the State Lands Commission:

> Climate change is an existential threat that grows more urgent each passing day . . . . The State of California, the fifth largest economy in the world, is aggressively pursuing various options to reduce greenhouse gas emissions and deaccelerate the impacts of climate change. The United Nation's Intergovernmental Panel on Climate Change has found that emissions from fossil fuels are the dominant cause of global warming. Oil, a fossil fuel that releases an enormous amount of carbon when burned, exacerbates climate change.[114]

[113] *See generally* CEQA Guidelines § 15126.2; Appendix G (naming GHG emissions and air quality as environmental factors that must be evaluated for significance).
[114] State Lands Commission, Staff Report 52 (Feb. 25, 2022), https://slcprdwordpressstorage.blob.core.windows.net/wordpressdata/2022/02/02-25-22_52.pdf.

Indeed, the vast scientific literature documenting these findings has been set forth in a series of authoritative reports from the Intergovernmental Panel on Climate Change ("IPCC"), U.S. Global Change Research Program, and other institutions, which make clear that fossil-fuel driven climate change is a "code red for humanity."[115] Without limits on fossil fuel production and deep and rapid emissions reductions, global temperature rise will exceed 1.5°C and will result in catastrophic damage in the U.S. and around the world.[116]

While the City has made statements to the effect of, "Long Beach knows and supports the position that oil production is not in our long-term future,"[117] the LBU continues to produce millions of barrels of oil each year. In 2015, "oil fields in Long Beach [likely referring to the entire Wilmington field] produced more than 13 million barrels of crude oil, representing significant [GHG] emissions."[118] Those 13 million barrels of crude oil (and 5.1 million Mcf of natural gas extracted) "generated an estimated 8.3 million MT CO2e in lifecycle emissions."[119] This is the equivalent of over 1.7 million gasoline-powered passenger cars driven for one year, or the annual operations of 2.2 coal-fired power plants.[120] Similarly, in 2022, the City reported production of approximately 10 million barrels of oil per year.[121]

According to a 2020 study conducted as part of the City's climate action planning, approximately 96 percent of the city's oil and gas lifecycle emissions are attributed to oil, with the remaining 4 percent resulting from natural gas.[122] That same study determined that Long Beach oil field carbon intensity is 5.48 gCO2e/MJ, which puts the oil field at 94th out of 157

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[115] *See* United Nations Secretary-General, Secretary-General's statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment, Aug. 9, 2021, https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment.
[116] IPCC, Summary for Policymakers, In: Global Warming of 1.5°C.:An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) [Masson-Delmotte, V. et al. (eds.)], https://www.ipcc.ch/sr15/.
[117] City of Long Beach, Recommendation from the Sustainable City Commission (March 15, 2022) at 19, https://www.longbeach.gov/globalassets/city-manager/media-library/documents/memos-to-the-mayor-tabbed-file-list-folders/2022/march-15--2022---recommendation-from-the-sustainable-city-commission; *see also* City of Long Beach, Recommendation from the Sustainable City Commission & Reducing Reliance on City Revenue from Oil Production (Jan. 2022 and Oct. 2021) at 4, http://longbeach.legistar.com/View.ashx?M=F&ID=10423777&GUID=CE2373C6-1897-4A8F-9FE8-858224EC882E.
[118] City of Long Beach, Appx G, Proposed Climate Action and Adaptation Plan (Nov. 2020) at 1, https://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/lb-cap/lb-caap-proposed-plan-app-g-_dec-14 ("Appx G Climate Plan").
[119] Appx G Climate Plan at 1.
[120] *See* EPA, Greenhouse Gas Equivalencies Calculator, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results.
[121] City of Long Beach, Recommendation from the Sustainable City Commission (March 15, 2022) at 5, https://www.longbeach.gov/globalassets/city-manager/media-library/documents/memos-to-the-mayor-tabbed-file-list-folders/2022/march-15--2022---recommendation-from-the-sustainable-city-commission.
[122] Appx G Climate Plan at 1.

when ranked lowest to highest.[123] This suggests that even among other California oil fields, the majority have a lower carbon intensity value than Long Beach oil.[124]

The City cannot ignore the plain fact that its oil and gas drilling operations results in significant climate impacts. The current draft Program Plan projects that over the next five years, **LBU expects to produce over 26.2 million barrels of oil and over 12 billion cubic feet of natural gas**.[125] Those are tremendously high numbers and represent an *increase* over what the Program Plan for 2021-26 anticipated.[126] The City's own report acknowledges that "[u]pstream emissions occur at the oil fields within the city boundary" and because "[t]he City issues well permits for petroleum operations, [it] has relatively more direct control over these emissions."[127] Even if oil and gas operations had no other environmental and public health impacts (which clearly is not the case), these massive GHG emissions would warrant analysis and mitigation under CEQA.

Similarly, it is well-documented that oil field operations result in significant impacts to air quality and expose communities and sensitive receptors to substantial air pollution concentrations.[128] Oil and gas operations emit large amounts of volatile organic compounds ("VOCs") and nitrous oxides ("NOX").[129] The oil and natural gas industry is the largest industrial source of emissions of VOCs, a group of chemicals that contribute to the formation of ground-level ozone (smog).[130] Ozone exposure is linked to a wide range of health effects, including aggravated asthma, increased emergency room visits and hospital admissions, and premature death.[131]

The VOCs emitted include the BTEX compounds—benzene, toluene, ethyl benzene, and xylene—which are Hazardous Air Pollutants.[132] There is substantial evidence of the harm from

[123] *Id.* at 8.
[124] *Id.*
[125] Draft Program Plan 2023-28, Exhibit C.
[126] Program Plan 2021-26, Exhibit C (projecting just over 25.4 million barrels of oil produced over five years). Moreover, the City showed its discretion because it increased production numbers anticipated in 2023-26 over what it prescribed in the 2021 Program Plan for the time period. For example, the City expected 5,037,000 barrels per year in 2023/24 (2021-26 Program Plan) but increased that to 5,365,000 (2023-28 Program Plan).
[127] Appx G Climate Plan at 2.
[128] *See, e.g.*, Stanford News, "Living near oil and gas wells increases air pollution exposure, according to Stanford research" (Oct. 21, 2021), https://news.stanford.edu/2021/10/12/living-near-oil-gas-wells-increases-air-pollution-exposure/.
[129] *Id.*
[130] EPA, "Basic Information about Oil and Natural Gas Air Pollution Standards," https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/basic-information-about-oil-and-natural-gas#:~:text=In%20addition%20to%20helping%20form,and%20other%20serious%20health%20effects.
[131] *Id.*
[132] Each has also been identified as a carcinogen. Mall, Amy, Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy at 13 (Sep. 8, 2010); 42 U.S.C. § 7412(b).

these pollutants, including cancer and other serious health effects.[133] One analysis found that 37 percent of the chemicals used during natural gas drilling, fracturing, and production were volatile, and that of those volatile chemicals, 81 percent can harm the brain and nervous system, 71 percent can harm the cardiovascular system and blood, and 66 percent can harm the kidneys.[134] Exposure to benzene has been associated with increased incidence of leukemia and other serious health conditions; exposure to toluene can damage the nervous system; and xylenes can cause dizziness, headaches, and loss of balance.[135] Another study found that among known air contaminants, compounds of particular concern that are known to be emitted during the well-stimulation-enabled oil and gas development process are BTEX compounds, formaldehyde, hydrogen sulfide, particulate matter, nitrogen oxides, sulfur dioxide, polycyclic aromatic, aliphatic, and aromatic hydrocarbons, and volatile organic compounds.[136] Wastewater reinjection and disposal are among the potential pathways for these contaminants to escape into the air.[137]

The pressure and heat needed for EOR operations can lead to significantly larger quantities of air pollution. The California Air Resources Board itemized a number of sources associated with operational activities including steam generators, steam drive wells, cyclic steam wells, fugitive emissions from the wellhead, valves, fittings, and evaporation from sumps and pits.[138] The air pollution from these operational activities will be a significant impact if the Plans authorize EOR.

In a 14-year study of air quality across California, researchers observed higher levels of air pollutants within 2.5 miles of oil and gas wells, likely worsening negative health outcomes for nearby residents.[139] Moreover, the cumulative impacts of oil and gas air pollution combined with Port pollution needs to be analyzed. The community in West Long Beach has extensive exposure to air pollution, heightened risks of pollution related health problems, and the South Coast Air Basin is in non-attainment of ozone and particulate matter.[140] Neither draft plans

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[133] Colborn, Theo et al., *Natural Gas Operations for a Public Health Perspective*, 17 Human and Ecological Risk Assessment 1039 (2011) ("Colborn 2011"); McKenzie, Lisa et al., *Human Health Risk Assessment of Air Emissions form Development of Unconventional Natural Gas Resources*, Sci Total Environ (2012), doi:10.1016/j.scitotenv.2012.02.018; Food & Water Watch, The Case for a Ban on Fracking (2012).
[134] Colborn 2011 at 8.
[135] Mall, Amy, Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy at 7 (Sep. 8, 2010).
[136] CCST Report, Vol. II, p. 410.
[137] *Id.*
[138] *Id.* at p. 199, citing CARB (California Air Resources Board) (2013), Almanac Emission Projection Data: 2012 Estimated Annual Average Emissions by California Air District, http://www.arb.ca.gov/ei/maps/statemap/dismap.htm.
[139] Stanford News, "Living near oil and gas wells increases air pollution exposure, according to Stanford research" (Oct. 21, 2021), https://news.stanford.edu/2021/10/12/living-near-oil-gas-wells-increases-air-pollution-exposure/.
[140] South Coast Air Quality Management District, Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV (2012), at 4-16, https://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

describe the impacts to air quality, which is all the more reason for analysis and disclosure of these likely impacts through CEQA analysis.

G. Energy Use

California's grid is on "shaky ground," with the 2022 heat wave pushing the grid "to the brink of collapse," prompting the California legislature and Governor Newsom to extend the life of the Diablo Canyon nuclear power plant despite a pre-planned closure.[141] Yet with the crisis of electricity demand in the State, the LBU is one of Southern California Edison's biggest electricity users, consuming approximately 683 million kWh per year in order to power its oilfield operations.[142] This is unacceptable. Because CEQA require that environmental reviews discuss the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy,[143] LBU's massive energy use must be addressed under CEQA.

Moreover, the Program Plan notes that the property lease for the Unit's in-house, 45MW power plant expires in July 2024, and lease negotiations have "stalled."[144] Failure to renew the lease could mean even greater demand on the State's power grid and/or "result in . . . relocating the plant or installing a sales pipeline to SoCal Gas."[145] Any of the potential scenarios above concerning the power plant could lead to significant concerns and environmental impacts and must be analyzed under CEQA.

H. Amine Plant

The City's Program Plan refers to an amine plant located within the oil field that is used in conjunction with power plant operations.[146] Amines are a class of chemicals that derive from ammonia[147] and can have negative effects on human health (irritation, sensitization, carcinogenicity, genotoxicity), be toxic to animals and aquatic organisms, and cause eutrophication and acidification in marine environments.[148] The Program Plan inadequately describes what having an "amine plant" means for the LBU and surrounding ecosystems and

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[141] *See* "California's latest power grid problems are just the beginning," Politico (Sept. 23, 2022), https://www.politico.com/news/2022/09/23/californias-lofty-climate-goals-clash-with-reality-00058466; Nathan Rott, "California lawmakers extend the life of the state's last nuclear power plant," NPR (Sept. 1, 2022), https://www.npr.org/2022/09/01/1119778975/california-lawmakers-extend-the-life-of-the-states-last-nuclear-power-plant.
[142] Program Plan 2023-28 at 12.
[143] Cal. Pub. Res. Code § 21100(b)(3); *see also* CEQA Guidelines, Appx. F: Energy Conservation (noting that environmental effects related to energy may include the project's energy requirements and its energy use efficiencies; the effects of the project on local and regional energy supplies; the effects of the project on peak and base period demands for electricity and other forms of energy; the degree to which the project complies with existing energy standards; the effects of the project on energy resources).
[144] Program Plan 2023-28 at 12.
[145] *Id*.
[146] *Id.* at 11.
[147] Science Direct, Amine Overview, https://www.sciencedirect.com/topics/chemistry/amine.
[148] Bellona, Amines Used in CO2 Capture - Health and Environmental Impacts (2009), https://network.bellona.org/content/uploads/sites/3/fil_Bellona_report_September_2009_-_Amines_used_in_CO2_capture.pdf ("Amine Report").

communities. The public needs to know about chemical transport, storage, production, use, discharges, and disposal. Because of the likely environmental and health impacts from using (or producing) amines in the LBU, this component of operations triggers CEQA and must be subject to review.

Amine use results in environmental and health impacts throughout its lifecycle. Amine gases that are released to the air could be dissolved in the rain droplets and ended up in water supplies such as rivers and lakes.[149] Some emitted amines are unstable in the nature environment.[150] The amines specifically used in natural gas capture are highly soluble in water and their reclaimer waste contains amine, ammonia, other degradation products, heat-stable salts, flue gas impurities, and also corrosion products.[151] Amines used in natural gas operations also lead to metals corrosion, which can result in excess emissions and leaks.[152] Discharged amines may degrade to some dangerous substances that are toxic and represents a risk for cancer, such as aldehydes, amides, nitrosamines, and nitramines.[153] Amine spills are a "major problem[]."[154] High concentration of amines in environment could leads to disruption of aquatic life and bioconcentration potential and can be toxic to humans.[155] Amines used near saltwater (a concern for the LBU) is especially concerning and could lead to significant impacts, as studies have sown amine degradation in seawater is slower than in the freshwater system.[156]

I. Cumulative Impacts

The public and other officials are entitled to know the cumulative impacts of LBU operations—including from drilling/redrilling activities, equipment updates and new technologies, power plant operations (including the associated amine plant), actions to reduce subsidence, and more.

CEQA requires a cumulative project impacts analysis because "the full environmental impact of a proposed . . . action cannot be gauged in a vacuum."[157] Under CEQA, cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.[158] The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.[159] In an EIR, the discussion of each type of cumulative

[149] Salim, S.R.S., *Treatment of amine wastes generated in industrial processes,* IOP Conf. Series: Materials Science and Engineering (2021) at 2, https://iopscience.iop.org/article/10.1088/1757-899X/1092/1/012051/pdf ("Amine Treatment Study").
[150] Amine Report at 13.
[151] Amine Treatment Study at 2.
[152] *Id.*
[153] Amine Report at 13.
[154] Amine Treatment Study at 2.
[155] *Id.*
[156] Eide-Haugmo, Ingvild et al., *Environmental impact of amines*, Science Direct, Energy Procedia 1 (2009) at 1298, https://www.sciencedirect.com/science/article/pii/S1876610209001714.
[157] *Whitman v. Board of Supervisors*, 88 Cal.App.3d 397, 408 (1979).
[158] CEQA Guidelines § 15355.
[159] *Id.*

impact need only be proportional to the severity of the impact and the likelihood of its occurrence,[160] but even an insignificant impact must be justified as such.[161] An underinclusive cumulative impacts analysis "impedes meaningful public discussion and skews the decision maker's perspective concerning the environmental consequences of a project, the necessity for mitigation measures, and the appropriateness of project approval."[162]

J. Health and Safety Buffer Zones

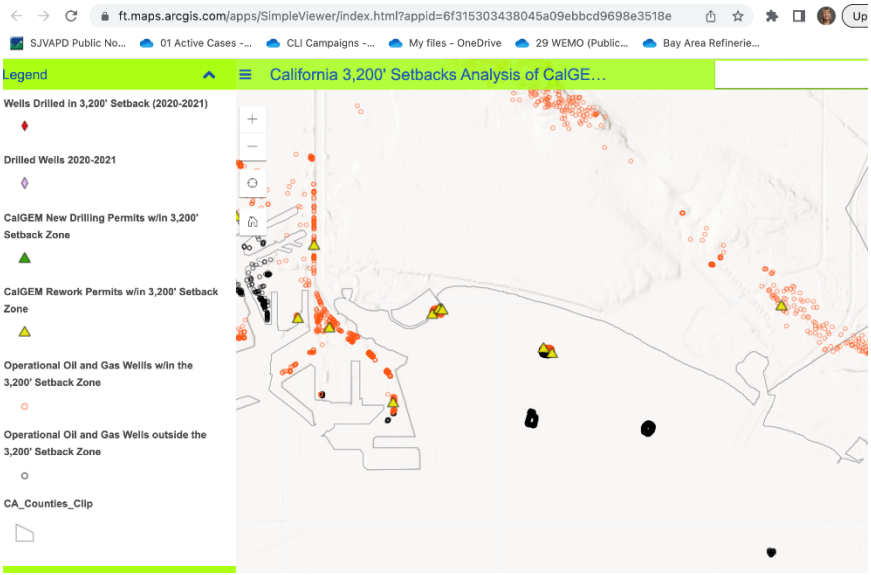
The projections for oil and gas production in the Program Plan, and yearly maximums for redrills in FY 2025, assume that the 2022 legislation establishing 3200-foot health and safety setbacks from oil and gas operations—Senate Bill 1137 (SB 1137)—will not take effect and that CalGEM will issue permits for redrilling wells between now and 2028. While implementation of SB 1137 is currently paused because of a forced ballot referendum sponsored by the oil and gas industry that seeks to overturn the law, the City should not assume the absence of setbacks and instead should incorporate these necessary protections into its planning.

Schedule 1B indicates that up to 22 redrills on Island Grissom and up to 6 redrills on Pier J for oil production will be completed in FY 2024 alone. All of these wells are within the buffer zone that will be in place if SB 1137 remains law. This zone represents areas where Long Beach residents and visitors live, work, and recreate. Ongoing operations in these areas already pose significant public health harms and these harms will be exacerbated by the expanded production proposed by the five-year Program Plan.

There are an estimated 140,000 individuals living within 3200 feet of Long Beach oil and gas wells (a number that encompasses the entire oil field).[163] Of those, 101,498 (72.4%) identify as non-white, including Latina/Hispanic origin, which is slightly higher than the citywide average (71.7% non-white).[164] The map below depicts oil and gas operations from the LBU that are within the proposed setback zone.[165]

[160] *Id.* § 15130(b).
[161] *Id.* § 15130(a).
[162] *Citizens to Preserve the Ojai v. County of Ventura*, 176 Cal.App.3d 421, 431 (1985); *see also Friends of the Eel River v. Sonoma County Water Agency*, 108 Cal.App.4th 859 (2003).
[163] FracTracker, City of Long Beach Oil and Gas Extraction (April 1, 2022) at 2.
[164] *Id.*
[165] FracTracker, California 3,200' Setbacks Analysis (zoomed in for LBU), https://ft.maps.arcgis.com/apps/SimpleViewer/index.html?appid=6f315303438045a09ebbcd9698e3518e.

It is well-documented that there are adverse health outcomes for those living near oil and gas wells. In a 14-year analysis of air quality across California, Stanford researchers observed higher levels of air pollutants within 2.5 miles of oil and gas wells, likely worsening negative health outcomes for nearby residents.[166] Their data aligned with other smaller-scale studies that measured emissions from a handful of wells.[167] A panel of medical experts reported consistent findings of health impacts at distances less than one kilometer and recommended 3200-foot setbacks paired with pollution control measures on existing wells to account for significant impacts to perinatal and respiratory health in humans.[168]



The city manager's hesitation to embrace the health and safety buffer zone is concerning and runs counter to the city's 2030 strategic vision stating the intention to "improve the health of our environment and quality of life for all Long Beach residents and begin to remedy longstanding social, economic and environmental inequities . . . . All communities will have access to clean air, clean water, flourishing ecosystems, and protection from extreme weather events."[169] Fourteen organizations representing environmental justice, public health, business, and the environment have submitted a letter to the city manager expressing support for health and safety buffer zones and urging the city to reverse advocacy efforts casting doubt on the state law.[170]

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[166] Gonzalez, et al., *Upstream oil and gas production and ambient air pollution in California*, S. of the Total Envt., Vol. 806, Part 1, (Feb. 1, 2022), 150298, https://www.sciencedirect.com/science/article/pii/S0048969721053754.
[167] *Id.*
[168] PSE Berkeley, Response to CalGEM Questions for the California Oil and Gas Public Health Rulemaking Scientific Advisory Panel (Oct. 1, 2021), https://www.gov.ca.gov/wp-content/uploads/2021/10/Public-Health-Panel-Memo.pdf.
[169] City of Long Beach, 2030 Strategic Vision at 52, https://www.longbeach.gov/globalassets/city-manager/media-library/documents/2030-strategic-vision.
[170] *See* Sign-on letter re: SB 1137 (March 21, 2023), attached herein.

In order to protect the health of residents and to prepare for the implementation of SB 1137, Long Beach's plans should not include any projects (including redrills) within setback zones, which includes on Island Grissom, Island White, or Pier J. And the city should move expeditiously to phase down operations within the 3200-foot health and safety buffer zone.

K. Tribal consultation

Several tribal entities of the Acjachemen and Tongva nations hold critical cultural information regarding the cultural sites affected by the continued development of oil infrastructure, continued extraction, and continued threat of oil spills that threaten to impact these cultural resources and sacred sites. Oil spill response efforts without consultation with these entities risk further impacting cultural resources. A new CEQA review should be conducted considering these impacts and incorporating revisions of the oil spill response plans to alert and consult with Tribes.

CONCLUSION

Thank you for considering our comments. All the references cited herein are available at https://centerforbiologicald-my.sharepoint.com/:f:/g/personal/celkins_biologicaldiversity_org/EnKgnCor99lGuuLZ09VgLJEBe1qZCkB-L3ApueGIIPlwhQ?e=glc5NS. We will also hand-deliver a USB flash drive containing all references to the city clerk at tonight's meeting.

Victoria Bogdan Tejeda
Staff Attorney, Climate Law Institute
Center for Biological Diversity
vbogdantejeda@biologicaldiversity.org

Emily Jeffers
Senior Attorney, Oceans Program
Center for Biological Diversity
ejeffers@biologicaldiversity.org

From: Indira Galvez
To: CSLC CommissionMeetings
Subject: Item 71
Date: Monday, April 3, 2023 1:22:32 PM

Good Afternoon,

Please find my written comment about Item 71:

"The State Lands Commission should use its authority to revise the Long Beach Unified Program Plan to phase out production in 5 years and deny development within the 3200 foot health and safety setback zone.The State Lands Commission should also direct an environmental review under the California Environmental Quality Act. The climate crisis is real and this plan would not only set back Long Beach, it will set back California with how much oil drilling this plan involves. Please prioritize our public health. "

--
Indira Galvez, MPA, MHS

From: karen kirschling
To: CSLC CommissionMeetings
Subject: Item 71
Date: Monday, April 3, 2023 11:54:06 AM

Dear State Lands Commissioners,

The following is the letter we sent to the city of Long Beach regarding their very disappointing stance on oil drilling within city neighborhood areas. It is my understanding that they are passing the responsibility on to you, and so I am now sending this to you. The oil industry has been allowed to drill for oil near Long Beach community hubs (parks, schools, etc.) for far too long, and it is beyond time for Long Beach City officials to finally take a step to protect its communities from the overwhelming amount of oil drilling citywide.

Letter follows:

I am writing in support of Senate Bill 1137 (SB 1137) and setbacks between oil and gas wells and sensitive sites. I am deeply disappointed to see your office's letter to Governor Newsom in defiance of SB 1137 and your continued public denouncement of these critical health and safety protection zones for your constituents.

This stance runs contrary to well-established science and fails to accurately represent the voices of the Long Beach community. We encourage you to retract your statements on SB 1137 and prohibit new drilling and rework permits within the 3,200 foot setback zone while we await the results of the referendum.

Neighborhood oil drilling exposes Long Beach residents to toxic chemicals and smog-forming gasses, which can cause respiratory illness, cardiovascular disease, leukemia, lymphoma, lung cancer, nervous system damage, reproductive and endocrine disruption, birth defects, and premature death. Neighbors adjacent to urban oil drilling suffer the most from these health effects. Even once a well is no longer active, it can continue to leak oil, methane, and other gasses, leaving nearby communities at continued risk.

An estimated 140,138 Long Beach residents live within 3,200 feet of an operational oil and gas well within the city limits. This amounts to about 30.2% of the population. Of those, 101,498 (72.4%) identify as non-white, including Latina/Hispanic origin.

Communities of color and low-income households are most affected by neighborhood oil drilling. Many neighborhoods with urban oil drilling operations have already been identified as high-risk because of their exposure to other environmental hazards and pollution.

The stance on setbacks as currently set by your office is allowing for the expansion of an already catastrophic public health crisis.

Instead of using city resources fighting these overdue protections, we urge you to use your time and resources to adapt to the health and safety standards that Long Beach residents need; standards that protect basic human health and the right to breathe clean air.

Thank you,
Karen Kirschling
concerned CA resident

From: Constance May
To: CSLC CommissionMeetings
Subject: ITEM 71
Date: Monday, April 3, 2023 9:45:27 AM

Hello,

The Program Plan should be revised to align with a 5 year phaseout of oil drilling, but the current plan would significantly worsen the global climate crisis and local health crisis

This 5 Year program outlines a **ramping up of oil production to 26.2 million barrels of oil over the 5 year period, compared to 25.5 million barrels of oil in the previous 5 year plan. Gas production is also expected to increase significantly.** But the world's climate scientists say we need to decrease fossil fuel production deeply and rapidly to avoid the worst impacts of climate change.

It is morally indefensible to continue to develop oil and gas operations that poison people within the health safety radius strongly recommended by health professionals.

Thank you,
--
Constance May (Resident of Long Beach District 2)

April 4, 2023

California State Lands Commission
100 Howe Avenue, Suite 100
Sacramento, CA 95825

cslc.commissionmeetings@slc.ca.gov

SUBJECT: 4/7/2023: Comment on Item 71 Long Beach Unit Program Plan (2023-2028) and Annual Plan

Dear Members of the State Lands Commission,

I am writing on behalf of the Sierra Club and our thousands of members and supporters in Long Beach regarding the City of Long Beach's five-year Program Plan for the Long Beach Unit, which covers years 2023-2028.

The plan increases oil drilling activity and projects an increase of oil production over the previous five year plan. Much of this oil drilling is set to take place within the 3200 feet buffer zone deemed unsafe by the state in their passage of SB1137. More and more research has come out, since the 1960s when the agreements between the State Lands Commission and the City began, showing that living near oil drilling leads to a host of public health impacts including asthma, birth defects and cancer.

Much of the community came out to oppose the plan last month when it came to the Long Beach City Council. (Sierra Club's 700 comments are in the other attachment).

The plan was voted on March 21st, 2023, two days before it was due to be turned in. Just one day after the United Nations Intergovernmental Panel on Climate Change published a damning report showing that we must keep all oil in the ground immediately if we want to prevent the worst of climate change.

Below are some comments from the meeting:

"... so really the way the statute sets this up is that the city puts together the optimized plan, submits it to the state lands commission, then **the state lands commission has a very clear right to make changes to it and send it back to the city** and assuming it gets submitted to them in the next 2 days, that will start the clock running, the state will have, I believe it's 45 days within which to take action and make revisions to it if they want to"
Richard Anthony, Principal Deputy City Attorney
—-
"Is the deadline really in 2 days?"

Mayor Richardson
—-
“I don’t know if there’s much more to be said, it sounds like we’re handcuffed here” - *Councilmember Al Austin*

We ask that you use your authority to revise the LBU Program to phase out production in five years and deny development within the 3200 foot health and safety setback zone and direct and environmental review.

Best,

Nicole Levin
Campaigner, Sierra Club Beyond Dirty Fuels

Long Beach City Council and Staff
411 W. Ocean Blvd.
Long Beach, CA 90802

March 21, 2023

Re: Long Beach's "5 Year Plan" item #8 on today's agenda

Dear Long Beach Decisionmakers,

I am writing in support of Senate Bill 1137 (SB 1137) and setbacks between oil and gas wells and sensitive sites. I am deeply disappointed to see your office's letter to Governor Newsom in defiance of SB 1137 and your continued public denouncement of these critical health and safety protection zones for your constituents.

This stance runs contrary to well-established science and fails to accurately represent the voices of the Long Beach community. We encourage you to retract your statements on SB 1137 and prohibit new drilling and rework permits within the 3,200 foot setback zone while we await the results of the referendum.

Neighborhood oil drilling exposes Long Beach residents to toxic chemicals and smog-forming gasses, which can cause respiratory illness, cardiovascular disease, leukemia, lymphoma, lung cancer, nervous system damage, reproductive and endocrine disruption, birth defects, and premature death. Neighbors adjacent to urban oil drilling suffer the most from these health effects. Even once a well is no longer active, it can continue to leak oil, methane, and other gasses, leaving nearby communities at continued risk.

An estimated 140,138 Long Beach residents live within 3,200 feet of an operational oil and gas well within the city limits. This amounts to about 30.2% of the population. Of those, 101,498 (72.4%) identify as non-white, including Latina/Hispanic origin.

Communities of color and low-income households are most affected by neighborhood oil drilling. Many neighborhoods with urban oil drilling operations have already been identified as high-risk because of their exposure to other environmental hazards and pollution.

The stance on setbacks as currently set by your office is allowing for the expansion of an already catastrophic public health crisis.

Instead of using city resources fighting these overdue protections, we urge you to use your time and resources to adapt to the health and safety standards that Long Beach residents need; standards that protect basic human health and the right to breathe clean air.

1. Lisa Atkinson
Zip Code: 90230
Air Quality and Water quality in Los Angeles area including all surrounding counties is critical stage of needing to improve. The next generation needs more health than the last generation.

2. Allie Bussjaeger
Zip Code: 90712
As a CSULB graduate and someone who works out of an office in Long Beach, I feel strongly that it is critical the City phase out oil drilling ASAP.

3. Amber Lara
Zip Code: 90804
As a family medicine physician and a resident of Long Beach, I am very much aware of the environmental and health impacts of drilling in communities. End oil drilling now!

4. Christina Farnsworth
Zip Code: 93950
As a former Long Beach resident and California native, it is important to me that we not elevate the desires of HUGELY profiting oil companies above the health and safety of the human and other community.

5. Steve Askin
Zip Code: 90804
As a Long Beach resident I want our city to stop poisoning our planet.

6. Stephanie Felix
Zip Code: 90815
As a new mom and new resident to Long Beach, I was super disappointed to hear our pediatrician say that our child has to acclimate to living in one of the most polluted cities in the country. I knew Long Beach air quality wasn?t great but I didn?t realize it?s that terrible. Beyond my personal experience what we do now to combat climate change matters so much and what we do now to right the wrongs against marginalized communities matters. I believe this city can and should rise to the occasion and be leaders for change and justice.

7. Lorenzo Gonzalez
Zip Code: 90043
As a physician treating many Long Beach residents, We can no longer ignore the health ramifications of chronic exposure to oil drilling. It is time that we use government for its purpose of protecting the people. Therefore, facing out oil drilling can no longer wait.

8. Marilyn Eng
Zip Code: 91765
As a resident of Southern California this is very important to me. Please begin transitioning away from fossil fuels and make Long Beach cleaner. Fight climate change NOW.

9. Linda Hernandez
Zip Code: 90703
As a teacher in the area for the past 50+ years, I think it is time to stop exposing students and their families to these dangers!

10. Sadie Johnson
Zip Code: 90802
As a voting resident of Long Beach, O want my city council members to being looking out for the wellbeing of my neighbors and myself! Please vote to start curbing and eliminating oil wells in our neighborhoods.

11. Varenka Lorenzi

Zip Code: 90814
As both a Long Beach resident and an environmental toxicologist,
I find it unacceptable that the City is still allowing oil drilling near urban areas. The toxic effects of chemicals leaking out are now clear and the health of residents should come before profit.
We cannot wait any more, every day that goes by, is one more day breathing in carcinogenic compounds.

12. Barb Hensleigh
Zip Code: 90027
Because we all live on one planet and what you do in Long Beach effects us all. Please do the right thing.

13. Norma Williamson
Zip Code: 90703
Climate Change is a clear and present danger. We have renewable energy technologies that make it possible to live a comfortable modern lifestyle with oil or gas. Ban oil drilling!

14. Rachel Cristy
Zip Code: 95670
Climate change is already causing deadly disasters around the world. If we are to have any chance of mitigating the damage, we must immediately stop the extraction of fossil fuels.

15. Ted Stolze
Zip Code: 90815
Deal with the climate crisis now?and locally!

16. Scott Holmes
Zip Code: 90815
Do need more harmful pollutants in Long Beach. Fossil fuels are going by the wayside.

17. Richard Ramirez
Zip Code: 96143
Drilling for oil in Los Angles is not only anti-environmental, it's done in districts of color more than where Alien Euro-Americans reside, Environment racism is as real as it is wrong.

18. Tara Gilmaher
Zip Code: 91020
Drilling in Long Beach has created neighborhoods of sick kids and families for too many years. Climate change, social & ecological justice mean we should stop drilling for fossil fuels, and especially in harmful ways that threaten BIPOC people and wildlife.

19. v and b Jones
Zip Code: 90510
Enough carcinogenic fossil fuels.

20. Kayla Partridge
Zip Code: 91342
Enough pollution, and poor drilling practices.

21. Tina Bowman
Zip Code: 90803
For our health and the planet's health, it's time to move away from oil.

22. Daren Black
Zip Code: 90066
Fossil fuel technology is ANTIQUE!
It is past time to end all drilling for fossil fuels!

23. Jan Hansen
Zip Code: 92122
Fossil fuels are the past; renewables are the future!

24. Danett Abbott-Wicker

Zip Code: 92865
Global crop failures hit at 1.5-2 degrees C/Billions die at 3C/most humans dead at 4C/Earth uninhabitable at 6C/We're heading for 1.5 C by 2025/2C by 2035/4-6C by 2075

25. Diane Meyerson
Zip Code: 90740
Health and wellness matters!!!

26. Chris Weidenbach
Zip Code: 94611
Health over short-term profit EVERY TIME!

27. Louis Cangemi
Zip Code: 90066
Here is your opportunity to conform to the phasing out of oil drilling in Southern California and help us live with cleaner air.

28. Cynthia Kameya
Zip Code: 90808
I am a cancer survivor and I believe this can contribute to causing cancer in some individuals.

29. Ian Beavis
Zip Code: 90803
I am a LB resident. The smell and noise is simply unacceptable.

30. Cory O?Neill
Zip Code: 90804
I am a resident of Long Beach and want to live and raise my children in a healthy environment

31. Val Lopez
Zip Code: 90808
I am against oil drilling in Long Beach, especially in areas close to public spaces-schools, parks, and residential areas.

32. Eugenie Lewis
Zip Code: 90278
I am concerned about the adverse health impact of oil drilling on people who live nearby. Also we need to focus our efforts on renewable energy sources and phase out fossil fuels.

33. Louis Cangemi
Zip Code: 90066
I am constantly coughing up mucus in my system due to chemicals in the air. It makes a difference to have cleaner air to breathe.

34. Jane Affonso
Zip Code: 90278
I am involved with the South Coast Interfaith Council and we believe the drilling should be phased out to protect front line communities and to address climate change.

35. Christine Miller
Zip Code: 92127
I can't believe this is still going on in beautiful Long Beach. Enough! Time to move forward on clean energy!

36. Laura and Paul Muenchow
Zip Code: 90266
I care about the planet and all of the environmental issues caused by fossil fuels. We need to turn to alternatives now. Bye Bye oil drilling. It's not needed or wanted. thank you

37. Barbara Mais
Zip Code: 90807
I don't know if this drilling benefits our community.

38. Jim Stewart
Zip Code: 90813

I don't want our Long Beach officials opening wanting our residents to be poisoned! The science report is clear, people living withing 3200 feet of wells have MUCH higher illness rates!

39. Janice Sampson
Zip Code: 90815
I feel it is very important to move forward on cleaning up our air, water, and land so our children have a happy and healthy life..

40. Diana Parmeter
Zip Code: 90805
I grew up in LB and moved back 15 years ago. Oil is what built LB and is why the city originally grew and prospered. But we need to stop polluting the air, water and ground which is the byproduct of the drilling/fracking process. Fossil fuels are finite and killing us and they need to be obsolete. Thank you for your attention to this urgent matter!

41. George Bates
Zip Code: 96052
I grew up surfing beautiful Southern California beaches. We must protect them as we also stop the burning of all fossil fuels and their terrible impact on global warming

42. Leo Olofsson
Zip Code: 90804
I have a family here. The air gets polluted by drilling and the damages are seen much later.

43. Rachael Lehmberg
Zip Code: 90740
I have seen the effects of our bad air on friends, family and even plants. Please protect us!!

44. Peggy Haught
Zip Code: 92506
I haven't been to Long Beach in forever but when I did, I found it to be very dirty Beach, please don't drill there anymore. It is filthy enough, thank you, Peggy Haught

45. Serena Palmer
Zip Code: 92801
I just want to ensure a safe, healthy environment for the future kids of this planet. Enough of the oil drilling near our schools, and pollution in our air.

46. Supun Edirisinghe
Zip Code: 90746
I live close to Long Beach in Carson. The surrounding areas are affected by so much drilling and over developed infrastructure for gas and oil! I hope they also help clean up Signal Hill and especially the area from Wilmington to Carson that's been abused by drilling companies for decades. They have been ruining the environment and need to stop and help clean up and restore as well!

47. Antoinette Nolan
Zip Code: 90710
I live in Harbor City and worry about the effects oil drilling sites have on my health. It's time for a change, to find solutions the protect health, to phase out oil drilling, and to help workers find jobs in climate-protecting rather than climate-destroying energy industry. Now is the time for the City Council to take a major first step into a clean future.

48. Melinda Cotton
Zip Code: 90803
I live in Long Beach and care about my City and the people who live in it. We have more than 100 additional oil wells proposed for the Los Cerritos Wetlands just two miles

east of where I live. Hundreds of new homes are proposed within a quarter of a mile of those new proposed wells. This is dangerous and unnecessary and with an earthquake fault running directly under the Wetlands, indeed an additional dangerous situation and destructive to the Wetlands we're trying to save.

49. Denis Berardo
Zip Code: 90807
I live next to a oil pump

50. Jim Peugh
Zip Code: 92106
I lived in Long Beach for much of my childhood. I can remember getting black oil stains on my legs when we went to the beach. Swimming in that oil tainted water was bad for my health. Stopping will also reduce global warming. It is way past time to stop,
Jim Peugh

51. Merrill Bobele
Zip Code: 92122
I lived near Long Beach for27 years before moving to San Diego, which is close. enough. I remember Long Beach a attending Long Beach City College I was benefited by the oil wells. But Global Warming and Climate Changed the benefits to be harmful ! Oil drilling and the use of petroleum must end and with to renewable energy sources.

52. debbie gibson
Zip Code: 90405
I love the ocean and the amount of toxins we have already put into them is enough - it needs to stop. Not only that but drilling for new sources of a non renewable finite resource is just plain not healthy! We need to use our financial resources to discover new renewable resources and build up the ones we already know.

53. Sherrill Futrell
Zip Code: 95618
I NEVER GO THERE ANYMORE. THE WATER'S FILTHY AND OIL CRAP'S EVERYWHERE.

54. Linda Stock
Zip Code: 90630
I own half of an oil well and I believe this issue is so important that I am willing to forego the revenue from it to help curb the harmful effects on those who live near it.

55. Pete Marsh
Zip Code: 90814
I realize that this action is largely symbolic, because the downstream consumers of oil drilled in Long Beach can - under present market conditions - procure their fossil products from many other sources.
And yet, there are two tangible benefits:
(1) The more rapidly the city phases down oil production, the more rapidly we will purge the effects of the oil industry's "dark money" on our local decision making.
(2) If Long Beach phases down rapidly, AND other sources do also, the global supply of fossil fuels will tighten rapidly, which is exactly the outcome we need in order to provide a prosperous economy and safe, healthy life for our children and grandchildren.

56. Ashley Craig
Zip Code: 90266
I recently purchased a house in Long Beach, and my husband and I plan to make Long Beach our permanent family home. We are avid environmentalists and are very concerned about the climate crisis. I urge

the City Council to do the right thing and phase our oil drilling in Long Beach!

57. Jane Illades
Zip Code: 92103
I remember seeing these as a child driving though Long Beach and thinking how ugly they were. Little did I realize at that age, the contamination and problems they caused their near neighbors: actual PEOPLE who were affected by them in so many ways.
It IS time to phase them out and be rid of them forever!

58. Kayla Andersen
Zip Code: 91101
I support the phase out of oil drilling in Long Beach county! Oil drilling is harmful to our vulnerable communities and the environment - we can do better.
Follow in the historic footsteps of Culver City and Los Angeles and phase out oil drilling in Long Beach now!

59. Siena R
Zip Code: 91377
I value the lives of our generations and future ones, and in order to ensure that we have a habitable planet to live on, we need to curb greenhouse gas emissions from burning fossil fuels. Banning oil drilling in this important city is a crucial step in California?s clean energy transition.

60. Sara Hayes
Zip Code: 90814
I was under the impression that this drilling was supposed to stop because of laws passed here in California. This has been needed for a very long time. This drilling negatively especially affects individuals with lung issues, both old and young. This should NOT be a big part of the budget. Our lives should take precedent.

61. Joshua Goldstein
Zip Code: 90089
I write to encourage Long Beach leaders to take this necessary and historic step to phase out all oil drilling in Long Beach. As a life-long visitor to Long Beach's beautiful beaches and attractions, I know Long Beach to be a beautiful area. But Long Beach residents who live or go to school near oil wells experience a much less beautiful side of the city. Please let them live in a city as wonderful and healthy as I get to visit.

62. Thomas Chang
Zip Code: 90808
If you love Long Beach a clean transition from an extractive economy is critical. Please be a leader in the energy field by moving forward with phasing out oil drilling in Long Beach. Precedent wells and refineries do not need additional developments. We need to shift our mindsets and focus for a sustainable future generation. Please research the hard done to families and children who reside near oil wells and understand the decisions you make today will affect future generations. Thank you!

63. Ashley Flynn
Zip Code: 90802
I'm a long Beach resident and the air pollution, caused by the diesel trucks at the port and also from oil drilling, caused me to develop asthma. This led to me having a more difficult time when I contracted COVID. Now that we have a deadly respiratory virus running loose, as well as climate change underway, we need to move away from fossil fuels!!

64. Claire Broome
Zip Code: 94708

I'm a public health physician. Please prioritize the health of your communities.

65. Diana Waters
Zip Code: 90277
I'm fed up with breathing this noxious toxic and carcinogenic air. Fed up with the high and increasing rates of cancer in our communities.
You wonder why Long Beach is considered a slum compared to other coastal cities in California? This is the major reason. BAN IT, RIP IT OUT.

66. Alexander Kurz
Zip Code: 92867
It is time to change direction and phase out fossil fuels. California should be leading the world in renewables.

67. Andrew Milhan
Zip Code: 90807
It is time to make true progress against climate change by stopping the use of fossil fuels.

68. Janice Graef
Zip Code: 95746
It is time to phase out the oil drilling in Long Beach and see what can be done to take down those ugly oil drills. They are a blight to the community.

69. Marianne Buchanan
Zip Code: 90814
It is well past time for Long Beach to face the harsh reality that drilling for oil and gas is harmful to the health and happiness of many Long Beach residents. When you take into account the drilling itself, the noxious air from oil truck emissions, freeway traffic and oil refineries, O&G is a public health hazard that must be addressed. Long Beach has a Climate Action & Adaptation Plan with goals that cannot be reached if we continue down this fossil fuel path!

70. Kenneth Giannotti
Zip Code: 94550
It takes big and bold steps to save our planet. Please eliminate our dependence on oil.

71. Linda Engel
Zip Code: 95407
It?s not healthy for the environment.

72. Adam Gomez
Zip Code: 90805
It's time long beach focuses on new energy. We have no excuses to continue harming our communities.

73. Gwen Shaffer
Zip Code: 90803
Just last Saturday, my son and I joined a guided a walk sponsored by the Los Cerritos Wetlands. It is so wrong that oil drilling continues to take place on this land that is critical for groundwater purification, migratory birds and other habitat. In addition, our reliance on fossil fuels is killing the planet.

74. Cherie Holcomb
Zip Code: 94605
Keep it in the ground! The recent IPCC report shows that we MUST stop all new fossil fuel infrastructure development. In addition we MUST transition away from fossil fuels, , making significant progress on this in the next 2 years. We are out of "tomorrows". The time for action is today.

75. Jean Riehl
Zip Code: 94533
Let Long Beach Breathe !

76. Ryan Malone
Zip Code: 90035
Let us lead the country and the world through our actions in helping to do what?s right to save our planet. A renewable and sustainable energy solution is available and ready to be implemented. Let?s do it.

77. Jim Franzi
Zip Code: 95629
Let's head in the right direction

78. Anna Christensen
Zip Code: 90803
Long Beach has been an oil town for a century and shows no sign of abandoning this status even as its nothing to brag about anymore. As the seas rise due to the emissions from drilling, transporting, refining , and consuming oil fossil fuel, the City has yet to reduce our own dependency on oil and gas revenues. Instead we readily approve expanded drilling in sensitive wetlands and increased storage at our Port. We get to zero emissions by adding new bike lanes and green buildings to offset the deteriorating health of our most vulnerable residents exposed to toxic emissions from active and abandoned wells, refineries, and the import and export of fossil fuels through our port. The fact that elected officials and even the LBUSD continue to accept donations from fossil fuel companies and lobbyists means that residents have not been able to count on them to advocate for what is really needed most - to clean up 100 years of environmental damage, and stop making more.

79. Anne Proffit
Zip Code: 90802
Long Beach is addicted to oil and this must stop now. No more drilling; no more health issues for the public that puts you in office. Not only does oil drilling need to be phased out at our earliest convenience, but we must move forward with innovative ways to replace the Tidelands money that will run dry once oil is where it belongs. Underground.

80. Karen Jacques
Zip Code: 95811
Long Beach is horribly polluted. The City Council needs to do everything in its power to phase out drilling immediately and protect and preserve the health of its constituents.

81. Mary Barton Mayes
Zip Code: 90814
My entire family lives here--and we don't like the health or environmental implications of oil drilling here!! That's why we bought solar panels, and drive high-mileage vehicles, recycle anything possible, and avoid plastic. It's time our City takes a bold and brave step to help reduce carbon pollution by banning oil drilling NOW.

82. Chuck Barrick
Zip Code: 90804
My family has been living, working, going to school, and running businesses in Long Beach for nearly 100 years. Although the city has made great strides in environmental cleanup and protection, we need to do more. Please ensure that LA County's second largest City is setting the important example of putting our people and our properties first with this important initiative.

83. Helene Whitson
Zip Code: 94709
My husband grew up in Long Beach. I remember going there to visit his parents and going by what I think is called Oil Hill. It

stank and was disgusting. The time for extracting fossil fuels is over. The drilling process exposes people living nearby to harmful chemicals, and it makes a total mess of the land on which the drilling takes place. It's time for green and renewable energy, as well as turning the oil drilling areas into something compatible with life, not the extinction of it.

84. V & B Jones
Zip Code: 90508
No more carcinogenic, climate-hijacking fossil fuels please.

85. Edward Costello
Zip Code: 90402
No more drilling for oil & gas

86. Allison Slay
Zip Code: 90814
No more oil to decrease the world temperatures

87. Edward Costello
Zip Code: 90402
No NEW oil drilling in Long Beach.

88. Linda Morgan
Zip Code: 94806
Oil drilling doesn?t belong in a city.

89. Elizabeth Gonzalez
Zip Code: 90805
Oil drilling in residential areas is toxic. It's long overdue to end it.

90. Jessie Gaskell
Zip Code: 90042
Oil drilling is a public health crisis that disproportionately affects low-income residents. I support the City?s steps to expedite the phase out of drilling and strongly encourage the Council to act on this with the urgency it requires.

91. Ann Cantrell
Zip Code: 90808
Oil drilling pollutes the air and water; many wells are on an earthquake fault; oil spills and pipeline leaks can destroy wetlands habitat.

92. Sara Bruce
Zip Code: 95110
Oil is potentially ruining the future for all of us, and drilling is ruining the present for some of us. It is time for the oil industry to re-assess its values!

93. Susanna Marshland
Zip Code: 94707
Oil is ruining the planet and our communities.

94. James Hines
Zip Code: 90814
Oil Slicks like the recent one in Long Beach and last year's Orange County spills highlight the fact that fossil fuel production has no place, anywhere in California, but especially offshore and near our beaches. How many more oil spills and fossil fuel accidents do we need until the city and the state begins to prioritize public health and the environment?

95. Alice Nguyen
Zip Code: 95136
On May 8, CA produced more than enough renewable electricity to power the entire state. We don't need or want dirty fossil fuels.

96. Sharon Fritsch
Zip Code: 95928

Our beaches have suffered from too much pollution.

97. Susan Perez
Zip Code: 90731
Our kids deserve clean air and water! Childhood asthma and toxic air and water are preventable. End this!

98. Jeffrey Wang
Zip Code: 90012
Please act with urgency!

99. Patricia Essick
Zip Code: 93023
Please do what is right for our environment and the health of your citizens.

100. Abbie Bernstein
Zip Code: 90069
Please don't subject less affluent citizens to environmentally dangerous projects in their backyards.

101. Catherine Ronan
Zip Code: 90066
Please help lead the way to phasing out oil drilling in our state. The climate crisis demands it. Thank you!

102. Christina Mancebo
Zip Code: 90808
Please invest in clean energy that is sustainable. Oil drilling is neither.

103. Emily Canata
Zip Code: 90814
Please phase out drilling in Long Beach and restore our natural environment. This will make Long Beach more beautiful and safer for everyone in our community. It will make the land more valuable and would be something we could brag about-look how we care about our environment and actually did something about it that everyone can understand and see.

104. Rachelle Sartini Garner
Zip Code: 90802
Please phase out drilling in our communities, and stop valuing profit over the health of the people of Long Beach. Highly support transitioning workers into jobs that allow them to fully care for their families without putting themselves at risk, and that can set them up with crucial skills needed as we transition into sustainable forms of energy production. Climate change is already affecting our state drastically, please be leaders that work swiftly and proactively to improve and protect the lives of your residents.

105. Austin Rice
Zip Code: 96130
Please reduce environmental & societal harm & risks by incrementally shutting down drilling in/near Long Beach, CA. Thank you.

106. Bruce Allen
Zip Code: 92075
Please stop ALL oil drilling in Long Beach to stop contributing to carbon-dioxide emissions that occur when oil & gas are burned. It is critical that we stop these emissions and transfer our energy sources to clean energy like hydro dams, solar farms and wind farms!!!

107. Anna Hornick
Zip Code: 94401
Please stop pollution from oil drilling. As a California resident, I find highly important that you pass this measure. Thank

108. Mindy Thomas
Zip Code: 90803

Please think of the environment-by your wallets

109. Dalila Hardwick
Zip Code: 90803
Please, please, please... stop the oil pumpjacks in Long Beach. Many are extremely close to homes and businesses, and some are not far from schools.
The fumes are poisonous and fumes travel far and wide.
We already have microplastic in our lungs, carcinogens from all kinds of poisons that should be illegal. Do contribute to making the air we breathe less noxious Hopefully, one day not too far most chemicals that are now "legal" will be banned and substituted by things that do not kill us.
Thank you
Dalila Hardwick

110. Lionel Mares
Zip Code: 91352
Please, protect impoverished neighborhoods.

111. Madlyn Monchamp
Zip Code: 93111
Protect our climate

112. Elizabeth Moreno
Zip Code: 95117
Quickly phasing out (5 yr.) of oil drilling in Long Beach would be a win-win, for residents' health and the health of the planet. Do it, Long Beach!

113. Marti Roach
Zip Code: 94556
Scientists in the lates IPCC report said that in order to prevent unimaginably challenging negative tipping points for our climate, we must not have new fossil fuel infrastructure and we must rapidly phase out burning fossil fuels. Wells release methane, a highly potent ghg that warms the planet fast. Even more importantly, the health benefits of using clean energy and avoiding health risks from air, water and soil contamination of wells are high. We have a healthy way for our energy future. Let's put our human energy into this transition to a clean energy economy that is fair to workers, communities and all.

114. Martin Holman
Zip Code: 90806
So much wealth has been made removing oil from the ground in Long Beach, it's a shame that none of that wealth can stand up and say ENOUGH!

115. Sherrill Futrell
Zip Code: 95618
SOMEONE MUST BE ON THE TAKE. THIS HAS GONE ON FOR DECADES.

116. Michael Wauschek
Zip Code: 90703
Standing rock is everywhere

117. Eanthy Zeltman
Zip Code: 92308
stop drillinmg where people live.

118. Kathleen Monteleone
Zip Code: 92530
STOP oil drilling today! It truly saddens me on a daily basis that our precious Mother Earth has been destroyed, ravaged, and abused because of greedy, heartless, business men. Our planet, wildlife, and humanity take precedence over money! STOP corporate greed now!

119. Karl Eggers
Zip Code: 90815

Stop selling Long Beach residents future for money today. The city is already on the hook for millions of dollars to properly abandon wells that their bankrupt commercial (private) partner is unwilling to fund. And are you using oil money to offset effects of climate change in the city, or just ongoing expenses (e.g., city employee retirement and health expenses).

120. Michael Mansfield
Zip Code: 94702
Surely we can do better and think more long-term.
More jobs and healthier communities await your leadership.
Peace.
Michael Mansfield

121. Kennedy Trawick
Zip Code: 90503
The citizens of Long Beach, and quite frankly the world, don?t deserve to be subjected to the detriments cause by the oil industry. Please put lives over profit.

122. Martin Holman
Zip Code: 90806
The City of Long Beach has long benefited from oil drilling. It really is past time to stop.

123. Cindy Koch
Zip Code: 90807
The entire world needs to phase out oil drilling if we want to survive decades to come! This should be important to EVERYONE!!

124. Marie Gaillac
Zip Code: 92868
The Long Beach community should become a model of a community that can transform itself from being an anti environment community to a model one. It is fortunate in its placement , climate .and potential.sgenic beauty.

125. Joshua Trotter
Zip Code: 90026
The most recent IPCC reports make it clear that transitioning away from fossil fuels as quickly as possible is essential. Now is the time for action.

126. Deborah Weinrauch
Zip Code: 90230
The oil fields are dangerous to everyone's health and safety and belong to a bygone era.

127. Aaron Valdespino
Zip Code: 90806
The oil island's are a huge eye sore to our beautiful ocean. The capped oil wells are also leaking over time and are NEVER maintained. Pure disregard and negligence by the politicians agreeing to these oil wells and islands. Please do what's best for your stakeholders and protect the land and ocean we love.

128. Daniel Nakashima
Zip Code: 90806
The tax per barrel is too low also. Raise the tax until it?s no longer profitable, then convert these sites
to solar and wind. There is no time to wait for Long Beach?s children.

129. Tab Buckner
Zip Code: 94117
The time to phase out Long Beach oil drilling is NOW!!!

130. Elizabeth Zenker
Zip Code: 95501

There is far more than simple oil gain from this precious piece of Earth!

131. Lizann Keyes
Zip Code: 95062
There is no acceptable place for oil drilling in California. I took part in the huge clean-up in the early 70s after the giant oil spill that spurred the Earth Day Movement. Now, over fifty years later, we should not be negotiating for fossil fuel rights. Protect our precious earth! Phase out drilling now!

132. Elen Lauper
Zip Code: 90803
These are my beaches, my neighborhoods. Protect our waters.

133. G Friaz
Zip Code: 95112
They've drilled long enough!

134. F. Michael Montgomery
Zip Code: 95403
This affects the health of Americans, our environment, and our climate crisis!

135. John Candela
Zip Code: 94121
This is unacceptable! Neighborhood oil drilling exposes Long Beach residents to toxic chemicals and smog-forming gasses, which can increase the risk of severe chronic conditions including respiratory illness and cardiovascular disease.

136. Susan Brunelle
Zip Code: 90807
This needs to be done for the health of our entire community. The health of residents must be protected by it's elected representatives.

137. Frederick Cliver
Zip Code: 90815
To the best of my knowledge, the city and state aren't even getting severance fees. What is the upside of this for the populace, especially when we need to be weaning ourselves off of fossil fuels?

138. Daryl Gale
Zip Code: 90013
We all have to do our part to segue to cleaner energy!

139. Stacey Meinzen
Zip Code: 95405
We are in a climate emergency and neighborhood drilling is not OK. It's time to stop sacrificing our communities' health for fossil fuel executive pocketbooks. We have clean energy options and we should be focused on accelerating those - electrifying everything, not creating more toxic liabilities. There are already too many abandoned oil wells that taxpayers are on the hook to clean up. Let's stop stranding more assets and invest in a climate-safe future.

140. Gary Charles
Zip Code: 90813
WE AVE SO MUCH SOLAR AVAILABLE HERE AND THE PORTS FREE WIND ENERGY ALL DAY AND NIGHT I DON'T CARE IF THE OIL COMPANIES DON'T GET A BIG XMAS BONUS EVER AGAIN AFTER ALL THE SPILLS TAXPAYERS HAVE PAID FOR THE CLEAN UP.

141. Sydney Pitcher
Zip Code: 91945
We cannot forget about the oil spill that happened off the California Coast in 2021. This is a wake up call once again, reminding us of the dangers of offshore drilling. We are in a climate crisis and we?re running out of time to save our health and the planet

from irreversible, extremely catastrophic outcomes.

142. Sue Gupta
Zip Code: 94556
We do not need oil drilling in this age of climate crisis and sea level rise that is threatening the future of our communities. People definitely do not want any more catastrophic oil spills.

143. Nancy Hubbs-Chang
Zip Code: 91105
We don't need fossil fuels any more. This year is proving beyond the shadow of a doubt how damaging they are to our city, county, country, and planet.

144. Felix Mbuga
Zip Code: 95035
We have a moral responsibility to our children and our grandchildren to not leave them a planet in worse condition than we received it that is devastated by climate pollution. The science is clear that this means: no more fossil fuel subsidies or expansion or investment in fossil fuel infrastructure, winding down existing fossil fuel production and consumption as quickly as possible, and rapidly expanding clean carbon-free energy production.

145. Kristie Guzman
Zip Code: 90713
We have enough pollution

146. Stephanie Oliver
Zip Code: 90803
We have the means to make this happen now. Let?s do it, we?re counting on you to make this wonderful community even better!

147. Gabriela Worrel
Zip Code: 90016
We have waited too long for environmental Justice. Stop harmful drilling now!

148. Richard Lindemann
Zip Code: 90804
We know that oil facilities are a harm to residents near or far from them. With the use of more electric means of transportation, OIL needs to be phased out in LB and SH as quickly as possible, within the next 5 to 7years. The time for this begins, NOW! Begin this process to better the health of generations to come. Clean up is MANDATORY for ALL OIL COMPANIES involved.

149. Paul Lewis
Zip Code: 90807
We live within a few blocks of several oil rigs, and it's a terrible thing! How dare the city where we live allow such toxic pollution to take place in residential neighborhoods? Other cities have outlawed it--as well it should be--so what is the City of Long Beach waiting for?

150. Nishanga Bliss
Zip Code: 94702
We must act now to keep oil in the ground and protect the climate!

151. Suzanna Byrne
Zip Code: 92649
We MUST stop being so dependent on fossil fuels especially oil. I cannot afford to buy a hybrid or an electric car but support the effort to get rid of gasoline powered cars for the future. Therein lies some hope of less damage to the only home we have - EARTH1

152. Ann Dorsey
Zip Code: 91325

We must stop extracting fossil fuels if we want a livable future.

153. Brady Bradshaw
Zip Code: 91302
We need drastic reductions in climate pollution if we are to avoid exponentially more catastrophic wildfires, droughts, and intensified storms.
My children's children will need a livable planet, and right now, people suffer at the hands of the oil industry's death-grip on our local, state, and federal governments. The misinformation campaign they are employing right now to lock in decades of further climate chaos and health impacts to our communities, is shameful. Big Oil's propaganda should be ignored outright as lies and deceit.
Do what is needed- phase out oil and gas immediately.

154. Sarah Butler
Zip Code: 94563
We need to ban new oil drilling now since oil wells are not healthy for people!

155. Paige Fordice
Zip Code: 95018
We need to build infrastructure for alternative energy sources. Stop producing oil.

156. Peter Canavan
Zip Code: 90803
We need to cut fossil fuels now! They are destroying our air our water our children and our lives! When are we going to wake up?

157. Denise Berringer-Wood
Zip Code: 90807
We need to focus on the health of our community and a clean climate future, not corporate profits!

158. Patricia Williams
Zip Code: 94571
We need to protect our beaches!

159. Kathleen Petricca
Zip Code: 94553
We need to push faster to get solar technology and storage to more residents. It's a race against time.

160. Mary Rojeski
Zip Code: 90405
What if it was next to Your home?

161. JB Jb
Zip Code: 94603
What! This is STILL happening? It's got to go!

162. Susan Hathaway
Zip Code: 90660
Why are you so eager to make people sick by putting more and more oil wells near their homes?

163. Dylan Michlin
Zip Code: 90254
Why don?t you invest in EV infrastructure instead?

164. Jeannine Pearce
Zip Code: 90814
You know why. Our kids are born and have infant asthma, Long Beach has a 17 year life expectancy difference due to health impacts of this climate crisis.
You got this and the Community has your back.

165. A.J. Averett

Zip Code: 91942

166. Ad Clayton
Zip Code: 92081

167. Adam Bernstein
Zip Code: 90012

168. Adam Resnick
Zip Code: 90026

169. Adria Tenisson
Zip Code: 93003

170. AIXA FIELDER
Zip Code: 90028

171. AJ Cho
Zip Code: 94579

172. Alan Chen
Zip Code: 90025

173. Alan Gonzalez
Zip Code: 90815

174. Alexis Georgiou
Zip Code: 95054

175. Alice Neuhauser
Zip Code: 90266

176. Allie Palmer
Zip Code: 92672

177. Alyza Cornett
Zip Code: 90056

178. Amaan Nabeel
Zip Code: 91301

179. Amanda DeJesus
Zip Code: 90806

180. Amira Mansour
Zip Code: 92612

181. AmirAli Siassi
Zip Code: 90049

182. Analisa Swan
Zip Code: 91504

183. Anastasia FIANDACA
Zip Code: 94901

184. Andarin Arvola
Zip Code: 95437

185. Andrea Scott
Zip Code: 94507

186. Andrea Milton
Zip Code: 91304

187. Andrew Philpot
Zip Code: 93463

188. Andy Lupenko
Zip Code: 91945

189. Angela Carter
Zip Code: 90731

190. Angela Gantos
Zip Code: 94920

191. Angela Clayton
Zip Code: 92081

192. Angie Klein
Zip Code: 94501

193. Annamarie Jones
Zip Code: 96101

194. Anne Mohr
Zip Code: 92626

195. Annemarie Weibel
Zip Code: 95410

196. Annette Benton
Zip Code: 94565

197. Annette Pirrone
Zip Code: 94960

198. Annie Hallatt
Zip Code: 94703

199. Anthony Montapert
Zip Code: 93455

200. Anthony Sandoval
Zip Code: 90710

201. Anthony Ramirez
Zip Code: 90802

202. Armando A. Garcia
Zip Code: 92571

203. Audrey Higbee
Zip Code: 90814

204. B Nemiroff
Zip Code: 90035

205. B Sandow
Zip Code: 94804

206. b edwards
Zip Code: 94973

207. Barbara Lovejoy
Zip Code: 94804

208. Barbara Mais
Zip Code: 90807

209. Barbara M
Zip Code: 90803

210. Barbara Marrs
Zip Code: 92371

211. Barbara Scheinman
Zip Code: 92691

212. Barbara Bellano
Zip Code: 91107

213. barbara poland
Zip Code: 91214

214. Barbara Mesney
Zip Code: 90066

215. Barbara Lehman
Zip Code: 91350

216. Barry & Tracy Kogen
Zip Code: 90808

217. Baty Family
Zip Code: 92373

218. Ben Keller
Zip Code: 94608

219. Ben Ruwe
Zip Code: 95005

220. Ben Hauck
Zip Code: 90808

221. Berna Cliffe
Zip Code: 90803

222. Bert Gfreenberg
Zip Code: 95135

223. Bob Flagg
Zip Code: 95436

224. Bonita Lacy
Zip Code: 91724

225. Bonnie Arbuckle
Zip Code: 95367

226. Bonny Davis
Zip Code: 95949

227. Brandon Gallegos
Zip Code: 92707

228. Brenda Haig
Zip Code: 90803

229. Brenda Haig
Zip Code: 90803

230. Brian Murphy
Zip Code: 91423

231. Brian Boortz
Zip Code: 95030

232. Bruce Burns
Zip Code: 92108

233. Bryan Callejo
Zip Code: 92114

234. Bryant Odega
Zip Code: 90501

235. bud hoekstra
Zip Code: 95232

236. Caephren Mckenna
Zip Code: 94609

237. Candace Rocha
Zip Code: 90032

238. Carol Drake
Zip Code: 94536

239. Carol Ng
Zip Code: 90026

240. Carol Lawson
Zip Code: 95821

241. carol schaffer
Zip Code: 94806

242. Carol Wiley
Zip Code: 92394

243. Carolyn Anders
Zip Code: 90230

244. Carolyn Leonard
Zip Code: 92404

245. Carolyn Yee
Zip Code: 95822

246. Carolyn Rosenstein
Zip Code: 90067

247. Carrie Weil
Zip Code: 90404

248. Caryn Cowin
Zip Code: 93308

249. Catherine Loudis
Zip Code: 94960

250. Cati Glasser
Zip Code: 90038

251. Caylee Hong
Zip Code: 90755

252. Celeste Anacker
Zip Code: 93105

253. Charlene Kerchevall

Zip Code: 92054

254. Charles Wieland
Zip Code: 94583

255. Charles Modjeski
Zip Code: 94555

256. Charles Heinrichs
Zip Code: 96097

257. CHARLOTTE WILLIAMS
Zip Code: 90302

258. Cheryl Albert
Zip Code: 95019

259. Chris Loo
Zip Code: 95037

260. Chris Geukens
Zip Code: 91343

261. Chris Gilbert
Zip Code: 94707

262. Christian Heinold
Zip Code: 94612

263. Christina Nielsen
Zip Code: 95120

264. Christina Medina
Zip Code: 90744

265. Christine Brockman
Zip Code: 92881

266. Christine Hayes
Zip Code: 91786

267. Christopher Cusack
Zip Code: 90016

268. Christopher Ware
Zip Code: 94539

269. Christopher Lish
Zip Code: 94903

270. Cindy Stein
Zip Code: 91320

271. Claire Perricelli
Zip Code: 95501

272. Claudia Monahan
Zip Code: 92253

273. Clay Thibodeaux
Zip Code: 90293

274. Consuelo Valenzuela
Zip Code: 95917

275. Corey Vanderwouw
Zip Code: 95949

276. Courtney Gartin
Zip Code: 95120

277. curt sanders
Zip Code: 93541

278. Damon Brown
Zip Code: 90016

279. Dan Esposito
Zip Code: 90266

280. Dana Kinonen
Zip Code: 90505

281. Danijel Mikulja
Zip Code: 90016

282. Darrell Neft
Zip Code: 92626

283. David Dexter
Zip Code: 94941

284. David Doering
Zip Code: 94109

285. David Boyer
Zip Code: 94304

286. David Hardy
Zip Code: 93065

287. David Garfinkle
Zip Code: 91356

288. David Peevers
Zip Code: 90066

289. David Murillo
Zip Code: 91351

290. Davin Peterson
Zip Code: 95503

291. Dean Campbell
Zip Code: 90807

292. Deborah Wardly
Zip Code: 95726

293. Debra Wills
Zip Code: 94610

294. Delores Yanko
Zip Code: 92543

295. Denise Fidel
Zip Code: 92007

296. Dennis Lynch
Zip Code: 95018

297. Dennis Trembly
Zip Code: 90275

298. Dennis Mcintyre
Zip Code: 92677

299. Dennis Trembly
Zip Code: 90275

300. Desendorf Mark
Zip Code: 90066

301. Diana Koeck
Zip Code: 92626

302. Diane Stotler
Zip Code: 93940

303. Diane Cottrell
Zip Code: 94803

304. Don Meehan
Zip Code: 95124

305. Donna Davies
Zip Code: 94040

306. Donna Mize
Zip Code: 94805

307. Donna Sharee
Zip Code: 94112

308. Donna Shellabarger
Zip Code: 90505

309. donnal poppe
Zip Code: 91325

310. Earl Frounfelter
Zip Code: 93454

311. Edgar Flores
Zip Code: 90808

312. Edward Landler
Zip Code: 90065

313. Edward Macan
Zip Code: 95501

314. Edwin and Jean Aiken
Zip Code: 94087

315. Elaine Russell
Zip Code: 90815

316. Elizabeth Levy
Zip Code: 94805

317. Elizabeth Ramsey
Zip Code: 95616

318. Elizabeth Estes
Zip Code: 91107

319. elizabeth myrin shore
Zip Code: 94979

320. Ellen Kaufman
Zip Code: 91311

321. Ellen Koivisto
Zip Code: 94122

322. Elliot Gonzales
Zip Code: 90813

323. Elsa Tung
Zip Code: 90807

324. Emmanuel Garcia-Rojas
Zip Code: 90066

325. Eric Muller
Zip Code: 94024

326. Eric Ericson
Zip Code: 90210

327. Erica Brown
Zip Code: 95602

328. Erin Suyehara
Zip Code: 90503

329. Erin Foley
Zip Code: 90813

330. Erin Mccune
Zip Code: 93117

331. Erlinda Cortez
Zip Code: 90807

332. Ernie Walters
Zip Code: 94587

333. Esther Moreno
Zip Code: 94505

334. Etta Robin
Zip Code: 93312

335. Evette Andersen
Zip Code: 95945

336. Fatima Iqbal-Zubair
Zip Code: 90248

337. Fiorella Russo-Jang
Zip Code: 94553

338. Flor Murray
Zip Code: 94044

339. Flora Rosas
Zip Code: 90038

340. Florence Litton
Zip Code: 92082

341. Gabriel Vargas

Zip Code: 90802

342. Gaille Heidemann
Zip Code: 90024

343. Gary Cote
Zip Code: 90803

344. Gary Goetz
Zip Code: 93950

345. Gary Popejoy
Zip Code: 96062

346. Gary Kuehn
Zip Code: 91321

347. Gavin Ford
Zip Code: 92104

348. Gavin0 Composer
Zip Code: 92618

349. Genesis Delgado
Zip Code: 90731

350. George Yenoki
Zip Code: 91016

351. Gerald Shaia
Zip Code: 91352

352. Gerard Ridella
Zip Code: 94546

353. Gladys Delgadillo
Zip Code: 92129

354. Gregg Lichtenstein
Zip Code: 92131

355. Gregory Perkins
Zip Code: 90814

356. Heather White
Zip Code: 90275

357. Heidi Buech
Zip Code: 90066

358. Helen Moncayo
Zip Code: 91784

359. Henry Schlinger
Zip Code: 91201

360. Henry Rosenfeld
Zip Code: 92506

361. Hildy Meyers
Zip Code: 92648

362. Howard Cohen
Zip Code: 94306

363. Inger Acking
Zip Code: 94710

364. Irene Hilgers
Zip Code: 94582

365. Iris Edinger
Zip Code: 91367

366. Iyela Palidine
Zip Code: 92672

367. J Lasahn
Zip Code: 94530

368. J P
Zip Code: 95521

369. J.W. Oman
Zip Code: 94618

370. Jack Cooper
Zip Code: 90807

371. Jackson Casimiro
Zip Code: 90731

372. Jacob Lang
Zip Code: 90041

373. Jacoba Dolloff
Zip Code: 91941

374. Jacqueline McVicar
Zip Code: 92115

375. Jacquelyn Heitman
Zip Code: 90814

376. Jaime Nahman
Zip Code: 90290

377. James Dawson
Zip Code: 95618

378. James Samis
Zip Code: 90275

379. James Symington
Zip Code: 90240

380. Jamie Le
Zip Code: 94501

381. Jan Warren
Zip Code: 94598

382. Jana Frazier
Zip Code: 90731

383. jane drexler
Zip Code: 93117

384. Jane Spini
Zip Code: 95521

385. Janet Maker
Zip Code: 90024

386. Jason Nolasco
Zip Code: 90706

387. Javier Del Valle
Zip Code: 90640

388. Jeanine Metildi
Zip Code: 90806

389. Jeannette Hanna
Zip Code: 95864

390. Jeff Slayton
Zip Code: 90806

391. Jeffrey Hurwitz
Zip Code: 94121

392. Jeffrey Streicher
Zip Code: 90808

393. Jen Rund
Zip Code: 94947

394. Jennifer Celio
Zip Code: 90802

395. Jennifer Tomassi
Zip Code: 90018

396. Jennifer Schmitz
Zip Code: 94541

397. Jes Laufenberg
Zip Code: 95819

398. jess zelniker
Zip Code: 91601

399. Jessica Powers
Zip Code: 91739

400. Jill Rhiannon
Zip Code: 95991

401. Jillian Gallery
Zip Code: 90740

402. Jim Cramer
Zip Code: 95616

403. Jim Curland
Zip Code: 95039

404. Jim Hartung
Zip Code: 90402

405. Jo Williams
Zip Code: 90814

406. Jo Ann Bollen
Zip Code: 92284

407. Joan Smith
Zip Code: 94904

408. Joanne Britton
Zip Code: 92115

409. Joe Buhowsky
Zip Code: 94582

410. Joe Smith
Zip Code: 92020

411. Joel Olson
Zip Code: 94063

412. Joel Kirschenstein
Zip Code: 91361

413. John Bertaina
Zip Code: 95139

414. John Cattarin
Zip Code: 94002

415. JOHN CHRISTOPHER
Zip Code: 90712

416. John Alexander
Zip Code: 92057

417. john pasqua
Zip Code: 92025

418. John Teevan
Zip Code: 91914

419. Jonathan Jonathan
Zip Code: 95037

420. Jonathan Peltz
Zip Code: 90046

421. Jose Rodriguez
Zip Code: 90604

422. Joseph Alvarado
Zip Code: 94122

423. Joslyn Baxter
Zip Code: 94110

424. Joy Zadaca
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425. Joyce Smith
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426. Juan Paulo Panaligan
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427. Judith Baker
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428. Judith Smith
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433. Kailee Caruso
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434. Kali Krishnan
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435. Karen Harper
Zip Code: 90803

436. Karen Tandy
Zip Code: 91750

437. Karen Kirschling
Zip Code: 94117

438. Karl Pierce
Zip Code: 95829

439. Karla Devine
Zip Code: 90266

440. Kathleen Van Every
Zip Code: 93422

441. Kathleen Gause
Zip Code: 90815

442. Kathy Popoff
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443. Kay Gallin
Zip Code: 90067

444. Kaylah Sterling
Zip Code: 94608

445. Keith Rhinehart
Zip Code: 95050

446. Kelly Fitzgerald
Zip Code: 90807

447. KELLY KRAMER
Zip Code: 92840

448. Ken Warfield
Zip Code: 92807

449. Kent Grigg
Zip Code: 94595

450. Kermit Cuff
Zip Code: 94041

451. Kevin Forde
Zip Code: 90814

452. Kim Floyd
Zip Code: 92260

453. Kirstie Palmer
Zip Code: 90277

454. Kobi Naseck
Zip Code: 94609

455. Kris Montgomery
Zip Code: 95405

456. Kristen Sandel
Zip Code: 95005

457. Kristin Womack
Zip Code: 94960

458. Kristina Fukuda
Zip Code: 90034

459. L Nelson
Zip Code: 95038

460. Laura Herndon
Zip Code: 91505

461. Laura Herndon
Zip Code: 91505

462. Laura Haider
Zip Code: 93727

463. Laura Dill
Zip Code: 94706

464. Lauren Linda
Zip Code: 92637

465. Lauren Prust
Zip Code: 92126

466. Lauren Ferree Bash
Zip Code: 90405

467. Lawrence Abbott
Zip Code: 94577

468. Leah Pressman
Zip Code: 90232

469. Leah Berman
Zip Code: 95003

470. LeAnn Bjelle
Zip Code: 95003

471. lee jordan
Zip Code: 90056

472. Lee Liddle
Zip Code: 93720

473. Leonie Terfort
Zip Code: 94941

474. Leslie Jones
Zip Code: 90803

475. Leslie Nanasy
Zip Code: 90808

476. Linda Ford
Zip Code: 92648

477. Linda Barrientos
Zip Code: 94015

478. Lindsay Mugglestone
Zip Code: 94705

479. Lindsey Kalfsbeek
Zip Code: 94509

480. Lisa Allowitz-Thompson
Zip Code: 96148

481. Lisa Salazar
Zip Code: 96089

482. Lisa Phenix
Zip Code: 95608

483. Livia Ferguson
Zip Code: 90266

484. Lori Kegler
Zip Code: 90731

485. Lori Wilson-Hopkins
Zip Code: 95603

486. Lucy Fried
Zip Code: 90016

487. Lydia M. Villalobos-White
Zip Code: 91345

488. Lynn Alley
Zip Code: 92011

489. M Lynch
Zip Code: 90405

490. M. C. Corvalan
Zip Code: 90278

491. M. Virginia Leslie
Zip Code: 95035

492. Marci Yellin
Zip Code: 94114

493. Marcia Edelen
Zip Code: 94704

494. Marcia Hackett
Zip Code: 92637

495. Marcy Meadows
Zip Code: 95444

496. Margaret Lirones
Zip Code: 93212

497. Margaret Rainey
Zip Code: 95519

498. Maria Mendez
Zip Code: 90016

499. Maria Skilbred
Zip Code: 90802

500. Marianne McDermott
Zip Code: 95928

501. Marie Winter
Zip Code: 92705

502. Marilyn Shepherd
Zip Code: 95570

503. Marisa Landsberg
Zip Code: 90266

504. Marjorie Hoskinson
Zip Code: 91360

505. Marjorie Xavier
Zip Code: 95409

506. Mark Feldman
Zip Code: 95401

507. Mark Looney
Zip Code: 94521

508. Mark Stannard
Zip Code: 90056

509. Mark Cappetta
Zip Code: 92270

510. Mark Skilbred
Zip Code: 91784

511. Mark Bartleman
Zip Code: 92651

512. Martin Horwitz
Zip Code: 94122

513. Mary Ames
Zip Code: 92592

514. Mary Hicklin
Zip Code: 92040

515. Mary Stanistreet
Zip Code: 93003

516. Mary Steele
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517. Mary Ann McDonald

Zip Code: 95818

518. Marybeth Wall
Zip Code: 90802

519. Matt Filler
Zip Code: 90740

520. Matthew Reid
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521. Matthew Comer
Zip Code: 92879

522. Meagan Wyllie
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523. Meg Brown
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524. Melinda Taylor
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525. Melissa Finley
Zip Code: 95445

526. Melissa Hutchinson
Zip Code: 93950

527. mercedes moreno
Zip Code: 92057

528. michael bailey
Zip Code: 90802

529. Michael richardson
Zip Code: 90802

530. Michael Price
Zip Code: 94109

531. Michael Schulte
Zip Code: 90066

532. Michael Eichenholtz
Zip Code: 94804

533. Michele Smith
Zip Code: 90277

534. Michelle Lewis
Zip Code: 90802

535. Michelle Hudson
Zip Code: 94402

536. Michelle Palladine
Zip Code: 92262

537. michelle geil
Zip Code: 90292

538. Mignon Moskowitz
Zip Code: 95425

539. Mike Evans
Zip Code: 94720

540. Miles Aiello
Zip Code: 90638

541. Miriam Leiseroff
Zip Code: 95125

542. Mitch M
Zip Code: 92262

543. Monica Abruzzo
Zip Code: 94546

544. Monica Embrey
Zip Code: 90026

545. Nadia Tushnet
Zip Code: 90803

546. Nancy Nilssen
Zip Code: 94568

547. Nancy Havassy
Zip Code: 94611

548. Nancy Oliver
Zip Code: 95818

549. Nancy Heck
Zip Code: 93454

550. Nancy Tierney
Zip Code: 94044

551. Nanlouise Wolfe
Zip Code: 95060

552. Nareg Keshishian
Zip Code: 91367

553. Natalija Sale
Zip Code: 90740

554. Nicholas Cahill
Zip Code: 93291

555. Nicholas Ratto
Zip Code: 94501

556. nicole levin
Zip Code: 90027

557. Nicole Leseigneur
Zip Code: 95405

558. Nicolette Moore
Zip Code: 92620

559. Nina MacDonald & Ted Wright
Zip Code: 92676

560. Noah Tenney
Zip Code: 94606

561. Nora Coyle
Zip Code: 92807

562. Pamela Gaskill
Zip Code: 95993

563. Pat Lang
Zip Code: 94022

564. Patricia Depew
Zip Code: 91106

565. Patricia McPherson
Zip Code: 90066

566. Patricia Law
Zip Code: 92102

567. Patrick McCarty
Zip Code: 92128

568. Paul Shabazian
Zip Code: 95311

569. Paul and Katherine Malchiodi
Zip Code: 92110

570. Paula Cavagnaro
Zip Code: 94550

571. Pauline Faye
Zip Code: 92673

572. Philip Simon
Zip Code: 94912

573. Phoenix Giffen
Zip Code: 94952

574. Pol Hermes
Zip Code: 92065

575. Priyanka Bhakta
Zip Code: 92708

576. Querido Galdo
Zip Code: 95445

577. R Kadden
Zip Code: 91308

578. R D Harlowe
Zip Code: 92549

579. R Lee Weir
Zip Code: 93463

580. Rachel Ben-Menachem
Zip Code: 90029

581. Ralph Penfield
Zip Code: 92104

582. Randy Bueno
Zip Code: 90720

583. Randy Baker
Zip Code: 92870

584. Randy and Michelle Davis
Zip Code: 95688

585. Ray Staar
Zip Code: 94109

586. Raymond Plasse
Zip Code: 91307

587. Raymond Vaczek
Zip Code: 90023

588. Rebecca Hanna
Zip Code: 90806

589. Rebecca Prewitt
Zip Code: 91602

590. Renaldo Gonzalez
Zip Code: 92284

591. Rene Maurice
Zip Code: 94117

592. Renee Jeska
Zip Code: 90740

593. Rich Goldberg
Zip Code: 94951

594. Richard Gallo
Zip Code: 95062

595. Richard Kornfeld
Zip Code: 91101

596. Richard Robinson
Zip Code: 90266

597. Rob Guilmette
Zip Code: 90808

598. Rob Cherwink
Zip Code: 95476

599. Rob Gallinger
Zip Code: 92586

600. Robert Ortiz
Zip Code: 94945

601. Roberta Stern
Zip Code: 94618

602. Roland Leong
Zip Code: 95842

603. ROMONA WILLIAMS
Zip Code: 90746

604. Ronald Mohler
Zip Code: 90804

605. Rosario Sandel

Zip Code: 91335

606. Roy Jackson
Zip Code: 90504

607. Rubén Becerra
Zip Code: 90731

608. Ruselle Revenaugh
Zip Code: 95060

609. Russell Weisz
Zip Code: 95060

610. Ruth b
Zip Code: 94070

611. Ryan Park
Zip Code: 90503

612. S Barryte
Zip Code: 90275

613. Sally Beer
Zip Code: 91001

614. Sam Butler
Zip Code: 90045

615. Sandra Gamble
Zip Code: 93555

616. Sandy Rodgers
Zip Code: 92223

617. Sandy Zelasko
Zip Code: 92082

618. Sara C. Blunt
Zip Code: 93067

619. Sarah Larson
Zip Code: 90025

620. Sarah Harvey
Zip Code: 94606

621. Sarah Pinsky
Zip Code: 90803

622. Saran K.
Zip Code: 90035

623. Scott Grinthal
Zip Code: 94402

624. Seth Weisbord
Zip Code: 90094

625. Sharon Nicodemus
Zip Code: 95821

626. Sherry Marsh
Zip Code: 92056

627. Shirley Rodda
Zip Code: 95121

628. Shoshana Wechsler
Zip Code: 94708

629. Sinthuja Nagalingam
Zip Code: 90814

630. Skarlette Arvolkskaya
Zip Code: 90815

631. Skye Van Raalte-Herzog
Zip Code: 91042

632. Sofia Okolowicz
Zip Code: 92592

633. Stacey Jones
Zip Code: 95203

634. Stacy Rose
Zip Code: 93442

635. Stephanie Nunez
Zip Code: 91405

636. Stephanie Linam
Zip Code: 94510

637. Steve Metzger
Zip Code: 92647

638. Steve Robey
Zip Code: 94708

639. Steve Sketo
Zip Code: 93312

640. steve zelman
Zip Code: 91367

641. Steven Stewart
Zip Code: 92886

642. Steven Larky
Zip Code: 92007

643. Steven Mazliach
Zip Code: 94118

644. Stuart Greenburg
Zip Code: 91381

645. Stuart Hartley
Zip Code: 92106

646. Sue Cleereman
Zip Code: 94556

647. Sujana Patel
Zip Code: 90275

648. Suneun Reichert
Zip Code: 90807

649. Sunnie Noellert
Zip Code: 95519

650. Supporter Unknown
Zip Code: 90731

651. Susan Hampton
Zip Code: 94530

652. Susan Chung
Zip Code: 90032

653. Susan Burns
Zip Code: 91423

654. Susan Morales
Zip Code: 90808

655. Susanne Cumming
Zip Code: 90292

656. Susun Godwin
Zip Code: 90814

657. Suzanne Cook
Zip Code: 95519

658. Suzanne Torkar
Zip Code: 92009

659. Sylvia De Baca
Zip Code: 91773

660. Sylvia Ito
Zip Code: 92648

661. Tamara Mccready
Zip Code: 93063

662. Tara Ohta
Zip Code: 91101

663. Tara Sanchez
Zip Code: 90807

664. Ted Fishman
Zip Code: 95123

665. Terrie Smith
Zip Code: 91977

666. Theresa Bucher
Zip Code: 91356

667. Theresa Smith
Zip Code: 90806

668. Therese DeBing
Zip Code: 93950

669. Thomas Sepko
Zip Code: 90740

670. Thomas Whiting
Zip Code: 94534

671. Thomas Russell
Zip Code: 90731

672. Tim Maurer
Zip Code: 92808

673. Todd Hack
Zip Code: 91913

674. Tom Butler
Zip Code: 95124

675. Tom Fray
Zip Code: 92117

676. Tony Ramirez
Zip Code: 90802

677. Tonya Cockrell
Zip Code: 92882

678. Tree Wright
Zip Code: 93022

679. Tristan Dunker
Zip Code: 92845

680. Tyler FITZGERALD
Zip Code: 92081

681. Utkarsh Nath
Zip Code: 94555

682. Val Farrelly
Zip Code: 94403

683. Valerie Kuo
Zip Code: 91748

684. Veronica Michael
Zip Code: 94533

685. Vicki Bookless
Zip Code: 93405

686. Victoria Jensen
Zip Code: 90405

687. Victoria Shepherd
Zip Code: 91201

688. Virginia Turner
Zip Code: 91367

689. Vonya Morris
Zip Code: 94402

690. Wallace Rhine
Zip Code: 95421

691. Walter Erhorn
Zip Code: 91979

692. Warren Gold
Zip Code: 94941

693. Warren M. Gold

Zip Code: 94941

694. Wendy Brunell
Zip Code: 91306

695. William Briggs
Zip Code: 90254

696. Yvonne Olivares
Zip Code: 91730

697. Zach Dietrich
Zip Code: 91505

698. Zara Jaffe
Zip Code: 94010

699. Zora Hollie
Zip Code: 90043