

FILED BY FAX

ALAMEDA COUNTY

September 19, 2017

CLERK OF
THE SUPERIOR COURT
By Burt Moskaira, Deputy

CASE NUMBER:

RG17875889

CITY OF OAKLAND
BARBARA J. PARKER – SB #069722

City Attorney
MARIA BEE – SB #167716

Special Counsel
ERIN BERNSTEIN – SB # 231539

Senior Deputy City Attorney
eberstein@oaklandcityattorney.org

One Frank H. Ogawa Plaza, 6th Floor
Oakland, California

Tel.: (510) 238-3601

Fax: (510) 238-6500

Attorney for The People of the State of California

[Other Counsel Listed on Signature Page]

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF ALAMEDA

THE PEOPLE OF THE STATE OF
CALIFORNIA, acting by and through the
Oakland City Attorney,

Plaintiff and Real Party in Interest,

v.

BP P.L.C., a public limited company of England
and Wales, CHEVRON CORPORATION, a
Delaware corporation, CONOCOPHILLIPS
COMPANY, a Delaware corporation, EXXON
MOBIL CORPORATION, a New Jersey
corporation, ROYAL DUTCH SHELL PLC, a
public limited company of England and Wales,
and DOES 1 through 10,

Defendants.

No.

COMPLAINT FOR PUBLIC NUISANCE

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	1
II. JURISDICTION AND VENUE.....	5
III. PARTIES.....	5
A. Plaintiff.....	5
B. Defendants.....	5
C. Defendants' connections to California.....	9
IV. FOSSIL FUELS ARE THE PRIMARY CAUSE OF GLOBAL WARMING.	11
V. DEFENDANTS HAVE PRODUCED MASSIVE QUANTITIES OF FOSSIL FUELS AND HAVE CONTINUED TO DO SO EVEN AS GLOBAL WARMING HAS BECOME GRAVELY DANGEROUS.	15
VI. DEFENDANTS HAVE PRODUCED MASSIVE AMOUNTS OF FOSSIL FUELS DESPITE HAVING FULL KNOWLEDGE FROM THEIR IN-HOUSE SCIENTIFIC STAFF, OR FROM API, THAT FOSSIL FUELS WOULD CAUSE GLOBAL WARMING.	16
VII. DESPITE THEIR EARLY KNOWLEDGE THAT GLOBAL WARMING WAS REAL AND POSED GRAVE THREATS, DEFENDANTS PROMOTED FOSSIL FUELS FOR PERVASIVE USE WHILE DOWNPLAYING THE REALITY AND RISKS OF GLOBAL WARMING.	21
A. Defendants borrowed the Big Tobacco playbook in order to promote their products.....	22
B. Defendants' direct promotion of fossil fuels.....	25
VIII. OAKLAND WILL INCUR SERIOUS CLIMATE CHANGE INJURIES THAT WILL REQUIRE BILLIONS IN EXPENDITURES TO ABATE THE GLOBAL WARMING NUISANCE.....	28
IX. CAUSE OF ACTION: PUBLIC NUISANCE ON BEHALF OF THE PEOPLE	32
X. RELIEF REQUESTED	34

1 Plaintiff, the People of the State of California ("the People"), by and through the Oakland
2 City Attorney, brings this action against Defendants BP p.l.c. ("BP"), Chevron Corporation
3 ("Chevron"), ConocoPhillips Company ("ConocoPhillips"), Exxon Mobil Corporation ("Exxon"),
4 and Royal Dutch Shell plc ("Shell") (collectively, "Defendants"), and alleges as follows:

5 I. INTRODUCTION

6 1. Global warming is here and it is harming Oakland now. Global warming causes
7 accelerated sea level rise through thermal expansion of ocean water and melting of land-based ice.
8 Sea levels are rising at rates unprecedented in the history of human civilization due to global
9 warming. Global warming-induced sea level rise already is causing flooding of low-lying areas of
10 Oakland that border the San Francisco Bay, increased shoreline erosion, and salt water impacts to
11 water treatment systems. Many of the Oakland residents who are likely to be most affected by
12 climate change are low-income and/or people of color. As the U.S. government has pointed out,
13 people of color, low-income groups, and certain immigrant groups are (*e.g.*, because of poverty,
14 chronic health conditions, and social isolation) potentially more "vulnerable" to climate change
15 impacts, including heat waves, flooding, and degraded air quality. This is true in Oakland, where
16 "socially vulnerable" individuals such as African Americans and Hispanics, tend to live at lower
17 elevations most affected by sea level rise and higher storm surges. The rapidly rising sea level
18 along the Pacific coast and in San Francisco Bay, moreover, poses an imminent threat of
19 catastrophic storm surge flooding because any storm would be superimposed on a higher sea level.
20 This threat to human safety and to public and private property is becoming more dire every day as
21 global warming reaches ever more dangerous levels and sea level rise accelerates. Oakland must
22 take abatement action now to protect public and private property from this looming threat by
23 building sea walls and other sea level rise adaptation infrastructure. Exhibits 1 and 2 to this
24 Complaint, showing flood events' projected intrusion into Oakland as a result of global warming,
25 demonstrate just how stark the threat is.¹

26
27 ¹ City of Oakland, 2016-2021 Local Hazard Mitigation Plan (June 7, 2016), at 84-85, *available at*
28 <http://www2.oaklandnet.com/oakcal/groups/ceda/documents/report/oak058455.pdf>.

1 2. This egregious state of affairs is no accident. Rather, it is an unlawful public
2 nuisance of the first order. Defendants are the five largest investor-owned fossil fuel corporations
3 in the world as measured by their historic production of fossil fuels. The use of fossil fuels – oil,
4 natural gas and coal – is the primary source of the greenhouse gas pollution that causes global
5 warming, a point that science established years ago. Defendants have produced massive amounts
6 of fossil fuels for many years. And recent disclosures of internal industry documents demonstrate
7 that they have done so despite knowing – since at least the late 1970s and early 1980s if not earlier
8 – that massive fossil fuel usage would cause dangerous global warming. It was at that time that
9 scientists on their staffs or with whom they consulted through their trade association, the American
10 Petroleum Institute (“API”), investigated the science and warned them in stark terms that fossil fuel
11 usage would cause global warming at a rate unprecedented in the history of human civilization and
12 present risks of “catastrophic” harm in coming decades.

13 3. Undeterred by these stark warnings, Defendants proceeded to double-down on fossil
14 fuels. Most of the carbon dioxide now in the atmosphere as a result of combustion of Defendants’
15 fossil fuels is likely attributable to their recent production – *i.e.*, to fossil fuels produced by
16 Defendants since 1980. Even today, with the global warming danger level at a critical phase,
17 Defendants continue to engage in massive fossil fuel production and execute long-term business
18 plans to continue and even expand their fossil fuel production for decades into the future.

19 4. The global warming-induced sea level rise from past fossil fuel usage is an
20 irreversible condition on any relevant time scale: it will last hundreds or even thousands of years.
21 Defendants’ planned production of fossil fuels into the future will exacerbate global warming,
22 accelerate sea level rise even further, and require greater and more costly abatement actions to
23 protect Oakland.

24 5. Defendants, notably, did not simply produce fossil fuels. They engaged in large-
25 scale, sophisticated advertising and public relations campaigns to promote pervasive fossil fuel
26 usage and to portray fossil fuels as environmentally responsible and essential to human well-being
27 – although they knew that their fossil fuels would contribute, and subsequently were contributing,
28 to dangerous global warming and associated accelerated sea level rise. These promotional efforts

1 continue through today even in the face of overwhelming and incontrovertible scientific evidence
2 that fossil fuels are altering the climate and global warming has become an existential threat to
3 modern life.

4 6. Defendants' promotion of fossil fuels has also entailed denying mainstream climate
5 science or downplaying the risks of global warming. During the 1990s and early 2000s,
6 Defendants stole a page from the Big Tobacco playbook and sponsored public relations campaigns,
7 either directly or through the API or other groups, to deny and discredit the mainstream scientific
8 consensus on global warming, downplay the risks of global warming, and even to launch
9 unfounded attacks on the integrity of leading climate scientists. "Uncertainty" of the science
10 became the constantly repeated mantra of this Big Oil public relations ("PR") campaign just as
11 "Doubt is our product" was the Big Tobacco PR theme. Emphasizing "uncertainty" in climate
12 science, directly or through the API, has remained a focus of Defendants' efforts to promote their
13 fuels even though they are well aware that the fundamental scientific facts of global warming are
14 not in dispute and are a cause of grave danger through sea level rise.

15 7. The purpose of all this promotion of fossil fuels and efforts to undermine
16 mainstream climate science, like all marketing, was to increase sales and protect market share. It
17 succeeded.

18 8. And now it will cost billions of dollars to build sea walls and other infrastructure to
19 protect human safety and public and private property in Oakland from global warming-induced sea
20 level rise. A recent report by the State of California has rung the alarm bell as loudly as possible:
21 "Previously underappreciated glaciological processes, examined in the research of the last five
22 years, have the potential to greatly increase the probability of extreme global sea-level rise (6 feet
23 or more) within the century" under business as usual fossil fuel production and usage.²
24 Translation: the planet's enormous ice caps on Greenland and Antarctica are beginning to melt,
25 like their much smaller but more numerous cousins, the mountain glaciers, have been doing for
26

27 ² Griggs et al., Rising Seas in California: an update on sea-level rise science, California Ocean
28 Science Trust, at 16 (Apr. 2017) ("Rising Seas in California"), available at
<http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf>.

1 many years, and slide into the ocean; and this new dynamic is fundamentally increasing the risk of
2 catastrophic sea level rise. The report projects a risk of as much as ten feet of additional sea level
3 rise along the coastline of San Francisco Bay by 2100, which would be catastrophic.³ Nearer-term
4 risks include 0.3 to as much as 0.8 feet of additional sea level rise by 2030,⁴ which itself will
5 require the building of sea walls and other costly infrastructure given the dynamics of storm surge
6 and regular high tide flooding.

7 9. This new information shows that the costs of dealing with global warming-induced
8 sea level rise – already immense – will be staggering for the public entities that must protect their
9 people and their coastlines. The City of Oakland already is taking action to adapt to accelerating
10 sea level rise. In 2016, Oakland adopted a five-year Local Hazard Mitigation Plan that analyzes
11 risks from sea level rise, identifies mitigation measures and presents an implementation plan for the
12 next five years. The plan warns that projected sea level rise in Oakland, absent adaptation, could
13 “substantially impact coastal areas” including low-lying coastal residences, the Port and Oakland
14 International Airport. As set forth in the Plan, projected sea level rise in Oakland puts at risk
15 property with a total replacement cost of between \$22 and \$38 billion. The magnitude of the
16 actions needed to abate harms from sea level rise, and the amount of property at risk, will increase
17 in light of the rapidly accelerating sea level rise and the increased scientific understanding of sea
18 level rise processes as set forth in the 2017 report.

19 10. Defendants are substantial contributors to the public nuisance of global warming
20 that is causing injury to the People and thus are jointly and severally liable. Defendants’
21 cumulative production of fossil fuels over many years places each of them among the top sources
22 of global warming pollution in the world. Upon information and belief, Defendants are,
23 respectively, the first (Chevron), second (Exxon), fourth (BP), sixth (Shell) and ninth
24 (ConocoPhillips) largest cumulative producers of fossil fuels worldwide from the mid Nineteenth
25 Century to present; most of Defendants’ global warming pollution from the usage of their fuels has
26 accumulated in the atmosphere since 1980. Defendants, moreover, are qualitatively different from

27 ³ *Id.* at 26.

28 ⁴ *Id.*

1 other contributors to the harm given their in-house scientific resources, early knowledge of global
2 warming, commercial promotions of fossil fuels as beneficent even in light of their knowledge to
3 the contrary, and efforts to protect their fossil fuel market by downplaying the risks of global
4 warming.

5 11. The People seek an order requiring Defendants to abate the global warming-induced
6 sea level rise nuisance to which they have contributed by funding an abatement program to build
7 sea walls and other infrastructure that are urgently needed to protect human safety and public and
8 private property in Oakland. The People do not seek to impose liability on Defendants for their
9 direct emissions of greenhouse gases and do not seek to restrain Defendants from engaging in their
10 business operations. This case is, fundamentally, about shifting the costs of abating sea level rise
11 harm – one of global warming’s gravest harms – back onto the companies. After all, it is
12 Defendants who have profited and will continue to profit by knowingly contributing to global
13 warming, thereby doing all they can to help create and maintain a profound public nuisance.

14 II. JURISDICTION AND VENUE

15 12. Jurisdiction is proper in this Court because Defendants have contributed to the
16 creation of a public nuisance in Oakland, and the Oakland City Attorney has the right and authority
17 to seek abatement of that nuisance on behalf of the People of the State of California.

18 13. Venue is proper in this county in accordance with section 392(a)(1) of the California
19 Code of Civil Procedure because the People allege injuries to real property located in this county.

20 III. PARTIES

21 A. Plaintiff

22 14. Plaintiff, the People of the State of California, by and through the Oakland City
23 Attorney, brings this suit pursuant to Code of Civil Procedure section 731, and Civil Code sections
24 3479, 3480, 3491, and 3494, to abate the public nuisance caused by Defendants.

25 B. Defendants

26 15. Defendant BP is a public limited company registered in England and Wales with its
27 headquarters in London, England, doing business in California. BP was created in 1998 as a result
28 of a merger between the Amoco Corporation (“Amoco”), a former U.S. corporation, and the British

1 Petroleum Company p.l.c. BP is a multinational, integrated oil and gas company that explores for,
2 produces, refines, markets and sells oil, natural gas and fossil fuel products.

3 16. BP controls company-wide climate change policies and fossil fuel production. BP,
4 through its employees and/or agents, manages, directs, conducts and/or controls operations relating
5 to its subsidiaries' participation in the process by which fossil fuels, including raw crude oil, are
6 produced, transported, refined, stored, distributed, marketed, and/or sold to consumers. BP also
7 exercises control over company-wide decisions on production and use of fossil fuel reserves
8 considering climate change impacts. BP's management, direction, conduct and/or control is
9 exercised through a variety of means, including through its employees' and/or agents'
10 implementation of policies, procedures, and programs relating to climate change generally and to
11 production of fossil fuels specifically.

12 17. As a result of its management, direction, conduct and/or control of operations
13 relating to company-wide climate change policies and fossil fuel production, Defendant BP is
14 responsible for its subsidiaries' past and current production and promotion of fossil fuel products.

15 18. Defendant Chevron is a Delaware Corporation with its principal place of business
16 located in San Ramon, California. Chevron and its predecessors had their headquarters in San
17 Francisco from 1879 to 2001. Chevron is a multinational, integrated oil and gas company that
18 explores for, produces, refines, markets and sells oil, natural gas and fossil fuel products.

19 19. Chevron controls company-wide climate change policies and fossil fuel production.
20 Chevron, through its employees and/or agents, manages, directs, conducts and/or controls
21 operations relating to its subsidiaries' participation in the process by which fossil fuels, including
22 raw crude oil, are produced, transported, refined, stored, distributed, marketed, and/or sold to
23 consumers. Chevron also exercises control over company-wide decisions on production and use of
24 fossil fuel reserves considering climate change impacts. Chevron's management, direction,
25 conduct and/or control is exercised through a variety of means, including through its employees'
26 and/or agents' implementation of policies, procedures, and programs relating to climate change
27 generally and to production of fossil fuels specifically.

1 20. As a result of its management, direction, conduct and/or control of operations
2 relating to company-wide climate change policies and fossil fuel production, Defendant Chevron is
3 responsible for its subsidiaries' past and current production and promotion of fossil fuel products.

4 21. Defendant ConocoPhillips is a Delaware Corporation with its principal place of
5 business located in Houston, Texas, doing business in California. ConocoPhillips is a
6 multinational oil and gas company that produces, markets and sells oil and natural gas and for
7 many years also refined and sold finished oil products.

8 22. ConocoPhillips controls company-wide climate change policies and fossil fuel
9 production. ConocoPhillips, through its employees and/or agents, manages, directs, conducts
10 and/or controls operations relating to its subsidiaries' participation in the process by which fossil
11 fuels, including raw crude oil, are produced, transported, refined, stored, distributed, marketed,
12 and/or sold to consumers. ConocoPhillips also exercises control over company-wide decisions on
13 production and use of fossil fuel reserves considering climate change impacts. ConocoPhillips'
14 management, direction, conduct and/or control is exercised through a variety of means, including
15 through its employees' and/or agents' implementation of policies, procedures, and programs
16 relating to climate change generally and to production of fossil fuels specifically.

17 23. As a result of its management, direction, conduct and/or control of operations
18 relating to company-wide climate change policies and fossil fuel production, Defendant
19 ConocoPhillips is responsible for its subsidiaries' past and current production and promotion of
20 fossil fuel products.

21 24. Defendant Exxon is a New Jersey corporation with its principal place of business
22 located in Irving, Texas, doing business in the State of California. Exxon is a multinational,
23 integrated oil and gas company that explores for, produces, refines, markets and sells oil, natural
24 gas and fossil fuel products and, as recently as 2009 produced, marketed and sold coal.

25 25. Exxon controls company-wide climate change policies and fossil fuel production.
26 Exxon, through its employees and/or agents, manages, directs, conducts and/or controls operations
27 relating to its subsidiaries' participation in the process by which fossil fuels, including raw crude
28 oil, are produced, transported, refined, stored, distributed, marketed, and/or sold to consumers.

1 Exxon also exercises control over company-wide decisions on production and use of fossil fuel
2 reserves considering climate change impacts. Exxon's management, direction, conduct and/or
3 control is exercised through a variety of means, including through its employees and/or agents'
4 implementation of policies, procedures, and programs relating to climate change generally and to
5 production of fossil fuels specifically.

6 26. As a result of its management, direction, conduct and/or control of operations
7 relating to company-wide climate change policies and fossil fuel production, Defendant Exxon is
8 responsible for its subsidiaries' past and current production and promotion of fossil fuel products.

9 27. Defendant Shell is a public limited company registered in England and Wales with
10 its headquarters in The Hague, Netherlands, doing business in California. Shell is a multinational,
11 integrated oil and gas company that explores for, produces, refines, markets and sells oil, natural
12 gas and fossil fuel products.

13 28. Shell controls company-wide climate change policies and fossil fuel production.
14 Shell, through its employees and/or agents, manages, directs, conducts and/or controls operations
15 relating to its subsidiaries' participation in the process by which fossil fuels, including raw crude
16 oil, are produced, transported, refined, stored, distributed, marketed, and/or sold to consumers.
17 Shell also exercises control over company-wide decisions on production and use of fossil fuel
18 reserves considering climate change impacts. Shell's management, direction, conduct and/or
19 control is exercised through a variety of means, including through its employees' and/or agents'
20 implementation of policies, procedures, and programs relating to climate change generally and to
21 production of fossil fuels specifically.

22 29. As a result of its management, direction, conduct and/or control of operations
23 relating to company-wide climate change policies and fossil fuel production, Defendant Shell is
24 responsible for its subsidiaries' past and current production and promotion of fossil fuel products.

25 30. Defendants DOES ONE through TEN are sued herein under fictitious names.
26 Plaintiff does not at this time know the true names or capacities of said defendants, but prays that
27 the same may be alleged when ascertained.
28

1 **C. Defendants' connections to California.**

2 31. Defendants have contributed to the creation of a public nuisance – global warming-
3 induced sea level rise – causing severe harms and threatening catastrophic harms in Oakland.

4 32. Each Defendant, directly and through its subsidiaries, substantially participates in
5 the process by which raw crude oil is extracted from the ground, refined into fossil fuel products
6 and delivered, marketed, and sold to California residents for use.

7 33. BP, through its subsidiaries: owns and/or operates port facilities in California for
8 receipt of crude oil. BP, through its subsidiaries, also produces oil in Alaska, and upon information
9 and belief, BP, through its subsidiaries, transports some of this crude oil to California. In addition,
10 BP operates 275 ARCO-licensed and-branded gasoline stations in California, including stations
11 located in Oakland. BP offers credit cards to consumers on its interactive website to promote sales
12 of gasoline and other products at its branded gasoline stations. BP's web site maintain a page of
13 "BP Amoco Stations Near Me" for California listing virtually every municipality in California and
14 hundreds of such gas stations. BP promotes gasoline sales by offering, consumers, through its
15 interactive web site, twenty-five cents off every gallon of BP-branded gasoline for every \$100
16 spent on a BP Visa® Credit Card or BP Credit Card for the first ninety days a consumer's account
17 is open.

18 34. Chevron, through its subsidiaries: produces oil in California, owns and/or operates
19 port facilities in California for receipt of crude oil, owns and operates two refineries where crude
20 oil is refined into finished fossil fuel products including gasoline, and owns and operates
21 approximately nine gasoline terminals in California. A gasoline terminal consists of enormous
22 aboveground storage tanks that hold gasoline for distribution to retail gasoline stations and
23 consumers. Chevron owns and operates the Richmond gasoline refinery and related terminals in
24 the San Francisco Bay Area. Chevron, through its subsidiaries, also produces oil in Alaska, and
25 upon information and belief, some of this crude oil is supplied to California. There also are
26 numerous Chevron-branded gasoline stations in California, including in Oakland. Chevron offers
27 credit cards to consumers through its interactive website, to promote sales of gasoline and other
28

1 products at its branded gasoline stations. Chevron promotes gasoline sales by offering consumers
2 three cents per gallon in fuel credits "every fill-up, every time at Chevron and Texaco stations."

3 35. ConocoPhillips, through its subsidiaries: owns and/or operates port facilities in
4 California for receipt of crude oil, and previously owned and operated a refinery based in both
5 Rodeo and Arroyo Grande, California, from 2001 to 2012, where crude oil was refined into
6 finished fossil fuel products including gasoline. ConocoPhillips, through its subsidiaries, also
7 produces oil in Alaska, and transports some of this crude oil to California.

8 36. Exxon, through its subsidiaries: produces oil in California, owns and/or operates
9 port facilities in California for receipt of crude oil, and previously owned and operated a refinery in
10 California until July 1, 2016, where crude oil was refined into finished fossil fuel products
11 including gasoline. Exxon owned the Benicia gasoline refinery for 30 years until 2000. Exxon,
12 through its subsidiaries, also produces oil in Alaska, and upon information and belief, Exxon,
13 through its subsidiaries, transports some of this crude oil to California. There also are numerous
14 Exxon-branded gasoline stations in California, including in Oakland and the greater Bay Area.
15 Exxon offers credit cards to consumers, through its interactive website, to promote sales of
16 gasoline and other products at its branded gasoline stations. Exxon promotes gasoline sales by
17 offering consumers twenty-five cents off every gallon of Synergy™ gasoline at Exxon™ or
18 Mobil™ stations for the first two months and then six cents off every gallon of Synergy gasoline at
19 Exxon- and Mobil-branded stations.

20 37. Shell, through its subsidiaries: owns and/or operates port facilities in California for
21 receipt of crude oil, owns and operates a refinery in California where crude oil is refined into
22 finished fossil fuel products including gasoline, transports crude oil through a pipeline within
23 California, and owns and operates approximately six gasoline terminals in California. Since 1915,
24 Shell has owned a gasoline refinery in Martinez, California, twenty-five miles northeast of
25 Oakland. There are numerous Shell-branded gasoline stations in California, including in Oakland.
26 Shell offers credit cards to consumers on its interactive website to promote sales of gasoline and
27 other products at its branded gasoline stations. Shell promotes gasoline sales by offering
28

1 consumers, through its interactive web site, twenty-five cents off every gallon of Shell Fuel for the
2 first two months after they open an account.

3 **IV. FOSSIL FUELS ARE THE PRIMARY CAUSE OF GLOBAL WARMING.**

4 38. Production of fossil fuels for combustion causes global warming. When used as
5 intended, fossil fuels release greenhouse gases, including carbon dioxide (CO₂) and methane,
6 which trap atmospheric heat and increase global temperatures. Carbon dioxide is by far the most
7 important greenhouse gas because of the combustion of massive amounts of fossil fuels.

8 39. Scientists have known for many years that the use of fossil fuels emits carbon
9 dioxide and that carbon dioxide is a greenhouse gas. In 1896, Svante Arrhenius, a Nobel-prize
10 winning scientist, published calculations projecting temperature increases that would be caused by
11 increased carbon dioxide concentrations in the atmosphere due to the burning of fossil fuels.

12 40. By 1957, scientists at the Scripps Institute published a warning in the peer-reviewed
13 literature that global warming "may become significant during future decades if industrial fuel
14 combustion continues to rise exponentially" and that "[h]uman beings are now carrying out a large
15 scale geophysical experiment" on the entire planet.⁵

16 41. In 1960, scientist Charles D. Keeling published results establishing that atmospheric
17 carbon dioxide concentrations were in fact rising.⁶

18 42. By 1979, the National Academy of Sciences, which is charged with providing
19 independent, objective scientific advice to the United States government, concluded that there was
20 "incontrovertible evidence" that carbon dioxide levels were increasing in the atmosphere as a result
21 of fossil fuel use, and predicted that a doubling of atmospheric carbon dioxide would cause an
22

23
24
25 ⁵ Revelle, Roger, and Hans E. Suess (1957). "Carbon Dioxide Exchange between Atmosphere
26 and Ocean and the Question of an Increase of Atmospheric CO₂ During the Past Decades." *Tellus*
27 9: 18-27, available at <http://onlinelibrary.wiley.com/doi/10.1111/j.2153-3490.1957.tb01849.x/epdf>.

28 ⁶ Keeling, Charles D. (1960). "The Concentration and Isotopic Abundances of Carbon Dioxide
in the Atmosphere." *Tellus* 12: 200-203, available at
<http://onlinelibrary.wiley.com/doi/10.1111/j.2153-3490.1960.tb01300.x/epdf>.

1 increase in global surface temperatures of between 1.5 °C and 4.5 °C [2.7 °F and 8.1 °F], with a
2 probable increase of 3 °C [5.4 °F].

3 43. In 1988, NASA scientist Dr. James E. Hansen testified to the U.S. Senate's Energy
4 and Natural Resources Committee that "[t]he greenhouse effect has been detected, and it is
5 changing our climate now."

6
7 44. More recent research has confirmed and expanded on these earlier findings. In
8 1988, the United Nations established the Intergovernmental Panel on Climate Change ("IPCC") to
9 assess the scientific and technical information relevant to global warming, and to provide advice to
10 all parties to the U.N. Framework Convention on Climate Change, including the United States.
11 The IPCC issues periodic assessment reports, which have become the standard scientific references
12 on global warming. As Defendant Exxon has put it, the IPCC is "the leading international
13 scientific authority on climate change."

14 45. In 1990, the IPCC issued its First Assessment Report ("FAR"). It stated that "we
15 are certain" that "emissions resulting from human activities are substantially increasing the
16 atmospheric concentrations of the greenhouse gases," including carbon dioxide and methane, and
17 that "these increases will enhance the greenhouse effect, resulting on average in an additional
18 warming of the Earth's surface."⁷ The IPCC's FAR also predicted that a "business as usual"
19 scenario (*i.e.* a future in which fossil fuel production and associated emissions continue to increase)
20 would cause global mean temperature during the next century to increase at a rate "greater than that
21 seen over the past 10,000 years," and "will result in a likely increase in global mean temperature of
22 about 1 °C [1.8 °F] above the present value by 2025 and 3 °C [5.4 °F] before the end of the next
23 century" – higher than temperatures have been in the last 150,000 years.⁸ The FAR also predicted
24 that business as usual would result in substantial sea level rise by 2100.⁹

25
26
27 ⁷ https://www.ipcc.ch/ipccreports/far/wg_I/ipcc_far_wg_I_spm.pdf, at Executive Summary xi.

28 ⁸ *Id.* at xi and xxviii.

⁹ *Id.* at Executive Summary xi.

1 46. The FAR further stated "with confidence" that continued emissions of carbon
2 dioxide "at present rates would commit us to increased concentrations for centuries ahead," and
3 that immediate reductions were required to stabilize carbon dioxide concentrations.

4 In 1995, in its Second Assessment Report ("SAR"), the IPCC concluded that the
5 "balance of evidence suggests a discernible human influence on global climate."
6 This causal finding was profoundly important as confirmation that human-caused
7 global warming had now been detected. By 2001, the IPCC strengthened its
8 causal conclusion, stating that it was "likely" (an IPCC term of art meaning a 66%
9 to 90% chance of being true) that temperature increases already observed were
10 attributable to human activity.¹⁰ The U.S. National Academy of Sciences
11 reviewed this finding and concluded that it was accurate.

12 47. The IPCC issued its most recent report, the Fifth Assessment, in 2013-14. It states
13 that it is "extremely likely" (95% to 100% likely) that "human influence has been the dominant
14 cause of the observed warming since the mid-20th century."¹¹

15 48. The increase in atmospheric carbon dioxide caused by the combustion of fossil fuels
16 has been clearly documented – and measured. Carbon dioxide from fossil fuels has a chemical
17 fingerprint and is the culprit; natural sources of carbon dioxide were in balance prior to the use of
18 fossil fuels and are not a cause of the global warming problem. Today, due primarily to the
19 combustion of fossil fuels produced by Defendants and others, the atmospheric level of carbon
20 dioxide is 410 ppm, higher than at any time during human civilization and likely higher than any
21 level in millions of years. The result has been dramatic planetary warming: sixteen of earth's
22 seventeen warmest years in the 136-year period of global temperature measurements have occurred
23 since 2001, and 2016 was the warmest year on record. As of July 2017, there were 391 months in
24 a row that were warmer than the twentieth century average. The years 2014, 2015 and 2016 were
25 the three hottest years ever recorded in California since modern temperature records were first
26 taken in 1895. California has warmed over 2 °F since 1895.

27 49. Scientists typically use "double CO₂," or twice the pre-industrial level of
28 atmospheric carbon dioxide concentration, as a standard reference for considering the warming
29 impact of increased greenhouse gases. Double CO₂ is 550 ppm. According to the IPCC, double

¹⁰ IPCC, Third Assessment Report, Working Group I, Summary for Policymakers at 10,
available at http://www.grida.no/climate/ipcc_tar/wg1/pdf/WG1_TAR-FRONT.pdf.

¹¹ IPCC, Climate Change 2013, The Physical Science Basis, Summary for Policymakers at 17,
available at https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf.

1 CO₂ will cause the global average surface air temperature to increase by 1.5 to 4.5 °C [2.7 to 8.1
2 °F] over the pre-industrial level, a rate of warming that is unprecedented in the history of human
3 civilization. By comparison, at the depths of the last ice age, 20,000 years ago, the global average
4 temperature of the Earth was only seven to eleven degrees Fahrenheit cooler than today. Globally,
5 approximately 1 °C [1.8 °F] of the temperature rise already has occurred, due primarily to carbon
6 dioxide and methane emissions from the combustion and use of fossil fuels.

7 50. Ongoing and future warming caused by past and ongoing use of massive quantities
8 of fossil fuels will cause increasingly severe harm to Oakland through accelerating sea level rise.
9 In 2013, the IPCC projected that between 2081 and 2100, the global average surface temperature
10 will have increased by 4.7 °F to 8.6 °F under business-as-usual, *i.e.*, with continued massive levels
11 of fossil fuel production. Global warming causes sea level rise by melting glaciers and sea ice, and
12 by causing seawater to expand. This acceleration of sea level rise is unprecedented in the history
13 of human civilization. Since 1990, the rate of sea level rise has more than doubled and it continues
14 to accelerate. The rate of ice loss from the Greenland and Antarctic Ice Sheets is increasing, and
15 these ice sheets soon will become the primary contributor to global sea level rise. With production
16 of fossil fuels continuing on its business-as-usual trajectory, the resulting warming presents a risk
17 of "rapidly accelerating and effectively irreversible ice loss." The melting of even a portion of the
18 West Antarctic Ice Sheet, the "most vulnerable major ice sheet in a warming global climate," will
19 cause especially severe impacts in California. Rapid ice sheet loss on Antarctica due to global
20 warming risks a sea level rise in California of ten feet by 2100. This would be catastrophic for
21 Oakland.

22 51. The Earth's climate can undergo an abrupt and dramatic change when a radiative
23 forcing agent, such as carbon dioxide, causes the climate system to reach a tipping point.
24 Defendants' massive production of fossil fuels increases the risk of reaching that tipping point,
25 triggering a sudden and potentially catastrophic change in climate. The rapidity of an abrupt
26 climate shift would magnify all the adverse effects of global warming. Crossing a tipping point
27 threshold also could lead to rapid disintegration of ice sheets on Greenland and/or Antarctica,
28 resulting in large and rapid increases in sea level rise.

V. DEFENDANTS HAVE PRODUCED MASSIVE QUANTITIES OF FOSSIL FUELS AND HAVE CONTINUED TO DO SO EVEN AS GLOBAL WARMING HAS BECOME GRAVELY DANGEROUS.

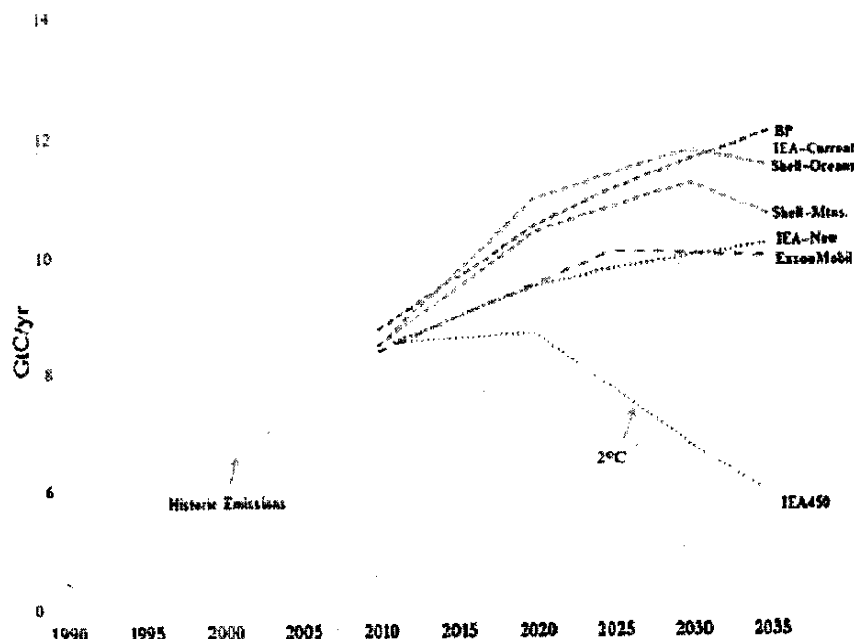
52. For many years, Defendants have produced massive quantities of fossil fuels that, when combusted, emit carbon dioxide, the most important greenhouse gas. Additionally, one of Defendants' primary fossil fuel products, natural gas, is composed of methane, which is the second most important greenhouse gas and which, as Defendants know, routinely escapes into the atmosphere from facilities operated by Defendants' customers and also consumers. The greenhouse gases from the usage of defendants' fossil fuels remain in the atmosphere for long periods of time: a substantial portion of carbon dioxide emissions remains in the atmosphere for over 1,000 years after they are emitted.¹² As noted above, Defendants have produced such vast quantities of fossil fuels that they are five of the ten largest producers in all of history, with most of the CO₂ that has built up in the atmosphere from the use of their products dating from 1980 or later. The cumulative greenhouse gases in the atmosphere attributable to each Defendant has increased the global temperature and contributed to sea level rise, including in Oakland.

53. Once Defendants produce fossil fuels by, for example, extracting oil from the ground, those fossil fuels are used exactly as intended and emit carbon dioxide.

54. Despite their internal warnings, an overwhelming scientific consensus on the unfolding imminent catastrophe, and actual gravely dangerous impacts from global warming, Defendants to this day maintain high levels of fossil fuel production. This production will intensify future warming and exacerbate Oakland's injuries from sea level rise.

55. Defendants' conduct will continue to cause ongoing and increasingly severe sea level rise harms to Oakland because Defendants are committed to a business model of massive fossil fuel production that they know causes a gravely dangerous rate of global warming. The following graph from a 2015 study published in the peer-reviewed scientific literature demonstrates the grave indifference Defendants BP, Shell and Exxon have for human safety and welfare.

¹² IPCC, Climate Change 2013, The Physical Science Basis, Summary for Policymakers at 28, available at https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf.



The graph compares the greenhouse gas emissions trajectory necessary to prevent global warming from exceeding a 2 °C increase over the pre-industrial temperature (IEA 450 from International Energy Agency) to BP, Exxon and Shell's projections of total worldwide future emissions that they use to make long-term business plans.¹³ The 2 °C level of global warming is widely considered to be a red line of highly dangerous global warming. Upon information and belief, all Defendants base their long-term business plans upon similar projections.

VI. DEFENDANTS HAVE PRODUCED MASSIVE AMOUNTS OF FOSSIL FUELS DESPITE HAVING FULL KNOWLEDGE FROM THEIR IN-HOUSE SCIENTIFIC STAFF, OR FROM API, THAT FOSSIL FUELS WOULD CAUSE GLOBAL WARMING.

56. For decades, Defendants have known that their fossil fuel products pose risks of "severe" and even "catastrophic" impacts on the global climate through the work and warnings of their own scientists or through their trade association. Yet each Defendant decided to continue its conduct and commit itself to massive fossil fuel production. This was a deliberate decision to place company profits ahead of human safety and well-being and property, and to foist onto the public the costs of abating and adapting to the public nuisance of global warming.

¹³ Frumhoff, et al., *The climate responsibilities of industrial carbon producers*, *Climatic Change*, at 167 (2015), available at <https://link.springer.com/article/10.1007/s10584-015-1472-5>.

1 57. The American Petroleum Institute ("API") is a national trade association that
2 represents the interests of America's oil and natural gas industry. At all relevant times,
3 Defendants, their corporate predecessors and/or their operating subsidiaries over which they
4 exercise substantial control, have been members of the API. On information and belief, the API
5 has acted as Defendants' agent with respect to global warming, received funding from Defendants
6 for the API's global warming initiatives, and shared with Defendants the information on global
7 warming described herein.

8 58. Beginning in the 1950s, the API repeatedly warned its members that fossil fuels
9 posed a grave threat to the global climate. These warnings have included, for example, an
10 admission in 1968 in an API report predicting that carbon dioxide emissions were "almost certain"
11 to produce "significant" temperature increases by 2000, and that these emissions were almost
12 certainly attributable to fossil fuels. The report warned of "major changes in the earth's
13 environment" and a "rise in sea levels," and concluded: "there seems to be no doubt that the
14 potential damage to our environment could be severe."¹⁴ Similar warnings followed in the ensuing
15 decades, including reports commissioned by the API in the 1980s that there was "scientific
16 consensus" that catastrophic climate change would ensue unless API members changed their
17 business models, and predictions that sea levels would rise considerably, with grave consequences,
18 if atmospheric concentrations of CO₂ continued to increase.

19 59. The API's warnings to Defendants included:

20 a) In 1951, the API launched a project to research air pollution from petroleum
21 products, and attributed atmospheric carbon to fossil fuel sources. By 1968, the API's scientific
22 consultant reported to the API that carbon dioxide emissions were "almost certain" to produce
23 "significant" temperature increases by 2000, and that these emissions were almost certainly
24 attributable to fossil fuels. The report warned of "major changes in the earth's environment" and a
25
26

27 ¹⁴ E. Robinson & R.C. Robbins, Final Report, Sources, Abundance, and Fate of Gaseous
28 Atmospheric Pollutants, SRI Project PR-6755, prepared for American Petroleum Institute, at 109-
110, available at <https://www.smokeandfumes.org/#/documents/document116>.

1 “rise in sea levels,” and concluded: “there seems to be no doubt that the potential damage to our
2 environment could be severe.”¹⁵

3 b) In 1980, an API task force on climate change invited Dr. J.A. Laurman, a “recognized
4 expert in the field of CO₂ and climate,” to make a presentation to the API CO₂ and Climate
5 Task Force. Attendees to the presentation included scientists and executives from Texaco
6 (a predecessor to Chevron), Exxon and SOHIO (a predecessor to BP). Dr. Laurman
7 informed the API task force that there was a “Scientific Consensus on the Potential for
8 Large Future Climatic Response to Increased CO₂ Levels.” He further informed the API
9 task force in his presentation that, though exact temperature increases were difficult to
10 predict, the “physical facts agree on the probability of large effects 50 years away.” His
11 own temperature forecast was of a 2.5 °C [4.5 °F] rise by 2035, which would likely have
12 “MAJOR ECONOMIC CONSEQUENCES,” and a 5 °C [9 °F] rise by 2067, which would
13 likely produce “GLOBALLY CATASTROPHIC EFFECTS.” He also suggested that,
14 despite uncertainty, “THERE IS NO LEEWAY” in the time for acting. API minutes show
15 that the task force discussed topics including “the technical implications of energy source
16 changeover,” “ground rules for energy release of fuels and the cleanup of fuels as they
17 relate to CO₂ creation,” and researching “the Market Penetration Requirements of
18 Introducing a New Energy Source into World Wide Use.”¹⁶

19 (c) In March 1982, an API-commissioned report showed the average increase in global
20 temperature from a doubling of atmospheric concentrations of CO₂ and projected, based upon
21 computer modeling, global warming of between 2 and 3.5 °C [3.6 to 6.3 °F]. The report projected
22
23
24
25

26 ¹⁵ E. Robinson & R.C. Robbins, Final Report, Sources, Abundance, and Fate of Gaseous
27 Atmospheric Pollutants, SRI Project PR-6755, prepared for American Petroleum Institute, at 109-
28 110, available at <https://www.smokeandfumes.org/#/documents/document16>.

¹⁶ CO₂ and Climate Task Force, Minutes of Meeting, at 1-2 & Attachment B, available at
<http://insideclimatenews.org/sites/default/files/documents/AQ-9%20Task%20Force%20Meeting%20%281980%29.pdf>.

1 potentially "serious consequences for man's comfort and survival," and noted that "the height of
2 the sea level can increase considerably."¹⁷

3 60. In addition to the API information, some of the Defendants produced their own
4 internal analyses of global warming. For example, newly disclosed documents demonstrate that
5 Exxon internally acknowledged in the late 1970s and early 1980s that its products posed a
6 "catastrophic" threat to the global climate, and that fossil fuel use would have to be strictly limited
7 to avoid severe harm.

8 a) Exxon management was informed by its scientists in 1977 that there was an
9 "overwhelming[]" consensus that fossil fuels were responsible for atmospheric carbon dioxide
10 increases. The presentation summarized a warning from a recent international scientific conference
11 that "IT IS PREMATURE TO LIMIT USE OF FOSSIL FUELS BUT THEY SHOULD NOT BE
12 ENCOURAGED." The scientist warned management in a summary of his talk: "Present thinking
13 holds that man has a time window of five to ten years before the need for hard decisions regarding
14 changes in energy strategies might become critical."¹⁸

15 b) In a 1979 Exxon internal memo, an Exxon scientist calculated that 80% of fossil
16 fuel reserves would need to remain in the ground and unburned to avoid greater than a doubling of
17 atmospheric carbon dioxide.¹⁹

18 c) In a 1981 internal Exxon memo, a scientist and director at the Exxon Research and
19 Engineering Company warned that "it is distinctly possible" that CO₂ emissions "will later produce
20
21
22
23

24 17

25 <http://insideclimatenews.org/sites/default/files/documents/API%201982%20Climate%20models%20and%20CO2%20warming.pdf> at 3, 5.

26 18

27 https://insideclimatenews.org/system/files_force/documents/James%20Black%201977%20Presentation.pdf?download=1 at 2.

28 19

<http://insideclimatenews.org/sites/default/files/documents/CO2%20and%20Fuel%20Use%20Projections.pdf>
at 3.

effects which will indeed be catastrophic (at least for a substantial fraction of the earth's population).²⁰

d) A year later, the same scientist wrote another memo to Exxon headquarters, which reported on a "clear scientific consensus" that "a doubling of atmospheric CO₂ from its pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5) °C [2.7 °F to 8.1 °F]."²¹ The clear scientific consensus was based upon computer modeling, which Exxon would later attack as unreliable and uncertain in an effort to undermine public confidence in climate science.²² The memo continued: "There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate, including rainfall distribution and alterations in the biosphere."

e) In November 1982, an Exxon internal report to management warned that "substantial climatic changes" could occur if the average global temperature rose "at least 1°C [1.8 °F] above [1982] levels," and that "[m]itigation of the 'greenhouse effect' would require major reductions in fossil fuel combustion." The report then warns Exxon management that "there are some potentially catastrophic events that must be considered," including the risk that "if the Antarctic ice sheet which is anchored on land should melt, then this could cause a rise in sea level on the order of 5 meters." The report includes a graph demonstrating the expected future global warming from the "CO₂ effect" demonstrating a sharp departure from the "[r]ange of natural fluctuations." This graph is attached hereto as Exhibit 3.²³

f) By 1983, Exxon had created its own climate models, which confirmed the main conclusions from the earlier memos. Starting by at least the mid-1980s, Exxon used its own

²⁰

<http://insideclimatenews.org/sites/default/files/documents/%2522Catastrophic%2522%20Effects%20Letter%20%281981%29.pdf>

²¹ Cohen memo to Natkin at 1 (Sept. 2, 1982), *available at* <http://insideclimatenews.org/documents/consensus-co2-impacts-1982>.

²² See *infra* ¶ 76.

²³ M. B. Glaser, Memo to R.W. Cohen et al. on "CO₂ Greenhouse Effect," Nov. 12, 1982, at 2, 12-13, 28, *available at* <http://insideclimatenews.org/sites/default/files/documents/1982%20Exxon%20Primer%20on%20CO2%20Greenhouse%20Effect.pdf>.

1 climate models, and governmental ones to gauge the impact that climate change would have on its
2 own business operations and subsequently took actions to protect its own business assets based
3 upon these modeling results.

4 61. Exxon's early research and understanding of the global warming impacts of its
5 business was not unique among Defendants. For example, at least as far back as 1970, Defendants
6 Shell and BP began funding scientific research in England to examine the possible future climate
7 changes from greenhouse gas emissions. Shell produced a film on global warming in 1991, in
8 which it admitted that there had been a "marked increase [in global temperatures] in the 1980s" and
9 that the increase "does accord with computer models based on the known atmospheric processes
10 and predicted buildup of greenhouse gases."²⁴ It acknowledged a "serious warning" that had been
11 "endorsed by a uniquely broad consensus of scientists" in 1990. In the film, Shell further admits
12 that by 2050 continued emissions of greenhouse gases at high levels would cause a global average
13 temperature increase of 1.5 to 4 °C (2.7 to 7.2 °F); that one meter of sea level rise was likely in the
14 next century; that "this could be disastrous;" and that there is a "possibility of change faster than at
15 any time since the end of the ice age, change too fast, perhaps, for life to adapt without severe
16 dislocation."

17
18 **VII. DESPITE THEIR EARLY KNOWLEDGE THAT GLOBAL WARMING WAS**
19 **REAL AND POSED GRAVE THREATS, DEFENDANTS PROMOTED FOSSIL FUELS**
20 **FOR PERVASIVE USE WHILE DOWNPLAYING THE REALITY AND RISKS OF**
21 **GLOBAL WARMING.**

22 62. Defendants have extensively promoted fossil fuel use in massive quantities through
23 affirmative advertising for fossil fuels and downplaying global warming risks. First, Defendants
24 promoted massive use of fossil fuels by misleading the public about global warming by
25 emphasizing the uncertainties of climate science and through the use of paid denialist groups and
26 individuals – a striking resemblance to Big Tobacco's propaganda campaign to deceive the public
27 about the adverse health effects of smoking. Defendants' campaign inevitably encouraged fossil
28 fuel consumption at levels that were (as Defendants knew) certain to severely harm the public.

²⁴ <https://www.youtube.com/watch?v=0VOWi8oVXmo>.

1 Second, Defendants' fossil fuel promotions through frequent advertising for their fossil fuel
2 products, including promotions claiming that consumption at current and even expanded levels is
3 "responsible" or even "respectful" of the environment, have encouraged continued fossil fuel
4 consumption at massive levels that Defendants knew would harm the public.²⁵

5 **A. Defendants borrowed the Big Tobacco playbook in order to promote their products.**

6 63. Notwithstanding Defendants' early knowledge of climate change, Defendants have
7 engaged in advertising and public relations campaigns intended to promote their fossil fuel
8 products by downplaying the harms and risks of global warming. Initially, the campaign tried to
9 show that global warming was not occurring. More recently, the campaign has sought to minimize
10 the risks and harms from global warming. The campaign's purpose and effect has been to help
11 Defendants continue to produce fossil fuels and sell their products on a massive scale. This
12 campaign was executed in large part by front groups funded by Defendants, either directly or
13 through API, and through statements made by Defendants directly.

14 64. One front group was the Global Climate Coalition ("GCC"). The GCC operated
15 between 1989 and 2002. Its members included the API, and predecessors or subsidiaries of
16 Defendants. William O'Keefe, former president of the GCC, was also a former executive of the
17 API.

18 65. The GCC spent millions of dollars on campaigns to discredit climate science,
19 including \$13 million on one ad campaign alone. The GCC distributed a video to hundreds of
20 journalists which claimed that carbon dioxide emissions would increase crop production and feed
21 the hungry people of the world.

22 66. However, internal GCC documents admitted that their "contrarian" climate theories
23 were unfounded. In December 1995, the GCC's Science and Technology Advisory Committee
24 ("GCC-STAC"), whose members included employees of Mobil Oil Corporation (an Exxon
25 predecessor) and API, drafted a primer on the science of global warming for GCC members. The
26

27 ²⁵ ConocoPhillips, the changing energy landscape, *available at*
28 <http://www.conocophillips.com/who-we-are/our-company/spirit-values/responsibility/Pages/the-changing-energy-landscape.aspx>; Chevron TV ad (2009), <https://www.youtube.com/watch?v=-KyjTGMVTKA>.

1 primer concluded that the GCC's contrarian theories "do not offer convincing arguments against
2 the conventional model of greenhouse gas emission-induced climate change." Due to this
3 inconvenient conclusion, at its next meeting, in January 1996, the GCC-STAC decided simply to
4 drop this seven-page section of the report. Nonetheless, for years afterward, the GCC and its
5 members continued to tout their contrarian theories about global warming, even though the GCC
6 had admitted internally these arguments were invalid.

7 67. In February 1996, an internal GCC presentation stated that a doubling of carbon
8 dioxide levels over pre-industrial concentrations would occur by 2100 and cause "an average rate
9 of warming [that] would probably be greater than any seen in the past 10,000 years." The
10 presentation noted "potentially irreversible" impacts that could include "significant loss of life."

11 68. Certain Defendants also funded another front group in the 1990s, the Global
12 Climate Science Communications Team ("GCSCCT"). GCSCCT members included Exxon, Chevron,
13 and API. A 1998 GCSCCT task force memo outlined an explicit strategy to invest millions of
14 dollars to manufacture uncertainty on the issue of global warming, directly emulating a similar
15 disinformation campaign by the tobacco industry. The memo stated: "*Victory Will Be Achieved*
16 *When,*" among other things, "*Average citizens 'understand' (recognize) uncertainties in climate*
17 *science,*" public "*recognition of uncertainty becomes part of the 'conventional wisdom,'*" and the
18 "*Media 'understands' (recognizes) uncertainties in climate science.'*"²⁶ The plan stated that
19 progress would be measured by the percentage of new articles that raise questions about climate
20 change.

21 69. Over at least the last nineteen years, Exxon in particular has paid researchers and
22 front groups to create uncertainties about basic climate change science and used denialist groups to
23 attack well-respected scientists. These were calculated business decisions by Exxon to undermine
24 climate change science and bolster production of fossil fuels.

25 70. Between 1998 and 2014, Exxon paid millions of dollars to organizations to promote
26 disinformation on global warming. During the early- to mid-1990s, Exxon directed some of this
27 funding to Dr. Fred Seitz, Dr. Fred Singer, and/or Seitz and Singer's Science and Environmental
28

²⁶ Global Climate Science Communications: Action Plan, Apr. 3, 1998.

1 Policy Project ("SEPP") in order to launch repeated attacks on mainstream climate science and
2 IPCC conclusions, even as Exxon scientists participated in the IPCC. Seitz, Singer and SEPP had
3 previously been paid by the tobacco industry to create doubt in the public mind about the hazards
4 of smoking. Seitz and Singer were not climate scientists.

5 71. Exxon's promotion of fossil fuels also entailed the funding of denialist groups that
6 attacked well-respected scientists Dr. Benjamin Santer and Dr. Michael Mann, maligning their
7 characters and seeking to discredit their scientific conclusions with media attacks and bogus studies
8 in order to undermine the IPCC's 1995 and 2001 conclusion that human-driven global warming is
9 now occurring.

10 72. One of Defendants' most frequently used denialists has been an aerospace engineer
11 named Wei Hock Soon. Between 2001 and 2012, various fossil fuel interests, including Exxon and
12 API, paid Soon over \$1.2 million. Soon was the lead author of a 2003 article which argued that the
13 climate had not changed significantly. The article was widely promoted by other denial groups
14 funded by Exxon, including via "Tech Central Station," a website supported by Exxon. Soon
15 published other bogus "research" in 2009, attributing global warming to solar activity, for which
16 Exxon paid him \$76,106. This 2009 grant was made several years after Exxon had publicly
17 committed not to fund global warming deniers.

18 73. Until recently, API's website referred to global warming as "possible man-made
19 warming" and claimed that the human contribution is "uncertain." The API removed this
20 statement from its web site in 2016 when journalistic investigations called attention to the API's
21 misleading statements on global warming and its 1970s/1980s task force on global warming.

22 74. In 2000, Exxon took out an advertisement on the Op-Ed page of the *New York*
23 *Times* entitled "Unsettled Science." The advertisement claimed that "scientists remain unable to
24 confirm" the proposition that "humans are causing global warming."²⁷ This was six years after the
25 IPCC had confirmed the causal link between planetary warming and anthropogenic greenhouse gas
26 emissions – a historic moment in climate science – and some eighteen years after Exxon itself had
27

28 ²⁷ <https://assets.documentcloud.org/documents/705605/xom-nyt-2000-3-23-unsettledscience.pdf>.

1 admitted in a 1982 internal memoranda to corporate headquarters that there was "a clear scientific
2 consensus" that greenhouse gas emissions would cause temperatures to rise.

3 75. On May 27, 2015, at Exxon's annual shareholder meeting, then-CEO Rex Tillerson
4 misleadingly downplayed global warming's risks by stating that climate models used to predict
5 future impacts were unreliable: "What if everything we do it turns out our models were really lousy
6 and we achieved all of our objectives and it turned out the planet behaved differently because the
7 models just weren't good enough to predict it?" But as noted above, in 1982 Exxon's scientific
8 staff stated, based upon the climate models, that there was a "clear scientific consensus" with
9 respect to the level of projected future global warming and starting shortly thereafter Exxon relied
10 upon the projections of climate models, including its own climate models, in order to protect its
11 own business assets.

12 76. Until recently Exxon's website continued to emphasize the "uncertainty" of global
13 warming science and impacts: "current scientific understanding provides limited guidance on the
14 likelihood, magnitude, or time frame" of events like temperature extremes and sea level rise.²⁸
15 Exxon's insistence on crystal ball certainty was clear misdirection, since Exxon knew that the
16 fundamentals of climate science were well settled and showed global warming to present a clear
17 and present danger.

18 **B. Defendants' direct promotion of fossil fuels.**

19 77. Defendants continue to promote massive fossil fuel use by the public
20 notwithstanding that global warming is happening, that global warming is primarily caused by their
21 fossil fuels, and that global warming is causing severe injuries. Defendants promote the massive
22 use of fossil fuels through advertisements lauding fossil fuels as "responsible" and "respectful" to
23 the environment, identifying fossil fuels as the only way to sustain modern standards of living, and
24 promoting sales of their fossil fuels without qualification. Defendants and/or their U.S.
25 subsidiaries are members of the APL. The API also promotes the benefits of fossil fuel products on
26

27
28 ²⁸ Formerly found at <http://corporate.exxonmobil.com/en/current-issues/climate-policy/meeting-global-needs/managing-climate-change-business-risks>.

1 behalf of Defendants and its other members. Defendants' message to consumers is that fossil fuels
2 may continue to be burned in massive quantities without risking significant injuries.

3 78. Defendants bombard the public and consumers with the following advertisements,
4 although these are a mere sliver of Defendants' extensive campaigns. Defendants' advertisements
5 must be understood in their proper context – as following Defendants' substantial early knowledge
6 on global warming risks and impacts, and following a decades-long campaign of misleading
7 statements on global warming that primed the pump for massive use of their fossil fuel products.

8 a) Exxon's "Lights Across America" website advertisement states that natural gas is
9 "helping dramatically reduce America's emissions"²⁹ even though natural gas is a fossil fuel
10 causing widespread planetary warming and harm to coastal cities like Oakland and the use of
11 natural gas competes with wind and solar, which have no greenhouse gas emissions.

12 b) In 2017, Shell's CEO promoted massive fossil fuel use by stating that the fossil fuel
13 industry could play a "crucial role" in lifting people out of poverty.³⁰ A Shell website promotion
14 states: "We are helping to meet the world's growing energy demand while limiting CO2 emissions,
15 by delivering more cleaner-burning natural gas."³¹

16 c) BP touts natural gas on its website as "a vital lower carbon energy source" and as
17 playing a "crucial role" in a transition to a lower carbon future.³² BP promotes continued massive
18 fossil fuel use as enabling two billion people to be lifted out of poverty.

19 d) Chevron's website implores the public that "we produce safe, reliable energy
20 products for people around the world."³³ Chevron also promotes massive use of fossil fuels as the
21 key to lifting people out of poverty: "Reliable and affordable energy is necessary for improving
22

23 ²⁹

https://www.youtube.com/watch?v=tMu1CBjXfq4&list=PLIrXlHj7zayYGaExfTp_B4t6ggTtkGf9A&index=6 (at 0:46).

24 ³⁰ Shell CEO speech, Mar. 9, 2017, *available at* <http://www.shell.com/media/speeches-and-articles/2017/deliver-today-prepare-for-tomorrow.html>.

25 ³¹ Shell United States, Transforming Natural Gas, *available at* <http://www.shell.us/energy-and-innovation/transforming-natural-gas.html>.

26 ³² <http://www.bp.com/en/global/corporate/energy-economics/energy-outlook/energy-overview-the-base-case.html>.

27 ³³ Chevron, Products and Services, *available at* <https://www.chevron.com/operations/products-services>.

standards of living, expanding the middle class and lifting people out of poverty. Oil and natural gas will continue to fulfill a significant portion of global energy demand for decades to come – even in a carbon-constrained scenario.” A prior Chevron advertisement still available on the web promotes Chevron fossil fuels on a massive scale by stating that “our lives demand oil.”³⁴

e) ConocoPhillips promotes its fossil fuel products by stating that it “responsibly suppl[ies] the energy that powers modern life.”³⁵ Similarly, ConocoPhillips has the following advertising slogan on its website: “Providing energy to improve quality of life.”³⁶

79. Contrary to Defendants’ claims that the use of massive amounts of fossil fuels is required to lift people out of poverty, the IPCC has concluded: “Climate-change impacts are expected to exacerbate poverty in most developing countries and create new poverty pockets in countries with increasing inequality, in both developed and developing countries.”³⁷

80. Defendants BP and Exxon have also used long-term energy forecasts and similar reports to promote their products under the guise of expert, objective analysis. These forecasts have repeatedly sought to justify heavy reliance on fossil fuels by overstating the cost of renewable energy.

81. Defendants’ energy forecasts are aimed in substantial part at consumers and are promoted to the public through their respective websites and other direct media. Exxon continues to promote its annual “Outlook for Energy” reports in videos currently available on the internet. But Defendants’ energy “analyses” are self-serving means of promoting fossil fuels and undercutting non-dangerous renewable energy and clean technologies. For example, Exxon has claimed in a recent forecast that natural gas is a cheaper way to reduce carbon dioxide emissions than wind or solar power while BP has claimed that solar and wind power will be more expensive

³⁴ Chevron TV ad (2009), available at <https://www.youtube.com/watch?v=-KyjTGMVTkA>.

³⁵ ConocoPhillips, the changing energy landscape, available at <http://www.conocophillips.com/who-we-are/our-company/spirit-values/responsibility/Pages/the-changing-energy-landscape.aspx>.

³⁶ ConocoPhillips, Producing energy, available at <http://www.conocophillips.com/what-we-do/producing-energy/Pages/default.aspx>.

³⁷ IPCC, Climate Change 2014: Mitigation of Climate Change, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Summary for Policymakers at 20, available at https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_full.pdf.

1 in 2050 than natural gas or coal even though wind and solar are already cheaper than natural gas or
2 coal in some circumstances. Exxon and BP also have understated in recent "forecasts" the
3 expected market share of electric vehicles even as electric vehicle technology has taken off, prices
4 have dropped and GM announced (in 2015) that it was investing billions in electric cars because
5 the "future is electric."

6 82. Defendants' reports also promote their fossil fuel products by warning consumers of
7 supposed downsides to reducing fossil fuel use and carbon dioxide emissions. For example,
8 Exxon's most recent report claims that the costs of carbon dioxide reductions, are "ultimately
9 borne by consumers and taxpayers."

10 83. These reports by BP and Exxon, and a similar one by Shell, predict massive
11 increases in fossil fuel use over roughly the next 15 years. This is part of a larger strategy of
12 "mak[ing] the case for the necessary role of fossil fuels," as BP's chief executive stated in a
13 moment of candor in 2015.

14 **VIII. OAKLAND WILL INCUR SERIOUS CLIMATE CHANGE INJURIES THAT WILL**
15 **REQUIRE BILLIONS IN EXPENDITURES TO ABATE THE GLOBAL WARMING**
16 **NUISANCE.**

17 84. According to a 2012 California governmental report, by 2050, California is
18 projected to warm by approximately 2.7 °F above the average temperature in 2000, regardless of
19 the level of future emissions, a rate of warming three times greater than over the last century. By
20 2100, California's average temperatures could increase by 8.6 °F, if not more. Oakland's average
21 summertime high temperature is projected to increase from 72.36 °F to 79.61 °F by 2100, making
22 Oakland's summers similar to those now experienced in Vista, CA, some 400 miles to the south.
23 Continued production of massive amounts of fossil fuels will exacerbate global warming, increase
24 sea level rise and result in grave harms to Oakland.

25 85. Global warming has caused and continues to cause accelerated sea level rise in San
26 Francisco Bay and the adjacent ocean with severe, and potentially catastrophic, consequences for
27 Oakland. Scientists recently concluded that coastal California is already experiencing impacts
28 from accelerated sea level rise, including "more extensive coastal flooding during storms, periodic

1 tidal flooding, and increased coastal erosion.” In the last 100 years, the California coast has
2 experienced sea level rise of 6.7 to 7.9 inches.

3 86. Storms with their attendant surges and flooding occur on top of and superimposed
4 on sea level rise, causing storm surges to be greater, extend farther inland, and cause more
5 extensive damage – including greater inundation and flooding of public and private property in
6 Oakland. A 100-year flood event is, an event that – without global warming – normally has a 1%
7 chance of happening every year. But by 2050, a “100-year flood” in the Oakland vicinity is
8 expected to occur on average once every 2.3 years and by 2100 to occur 44 times per year – or
9 almost once per *week*. Similarly, the 500-year storm surge flood would occur 13 times per year by
10 2100. Even with lower levels of future fossil fuel production, there will be substantial increases in
11 flood frequencies in Oakland due to past and ongoing fossil fuel combustion.

12 87. Accelerated sea level rise in California is causing and will continue to cause
13 inundation of both public and private property located within Oakland. Oakland is projected to
14 experience up to 66 inches of sea level rise by 2100, putting at risk thousands of city residents. Sea
15 level rise of even 16 inches will put at risk numerous city facilities, including schools, fire stations,
16 health care facilities, and homeless shelters located in low-lying areas of Oakland. Projected sea
17 level rise in Oakland threatens property with a total replacement cost of between \$22 and \$38
18 billion. The Oakland International Airport is located at only 5.6 feet above sea level and is one of
19 the four lowest-lying airports in the country. The 2014 National Climate Assessment, produced by
20 over 300 experts and the National Academy of Sciences, specifically identified Oakland’s airport
21 as threatened by sea level rise; it is more than a foot lower than New York-LaGuardia, which was
22 flooded during Hurricane Sandy, a one-in-260 year event. Sea level rise and related flooding also
23 imminently threaten Oakland’s sewer system. Rising sea levels imminently threaten to prevent
24 water from discharging properly from the sewer system, which will cause sewage to back up and
25 flood certain sections of the city. Oakland has already begun to feel injury from sea level rise,
26 although its most severe injuries by far are the injuries that will occur in the future if prompt action
27 is not taken to protect Oakland and its residents from rising sea levels caused by global warming.
28 The sea level rise projection is an understatement in light of a new, 2017 report that sea level is

1 likely to rise faster than projected and could reach as much as a catastrophic ten feet by the end of
2 the century.³⁸

3 88. Oakland must adapt now to ongoing sea level rise to abate ongoing damage to
4 property, facilities, and equipment, with risks of increasingly severe damage in the future. Oakland
5 is actively planning to protect itself from sea level rise because it recognizes that the ongoing
6 harms will imminently become more severe absent adaptation. The City of Oakland already is
7 taking action to adapt to accelerated sea level rise. In 2016, for example, Oakland adopted a five-
8 year Local Hazard Mitigation Plan that analyzes risks from sea level rise, identifies mitigation
9 measures to reduce those risks, and contains a five-year implementation plan. Oakland has been
10 working to identify specific infrastructure necessary for adaptation, including upgrades to sewer
11 and storm water infrastructure, protecting Oakland International Airport, and armoring Oakland's
12 coast. For example, significant flood protection infrastructure is planned for the airport, including
13 the Old Earhart Road Floodwall Improvement (estimated to cost \$800,000) and improvements to
14 the existing, 4.5-mile Airport Perimeter Dike (estimated to cost \$55 million). Oakland also plans
15 to complete a \$2 million Sea Level Vulnerability and Assessment Improvement Plan for the Port of
16 Oakland, and it is working with the San Francisco Bay Conservation and Development
17 Commission on a regional study of sea level rise risk. The magnitude of the actions needed to
18 abate harms from sea level rise and the amount of property at risk will increase in light of the
19 rapidly accelerating sea level rise.

20 89. Oakland is already experiencing, and working to abate, current harms caused by sea
21 level rise. But while harms to Oakland and its residents have commenced, additional far more
22 severe injuries will occur in the future if prompt action is not taken to protect Oakland and its
23 residents from rising sea levels. Indeed, the sea level rise harms inflicted on Oakland by global
24 warming are insidious partly because they are projected to continue, and to worsen, far into the
25 future. Pervasive fossil fuel combustion and greenhouse gas emissions to date will cause ongoing
26 and future harms regardless of future fossil fuel combustion or future greenhouse gas emissions.
27 Future production and use of fossil fuels will exacerbate sea level rise and require even greater

28 ³⁸ Rising Seas in California.

1 expenditures to abate the injuries. Oakland must plan for and adapt to sea level rise future harms
2 now to ensure that abatement of ongoing and future sea level rise harms is done as efficiently and
3 effectively as possible and in order to protect human well-being and public and private property
4 before it is too late. Additionally, the significant infrastructure needed to abate global warming
5 requires long lead times for planning, financing, and implementation. Planning to abate the known
6 and projected adverse effects of global warming on Oakland and its citizens remains underway,
7 and will continue. Sea level rise impacts in the future are imminent in the context of planning for
8 and carrying out large-scale, complex infrastructure projects to protect Oakland from sea level rise.

9 90. Sea level rise, storm surges, and flooding caused by global warming threaten not
10 only the physical infrastructure and property of Oakland and its citizens, but also the safety, lives,
11 daily way of life, sense of community, and security of Oakland residents. A severe storm surge
12 coupled with higher sea levels caused by global warming could occur at any time, potentially
13 resulting in the loss of life and extensive damage to public and private property. The risk of
14 catastrophic sea level rise harm to Oakland and its citizens will increase, just as rising sea levels
15 will continue to cause regular damage, the longer concrete action is not taken to abate the harms
16 and effects of sea level rise.

17 91. Many of the Oakland residents who are likely to be most affected by climate change
18 are low-income and/or people of color. As the U.S. government has pointed out, people of color,
19 low-income groups, and certain immigrant groups are (e.g., because of poverty, chronic health
20 conditions, and social isolation) potentially more "vulnerable" to climate change impacts, including
21 heat waves, flooding, and degraded air quality. This is true in Oakland, where "socially
22 vulnerable" individuals such as African Americans, Hispanics and other people of color tend to
23 live at lower elevations most affected by sea level rise and higher storm surges. These populations
24 also face challenges due to the legacies of slavery, such as redlining, predatory mortgage and other
25 lending, systemic racism and discrimination in securing insurance and other assets that would
26 protect them from the consequences of global warming and the ensuing climate change. More
27 affluent residents live farther from the Bay and at higher elevations. For example, of the City of
28 Oakland population that lives on land within three vertical feet of the current local high tide line,

1 more than 70% have been categorized as having high "social vulnerability." This makes it all the
2 more imperative for the People to act now to prevent harm, as those most vulnerable have the
3 fewest resources to protect themselves.

4 92. Building infrastructure to protect Oakland and its residents, will, upon information
5 and belief, cost billions of dollars.

6 **IX. CAUSE OF ACTION: PUBLIC NUISANCE ON BEHALF OF THE PEOPLE**

7 93. The People incorporate by reference the preceding paragraphs.

8 94. The People of the State of California, acting by and through the Oakland City
9 Attorney, bring this claim seeking abatement pursuant to California public nuisance law, including
10 section 731 of the California Code of Civil Procedure, and Civil Code sections 3479, 3480, 3491,
11 and 3494.

12 95. Defendants' production and promotion of massive quantities of fossil fuels, and
13 their promotion of those fossil fuels' pervasive use, has caused, created, assisted in the creation of,
14 contributed to, and/or maintained and continues to cause, create, assist in the creation of, contribute
15 and/or maintain to global warming-induced sea level rise, a public nuisance in Oakland.

16 Defendants, both individually and collectively, are substantial contributors to the global warming-
17 induced sea level rise and the People's attendant injuries and threatened injuries. The People's
18 injuries and threatened injuries from each Defendant's contributions to global warming are
19 indivisible injuries. Each Defendant's past and ongoing conduct is a direct and proximate cause of
20 the People's injuries and threatened injuries. Defendants each should have known that this
21 dangerous global warming with its attendant harms on coastal cities like Oakland would occur
22 before it even did occur, and each Defendant in fact did have such knowledge. Each Defendant has
23 at all relevant times been aware, and continues to be aware, that the inevitable emissions of
24 greenhouse gases from the fossil fuels it produces combines with the greenhouse gas emissions
25 from fossil fuels produced by the other Defendants, among others, to result in dangerous levels of
26 global warming with grave harms for coastal cities like Oakland. Defendants were aware of this
27 dangerous global warming, and of its attendant harms on coastal cities like Oakland, even before
28 those harms began to occur. Defendants' conduct constitutes a substantial and unreasonable

1 interference with and obstruction of public rights and property, including, *inter alia*, the public
2 rights to health, safety and welfare of Oakland residents and other citizens whose safety and lives
3 are at risk from increased storm surge flooding and whose public and private property, including
4 key infrastructure properties such as Oakland International Airport, is threatened with widespread
5 damage from global warming-induced sea level rise, greater storm surges, and flooding.

6 96. Defendants, individually and collectively, are substantial contributors to global
7 warming and to the injuries and threatened injuries suffered by the People. Defendants have
8 caused or contributed to accelerated sea level rise from global warming, which has and will
9 continue to injure public property and land located in the City of Oakland, including Oakland
10 International Airport, through increased inundation, storm surges, and flooding, and which
11 threatens the safety and lives of Oakland residents. Defendants have inflicted and continue to
12 inflict injuries upon the People that require the People to incur extensive costs to protect public and
13 private property, including Oakland International Airport, against increased sea level rise,
14 inundation, storm surges and flooding.

15 97. Defendants have promoted the use of fossil fuels at unsafe levels even though they
16 should have known and in fact have known for many years that global warming threatened severe
17 and even catastrophic harms to coastal cities like Oakland. Defendants promoted fossil fuels and
18 fossil fuel products for unlimited use in massive quantities with knowledge of the hazard that such
19 use would create.

20 98. Defendants are jointly and severally liable to the People for committing a public
21 nuisance. The People seek an order of abatement requiring Defendants to fund a climate change
22 adaptation program for Oakland consisting of the building of sea walls, raising the elevation of
23 low-lying property and buildings and building such other infrastructure as is necessary for Oakland
24 to adapt to climate change.³⁹

25
26
27
28 ³⁹ The People also do not seek abatement with respect to any federal land.

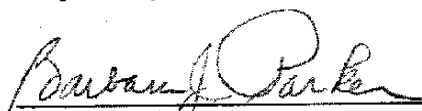
X. RELIEF REQUESTED

WHEREFORE, the People pray for judgment and an order against each Defendant, jointly and severally, as follows:

1. Finding Defendants BP, Chevron, ConocoPhillips, Exxon, and Shell jointly and severally liable for causing, creating, assisting in the creation, of, contributing to, and/or maintaining a public nuisance;
2. Ordering an abatement fund remedy to be paid for by Defendants to provide for infrastructure in Oakland necessary for the People to adapt to global warming impacts such as sea level rise;
3. Awarding attorneys' fees as permitted by law;
4. Awarding costs and expenses as permitted by law;
5. Awarding pre- and post-judgment interest as permitted by law; and
6. Awarding such other relief as this Court deems just and proper.

Dated: September 19, 2017

Respectfully submitted,


BARBARA J. PARKER, City Attorney
bparker@oaklandcityattorney.org
One Frank H. Ogawa Plaza, 6th Floor
Oakland, California
Tel. 510.238.3601
Fax 510.238.6500

Attorney for Plaintiff

1 Of Counsel:

2 [*Counsel Listed in Alphabetical Order*]

3 STEVE W. BERMAN (*pro hac vice* application to be submitted)
steve@hbsslaw.com

4 EMERSON HILTON (*pro hac vice* application to be submitted)
emersonh@hbsslaw.com

5 **HAGENS BERMAN SOBOL SHAPIRO LLP**

1918 Eighth Ave. Suite 3300

6 Seattle, WA 98101

Tel. (206) 623-7292

7 Fax (206) 623-0594

8 SHANA E. SCARLETT (bar no. 217895)

HAGENS BERMAN SOBOL SHAPIRO LLP

9 715 Hearst Avenue, Suite 202

Berkeley, California 94710

10 Tel. (510) 725-3000

Fax (510) 725-3001

11 MATTHEW F. PAWA (*pro hac vice* application to be submitted)

12 mattp@hbsslaw.com

BENJAMIN A. KRASS (*pro hac vice* application to be submitted)

13 benk@hbsslaw.com

WESLEY KELMAN (*pro hac vice* application to be submitted)

14 wesk@hbsslaw.com

HAGENS BERMAN SOBOL SHAPIRO LLP

15 1280 Centre Street, Suite 230

Newton Centre, Massachusetts 02459

16 Tel.: (617) 641-9550

Fax: (617) 641-9551

17 *Attorneys for The People*

Exhibit 1: Map showing projected sea level rise, 48-inch scenario, West Oakland detail

Source: City of Oakland 2016-2021 Local Hazard Mitigation Plan (June 2016), p. 84

Figure 9.1 Projected Sea-Level Rise 48-Inch scenario, West Oakland Detail



Planning and Building Department
March 2016

Local Hazard Mitigation Plan 2016

Projected Sea Level Rise - 2050 Scenario, West Oakland



Exhibit 2: Map showing projected sea level rise, 48-inch scenario, East Oakland detail

Source: City of Oakland 2016-2021 Local Hazard Mitigation Plan (June 2016), p. 85

**Exhibit 3: "Range of Global Mean Temperature From 1850 to the Present with the Projected
Instantaneous Climatic Response to Increasing CO2 Concentrations"**

Source: M.B. Glaser, Memo for Exxon management (Nov. 12, 1982), pp. 1, 28

EXXON RESEARCH AND ENGINEERING COMPANY

P.O. BOX 101, FLORHAM PARK, NEW JERSEY 07932

M. B. GLASER
Manager
Environmental Affairs Programs

Cable: ENGEXXON, N.Y.

November 12, 1982

CO₂ "Greenhouse" Effect

82EAP 266

TO: See Distribution List Attached

Attached for your information and guidance is briefing material on the CO₂ "Greenhouse" Effect which is receiving increased attention in both the scientific and popular press as an emerging environmental issue. A brief summary is provided along with a more detailed technical review prepared by CPPD.

The material has been given wide circulation to Exxon management and is intended to familiarize Exxon personnel with the subject. It may be used as a basis for discussing the issue with outsiders as may be appropriate. However, it should be restricted to Exxon personnel and not distributed externally.

Very truly yours,



M. B. GLASER

MBG:rva

Attachments

H. N. WEINBERG

NOV 15 1982

-28-

Figure 9

Range of Global Mean Temperature From 1850 to the Present
with the Projected Instantaneous Climatic Response to
Increasing CO₂ Concentrations.

