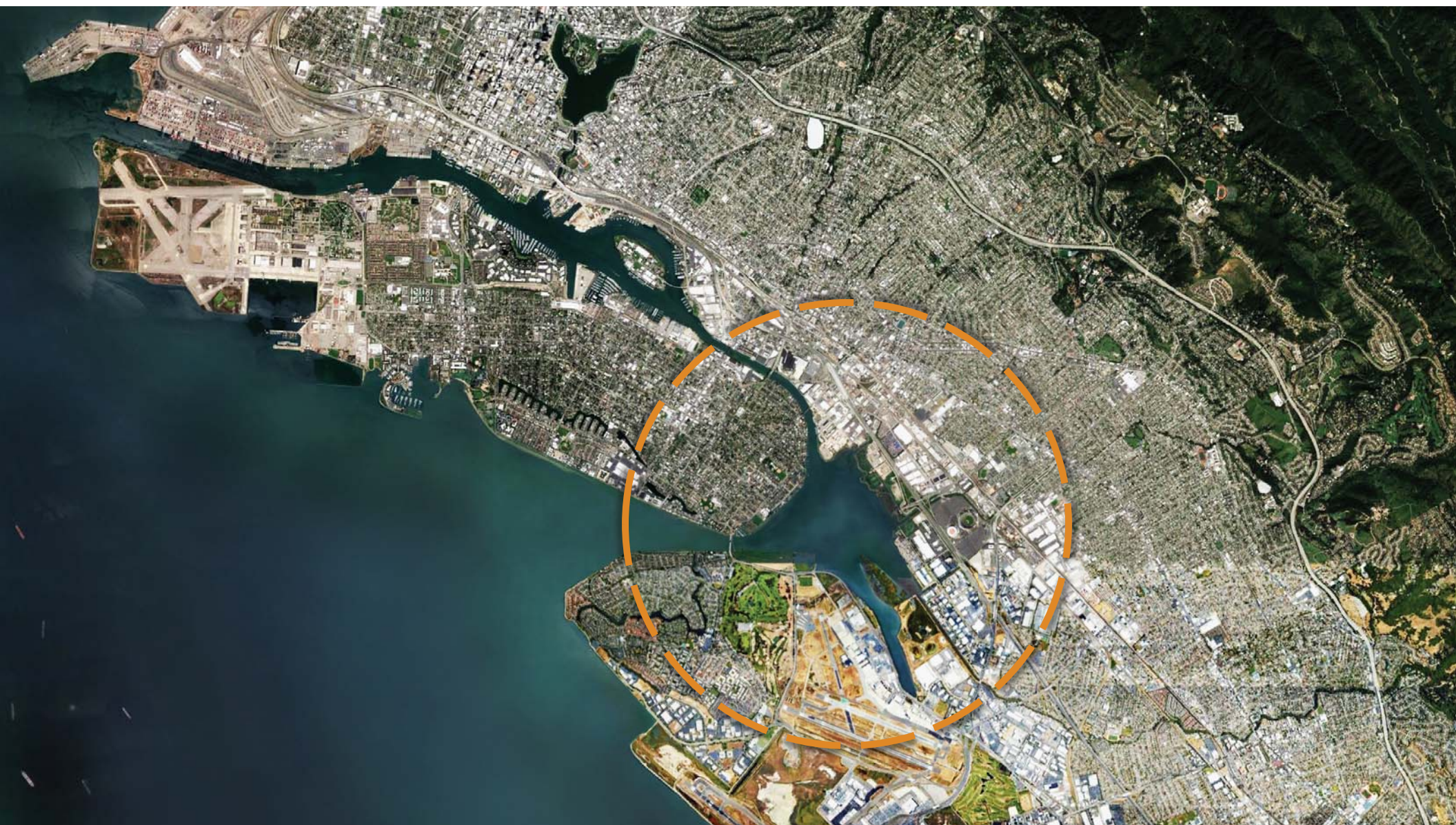


San Leandro Bay

past and future

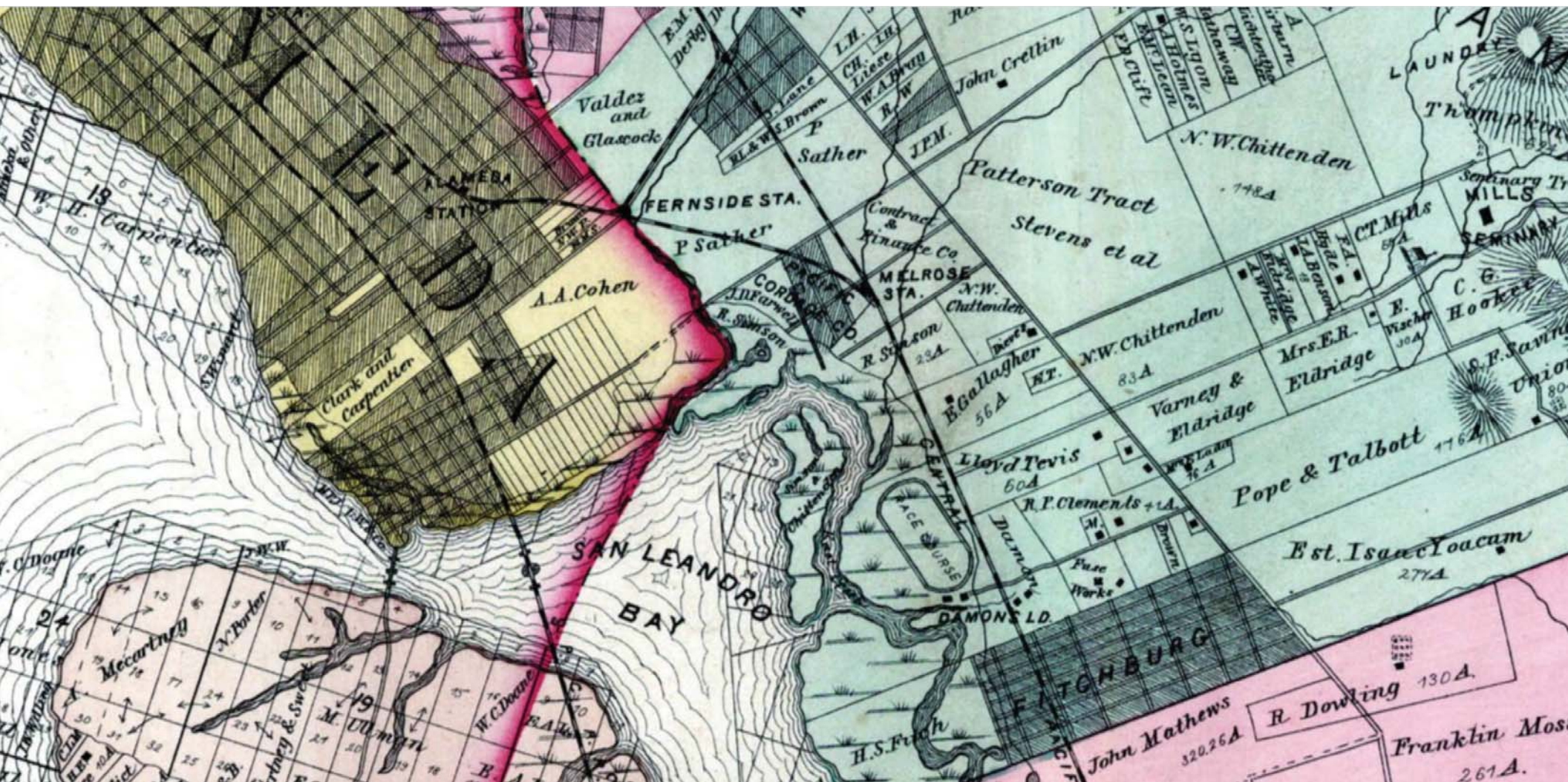
Kristina Hill, PhD
kzhill@berkeley.edu



PAST

1856 Coast Guard Map









1877 Map



ABC Team, Resilient by Design Challenge, 2018

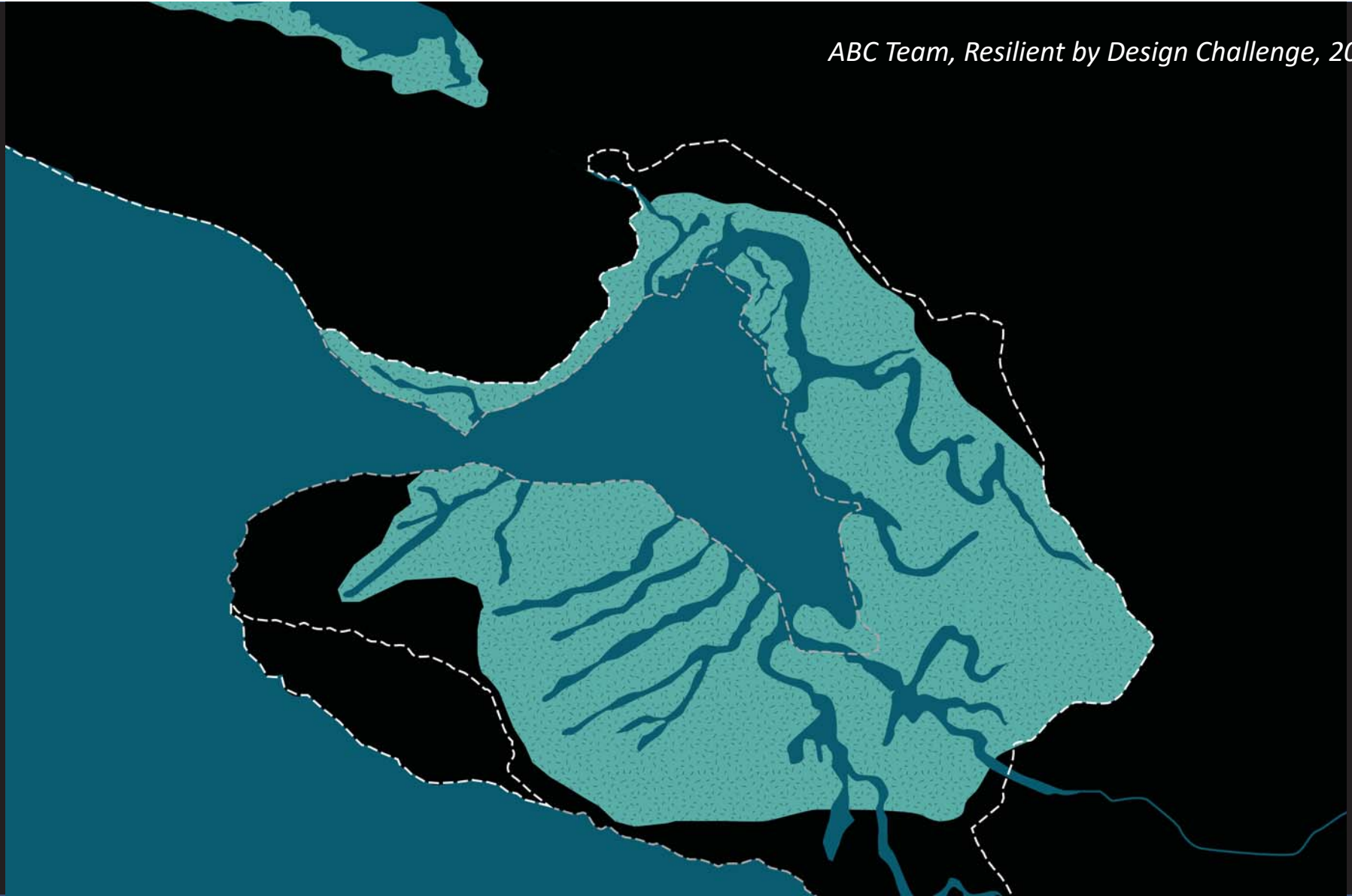
ABC Team, Resilient by Design Challenge, 2018

1859



ABC Team, Resilient by Design Challenge, 2018

1872

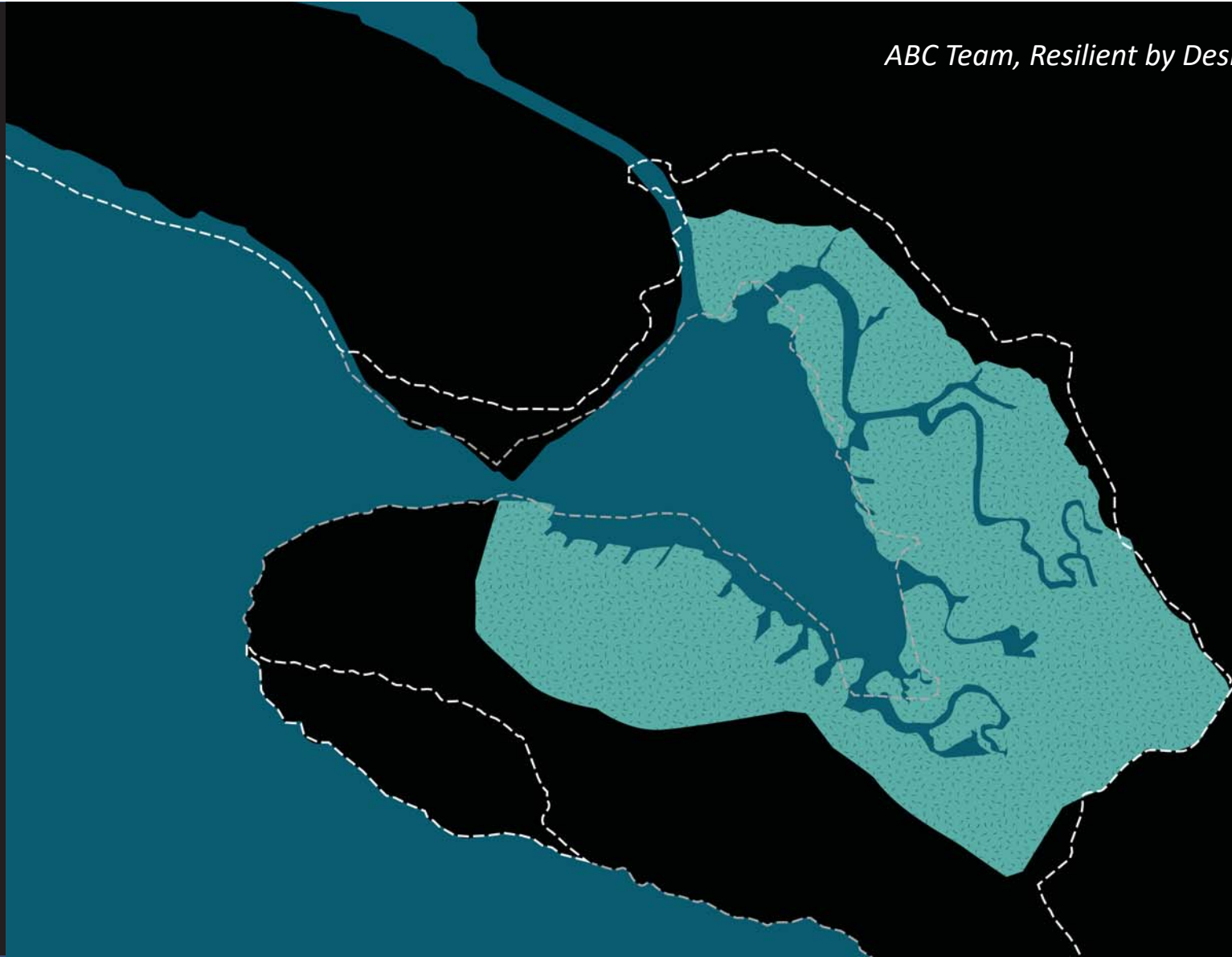


ABC Team, Resilient by Design Challenge, 2018



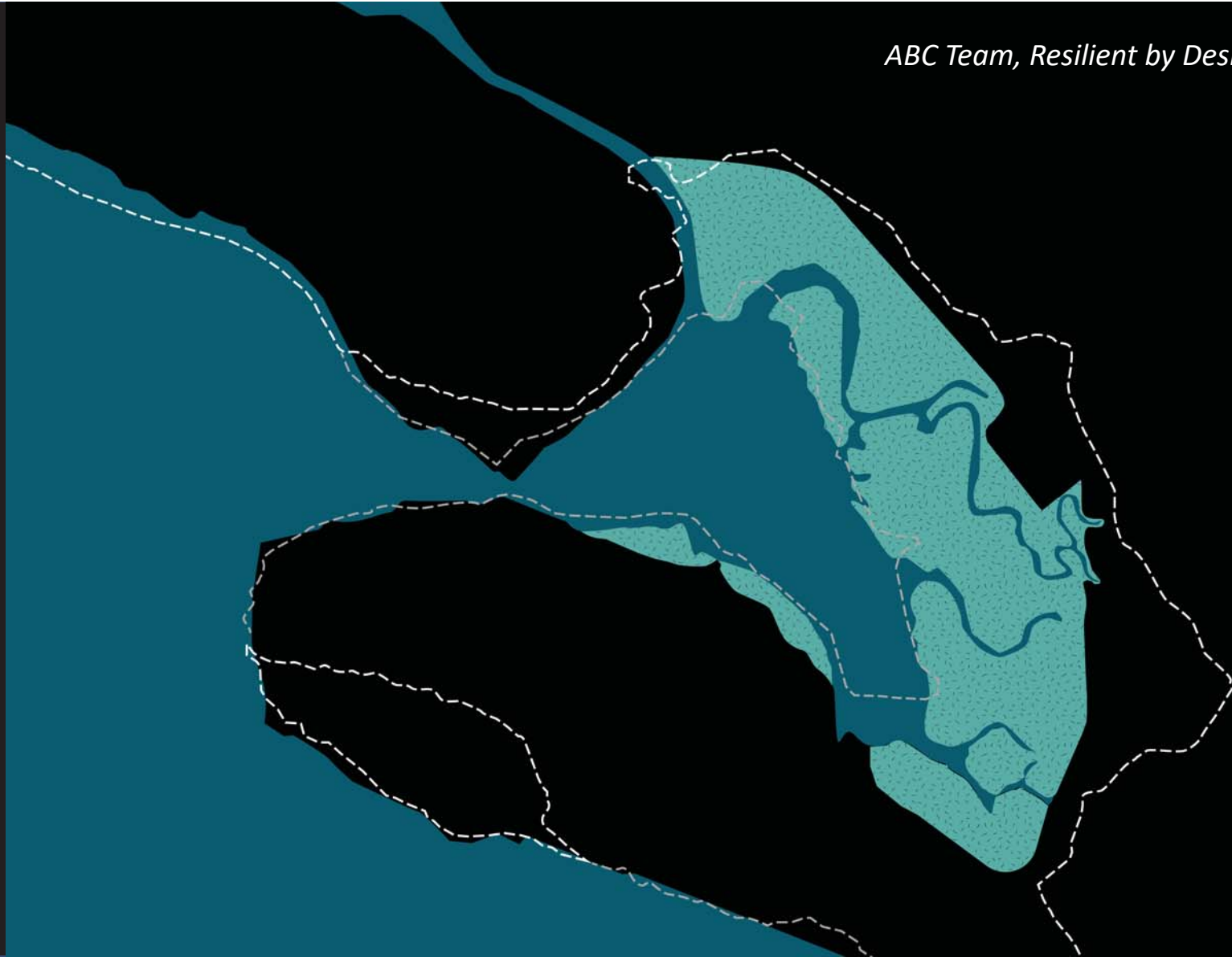
1884

ABC Team, Resilient by Design Challenge, 2018



1899

ABC Team, Resilient by Design Challenge, 2018



1925

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1947

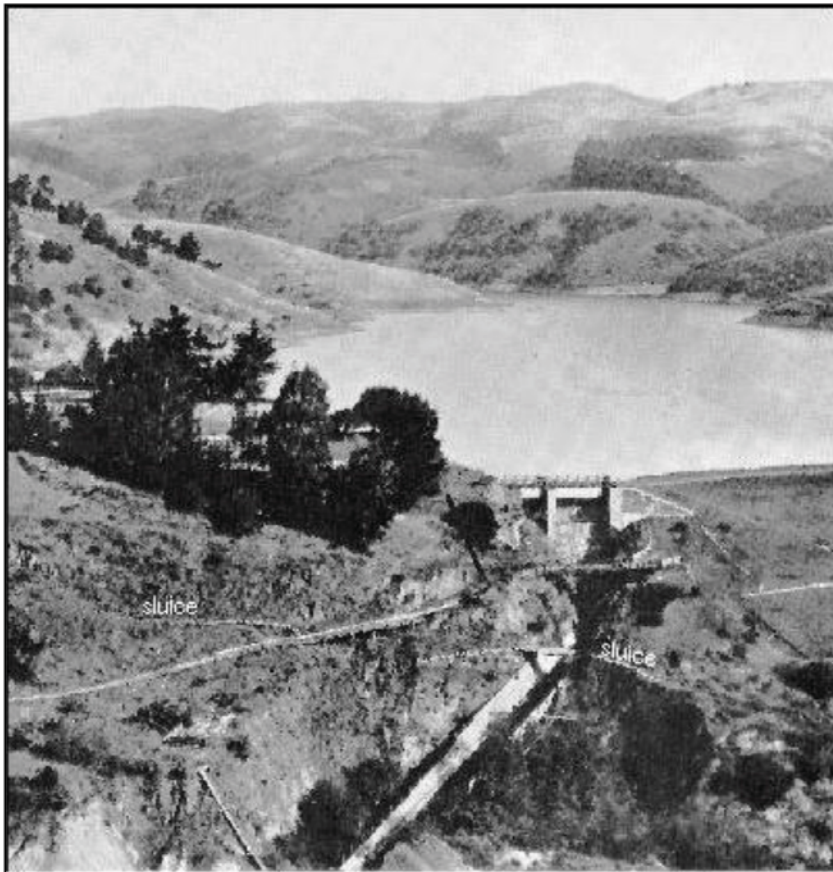


ABC Team, Resilient by Design Challenge, 2018

2018



<http://explore.museumca.org/creeks/z-arrowhead.html>



Courtesy of EBMUD

Dam on San Leandro Creek



Courtesy of The National Archives

Arrowhead marsh, 1939

Arrowhead Marsh, 1939

Today Arrowhead Marsh appears much as it did in this 1939 aerophoto. But the marshlands between Arrowhead Marsh and Hegenberger Road are buried beneath fill and industrial parks.



Arks on the Alameda shoreline east of the Park Street Bridge, ca. 1906. Houseboats began congregating along the banks of the Estuary Tidal Canal in 1904, soon after excavations were completed. An ark colony consisting of houseboats and houses on piles flourished here through World War II, when most of the Estuary arks were moved or demolished. (Photograph courtesy of the Alameda Historical Museum.)

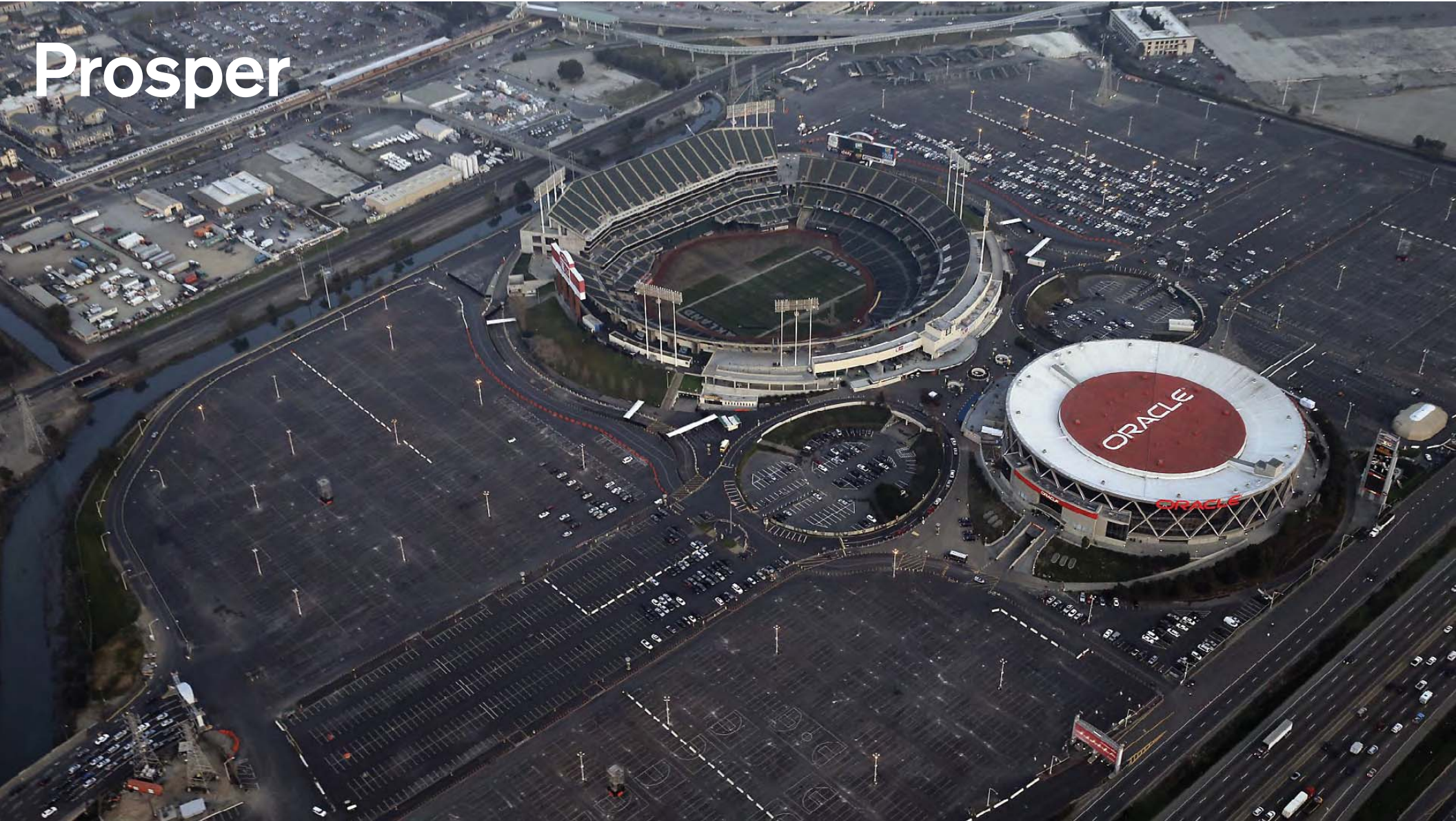
What other plans were there out in the airport area, and do you remember how those plans came together?

Nutter: Well, no--just not of any great importance. We traded some land from and to the City of San Leandro, in order that our land would not be in the City of San Leandro.

Lage: Oh, you had some land that was in San Leandro?

Nutter: Yes. And we had to pay taxes to the City of San Leandro, and they had to pay taxes to the City of Oakland. So by trading, then their land was within San Leandro, and ours was in Oakland. So we avoided paying taxes to San Leandro.

Prosper



Lage: Here's another environmental concern: the San Leandro Bay Wildlife Preserve. Do you remember a wildlife sanctuary--?

Nutter: The terminology sounds familiar, but I can't remember anything about it.

Lage: Now, San Leandro Bay is near the airport--

Nutter: Between Oakland and San Leandro, yes. And there was a dump over there, and the seagulls used to fly around there and pick up stuff off the dump. And then we were paying taxes, we owned some land out there, and we were paying taxes to the City of San Leandro, because we owned the land. And then there was some of it that they owned that was in the City of Oakland. So we made a trade and gave them the land that was in San Leandro, and took the land that was in Oakland. That doesn't explain the other thing, though.

Lage: The demand that it become a park? Clear back in '65, Hugo Fisher, who was head of the State Resources Agency, apparently questioned whether you could really do an industrial park on San Leandro Bay. Were you planning an industrial park out that far?

Nutter: We might have talked about it. I don't remember thinking about it seriously.

Lage: He said it wasn't really for port purposes, and he wanted it as a wildlife sanctuary. Well, that was the first mention I saw, and then in '71 there's a citizen's planning committee formed about it. In '75, you leased it to East Bay Regional Parks for a park.



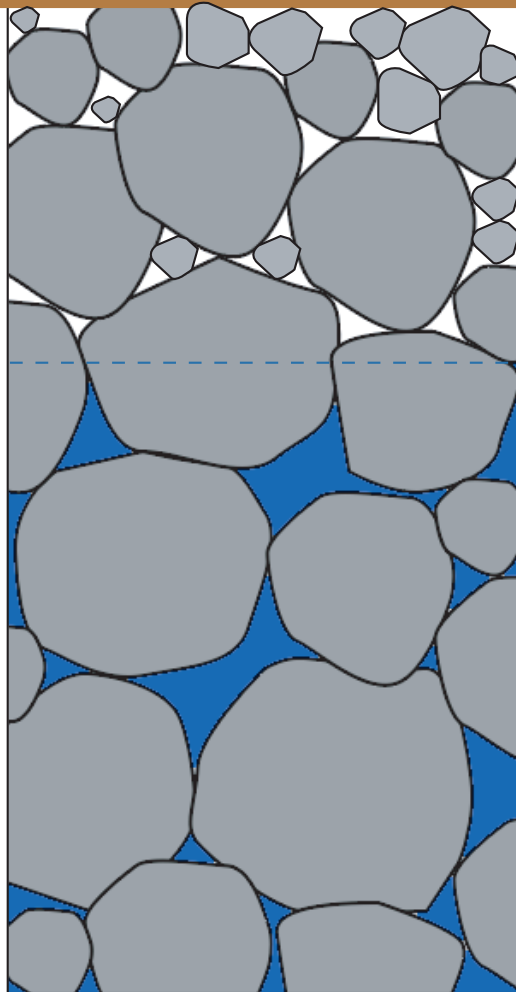
1908 Map

PRESENT



What is groundwater?

Pore spaces in soil



Unsaturated zone

"the water table"

Saturated zone (Groundwater)

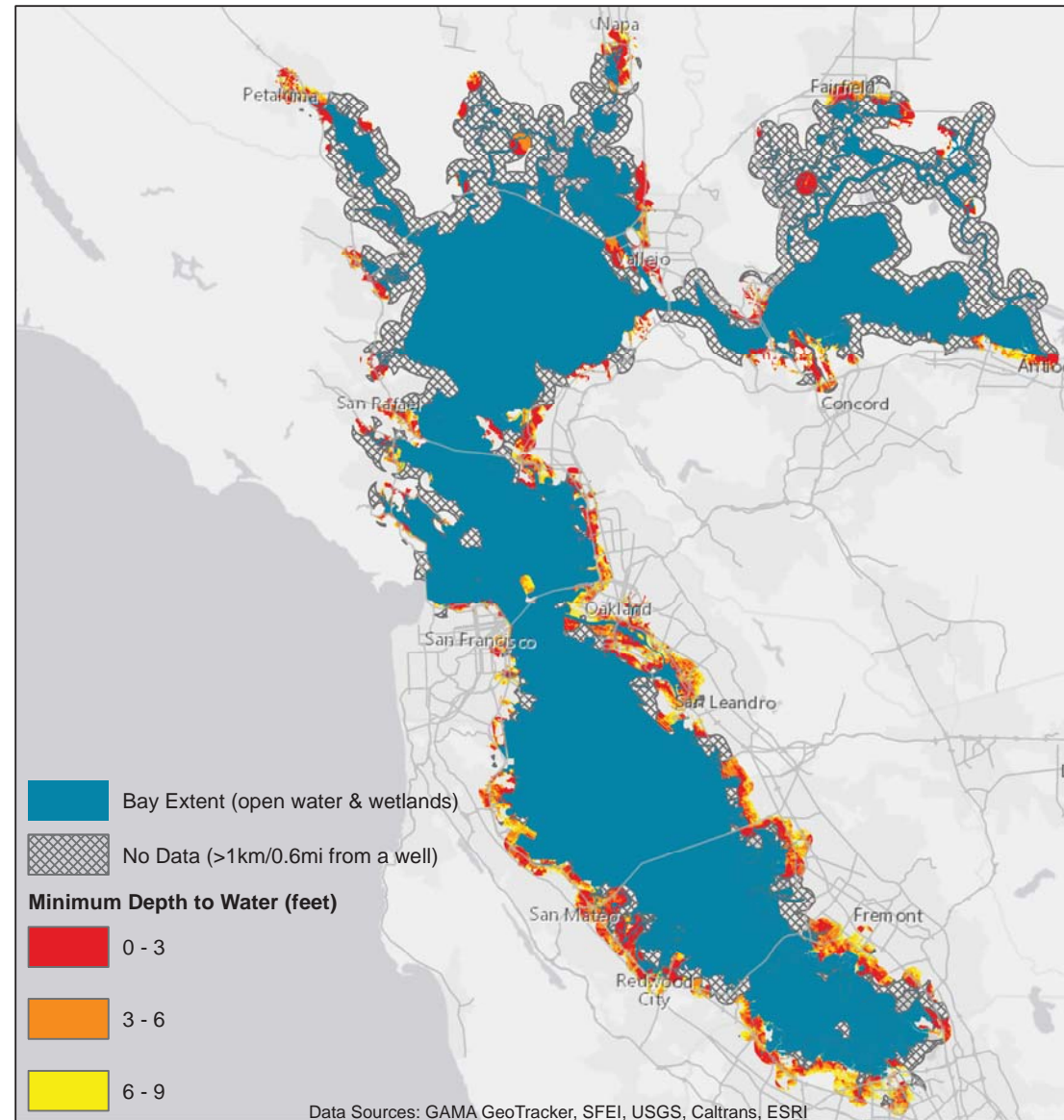
Groundwater is water from rainfall that is stored in the soil.

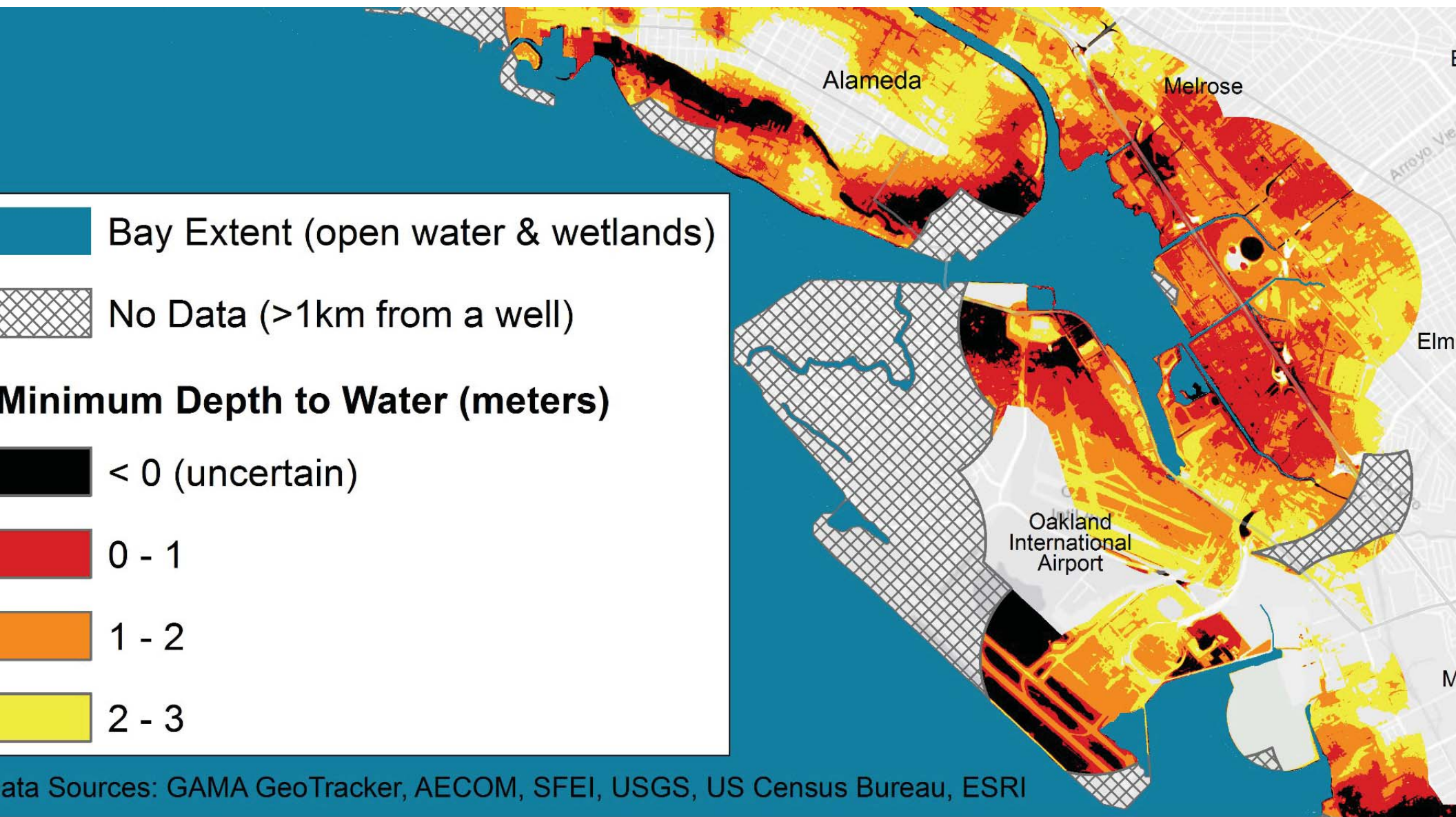
The "water table" refers to the shallowest layer of that water, which often lies just below the surface of the soil.

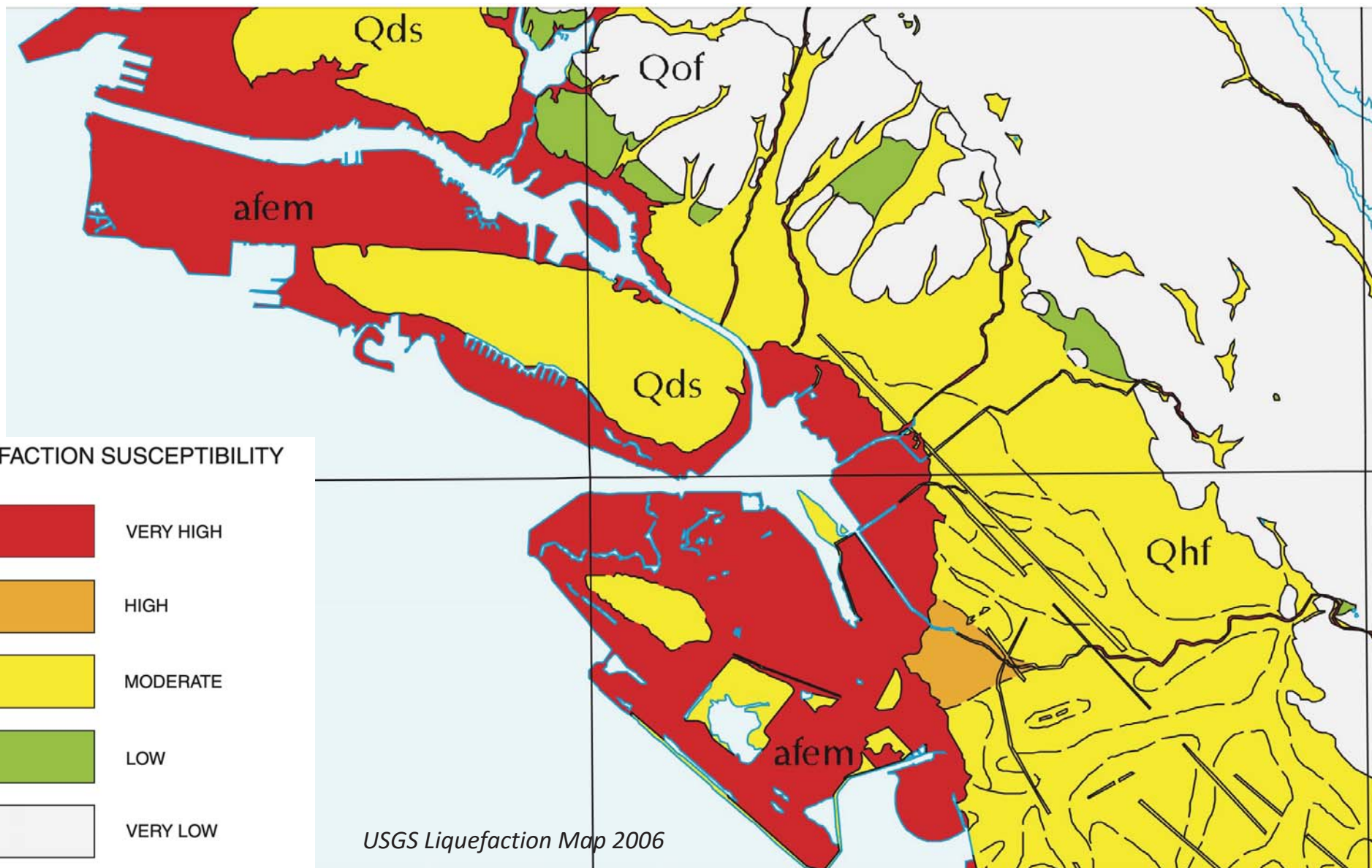
GROUNDWATER

Bay Area locations that will flood by groundwater as sea levels rise 3 feet, shown in **red**.

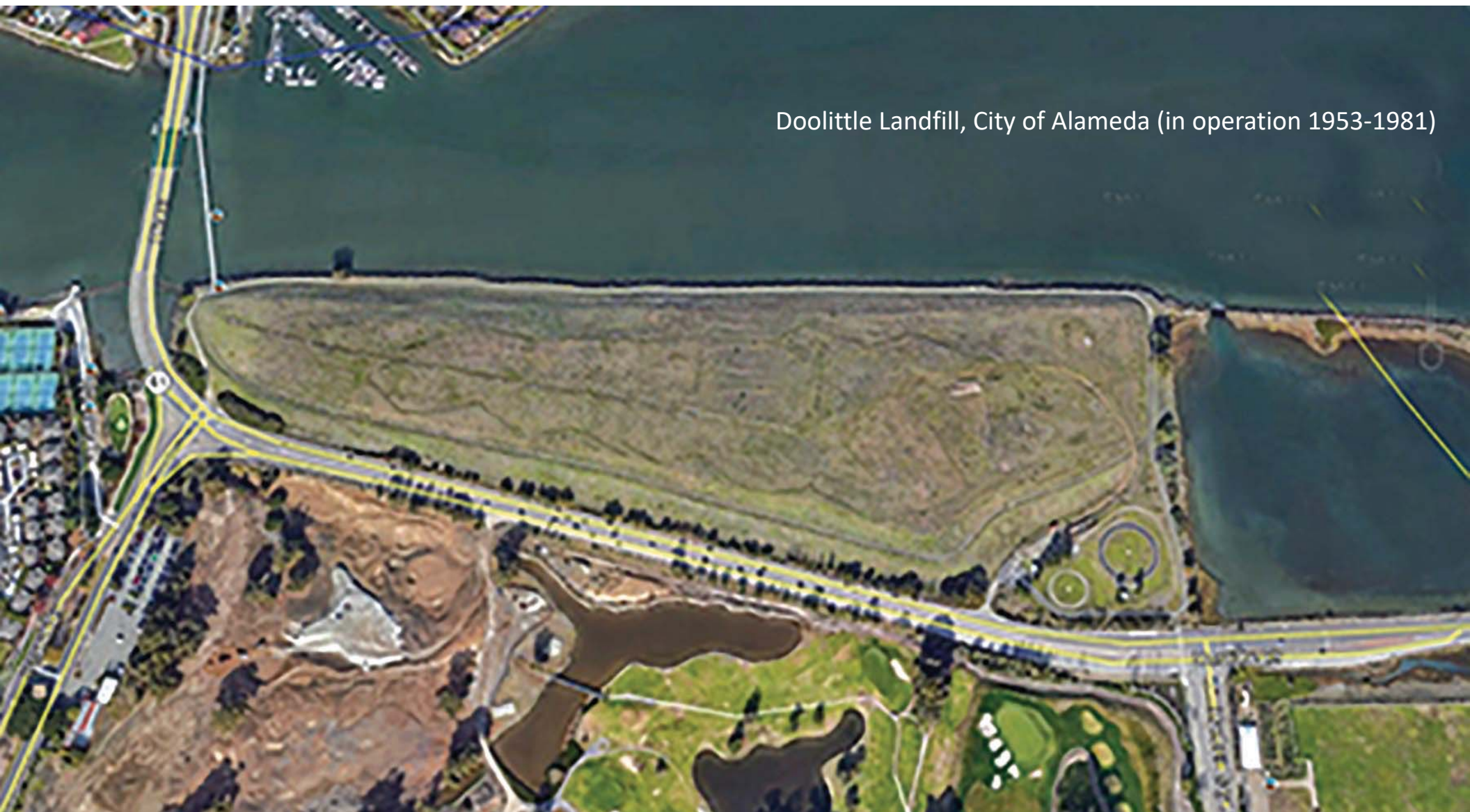
Plane, Hill and May (2019)- open access paper
<https://www.mdpi.com/2073-4441/11/11/2228>







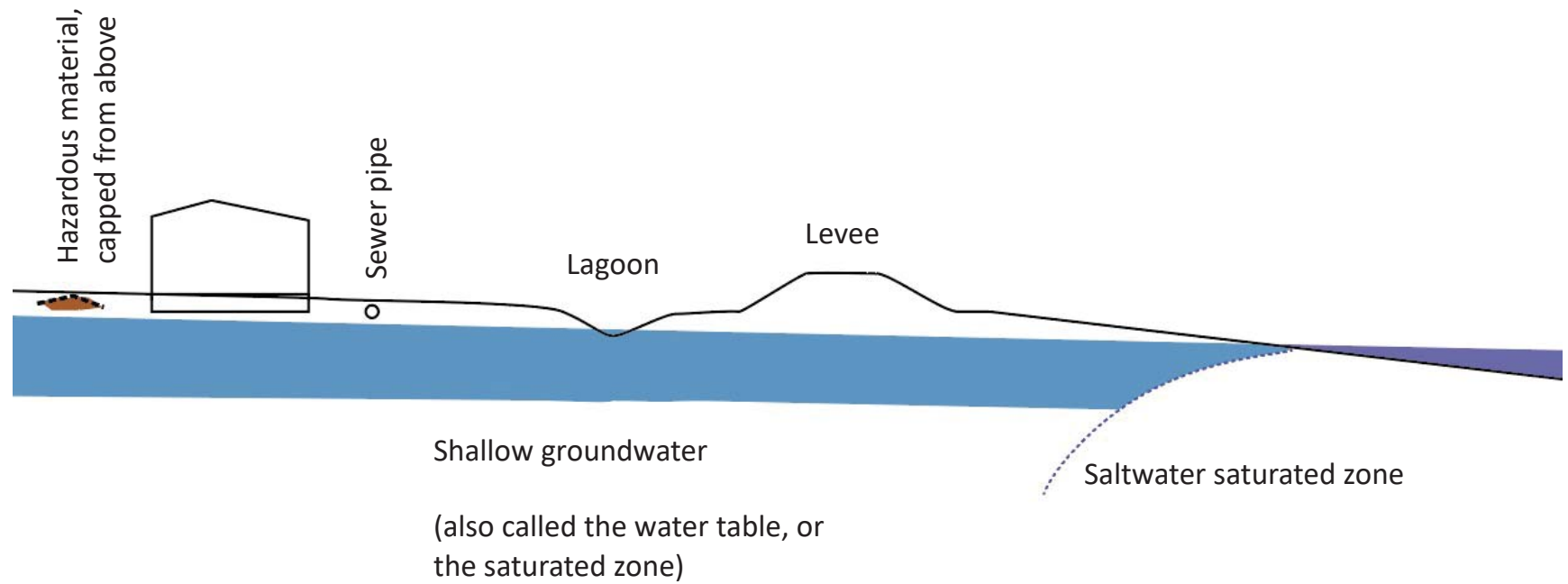
Doolittle Landfill, City of Alameda (in operation 1953-1981)



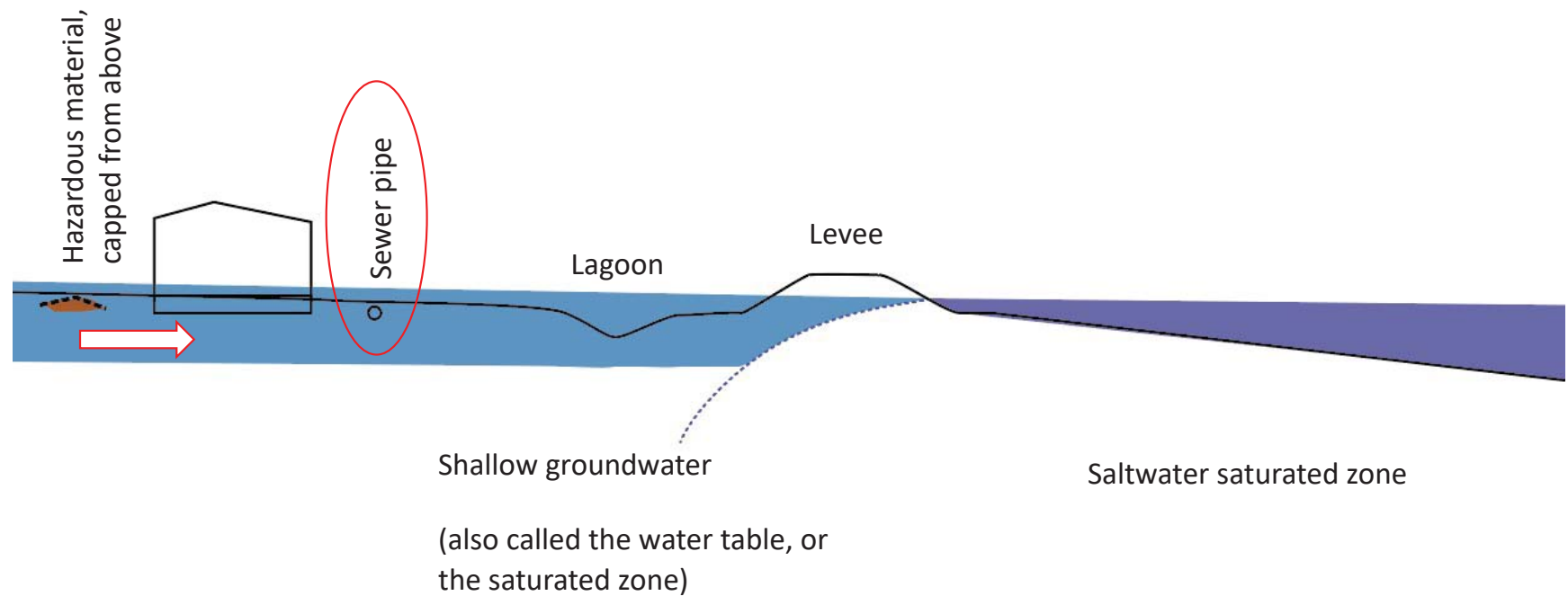
FUTURE

50+ years?

Groundwater levels will be pushed upwards as sea levels rise.

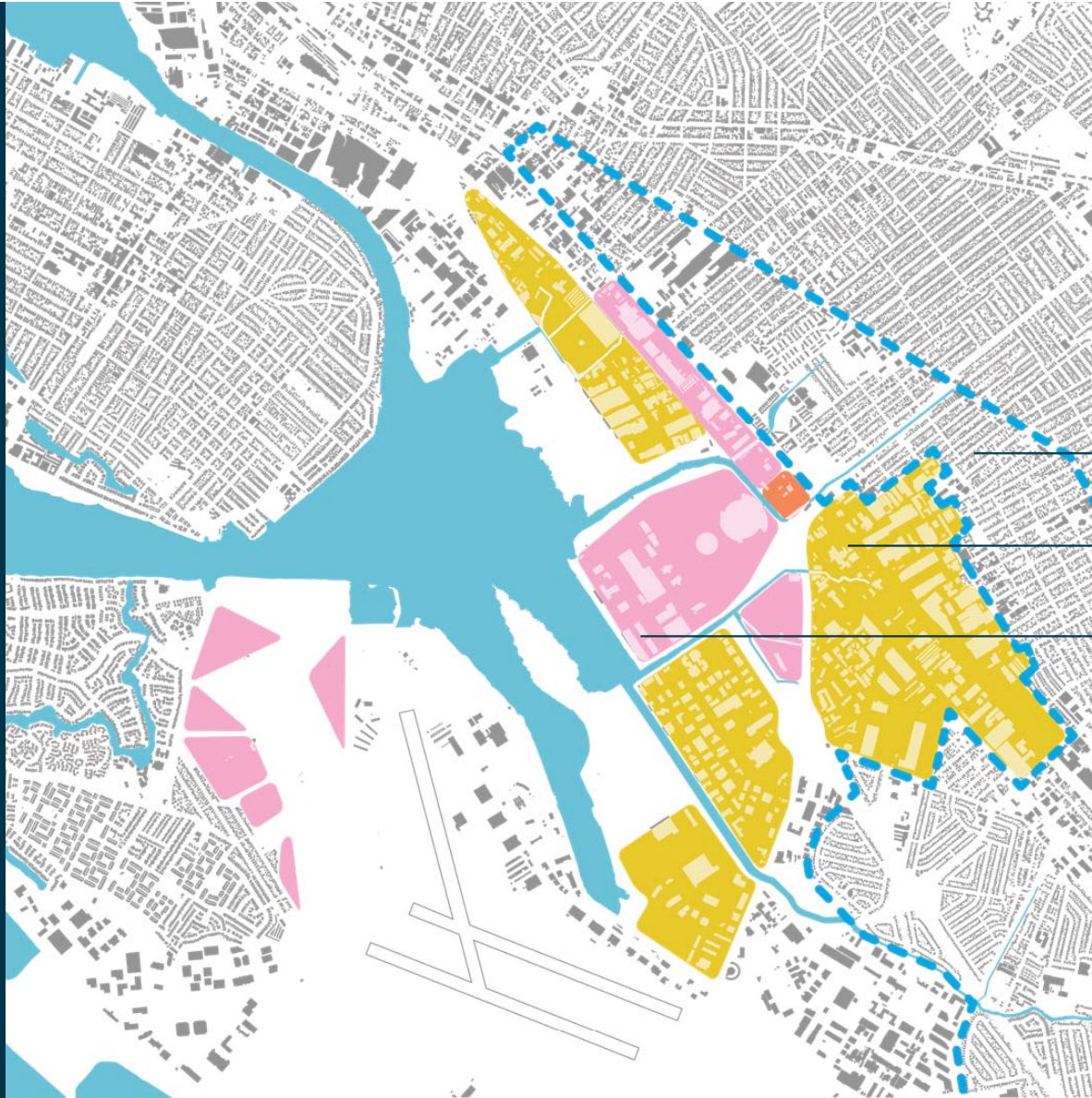


Near the ocean, if sea level rises 3 feet, then shallow groundwater rises 3 feet.



Prosper

AFFORDABILITY
+
OPPORTUNITY

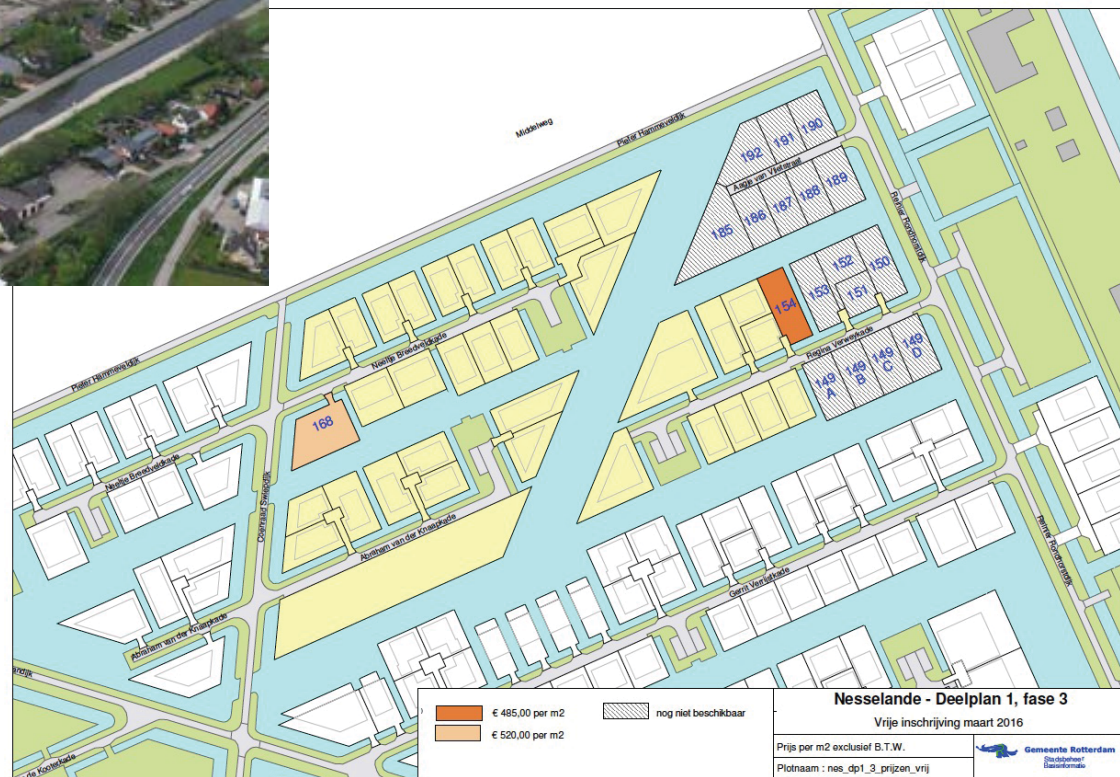


*ABC Team,
RBD Challenge
2018*

Protect existing homes

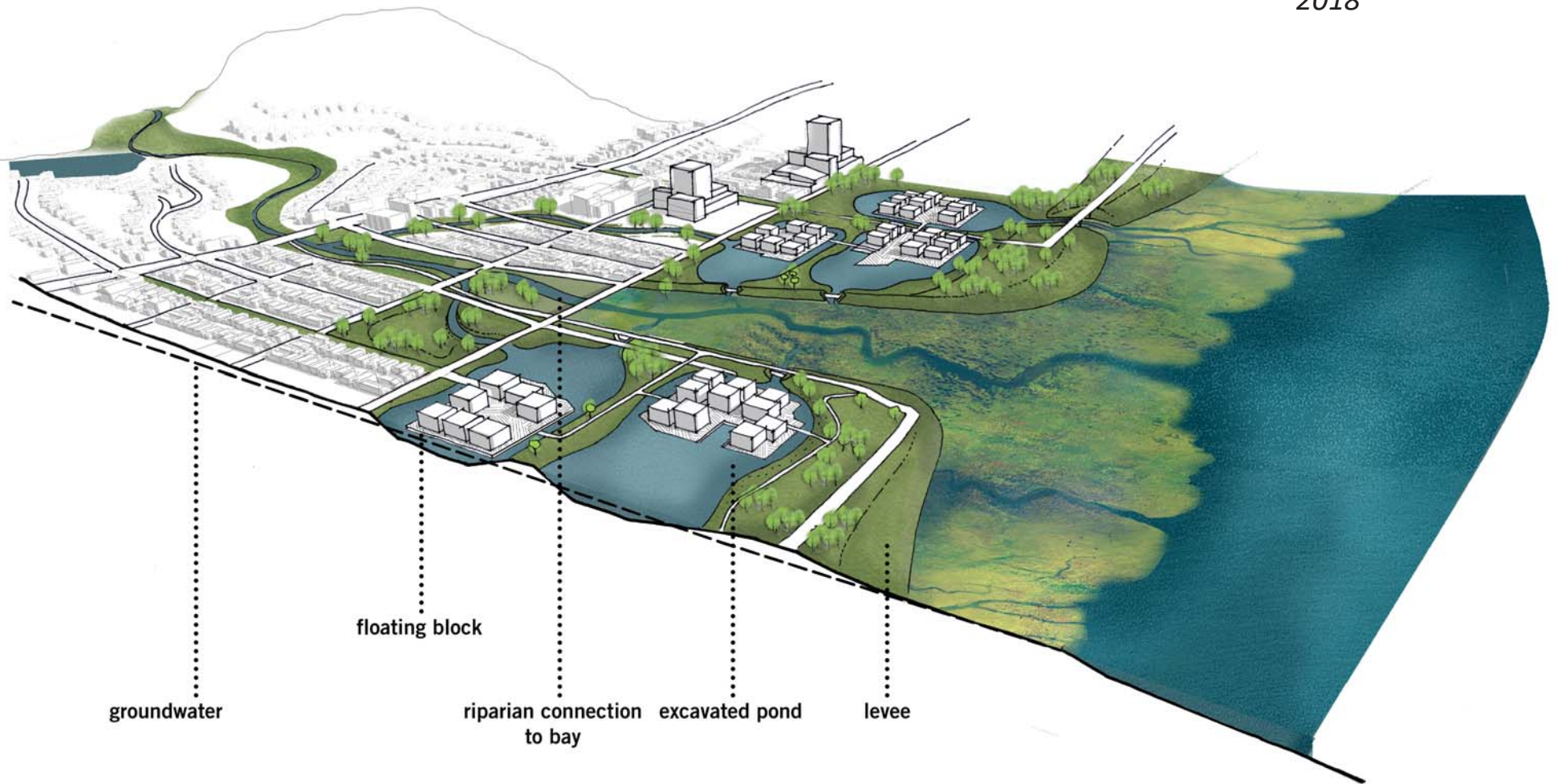
Preserve existing jobs

Transition



Housing at Nesseland, Rotterdam

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RBD Challenge
2018



*ABC Team,
RBD Challenge
2018*



Estuary Commons

The People, and a Place, and a Path Forward

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RBD Challenge
2018

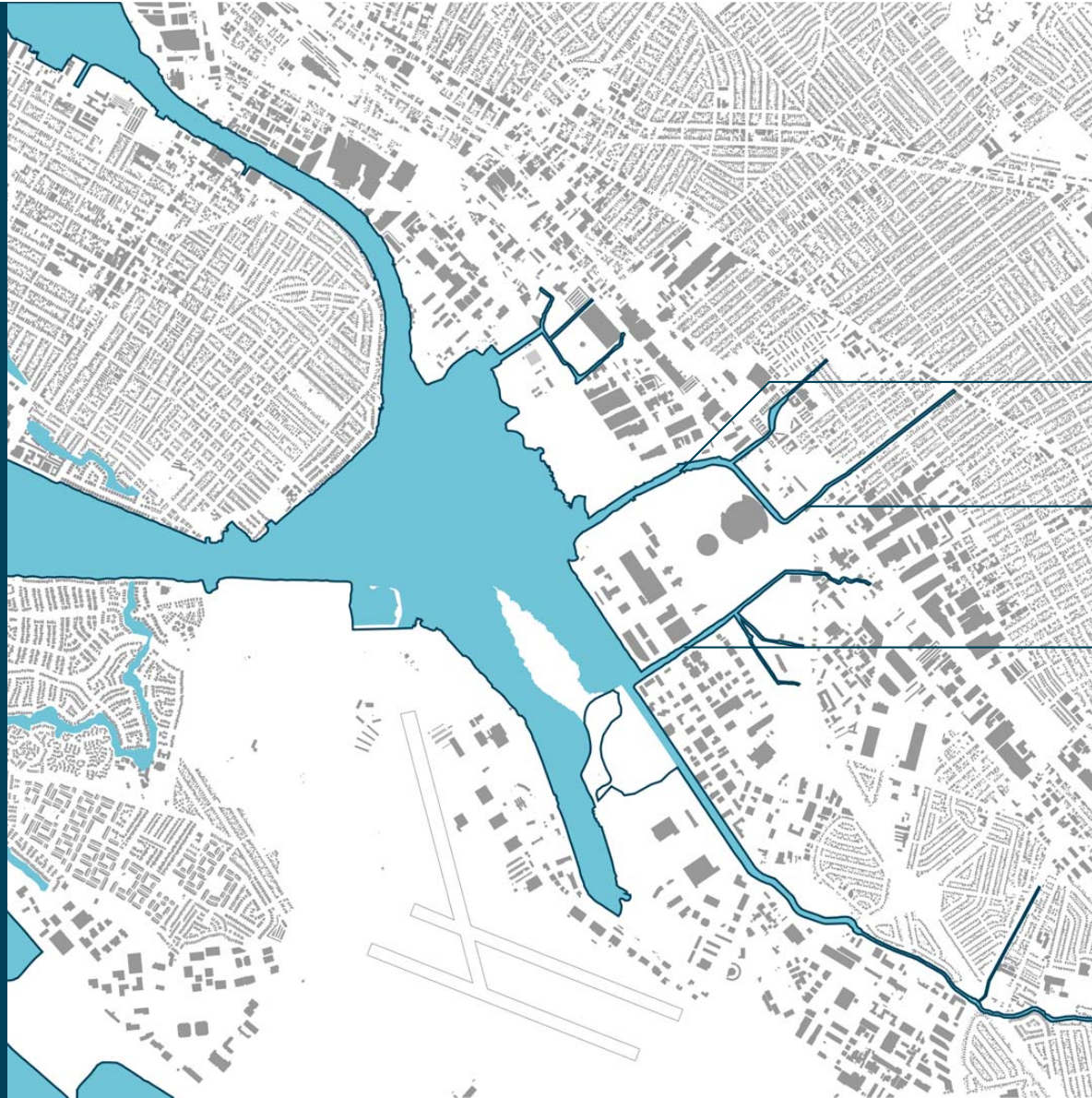


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2018



Adapt

EXISTING SHORELINE



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RBD Challenge
2018*

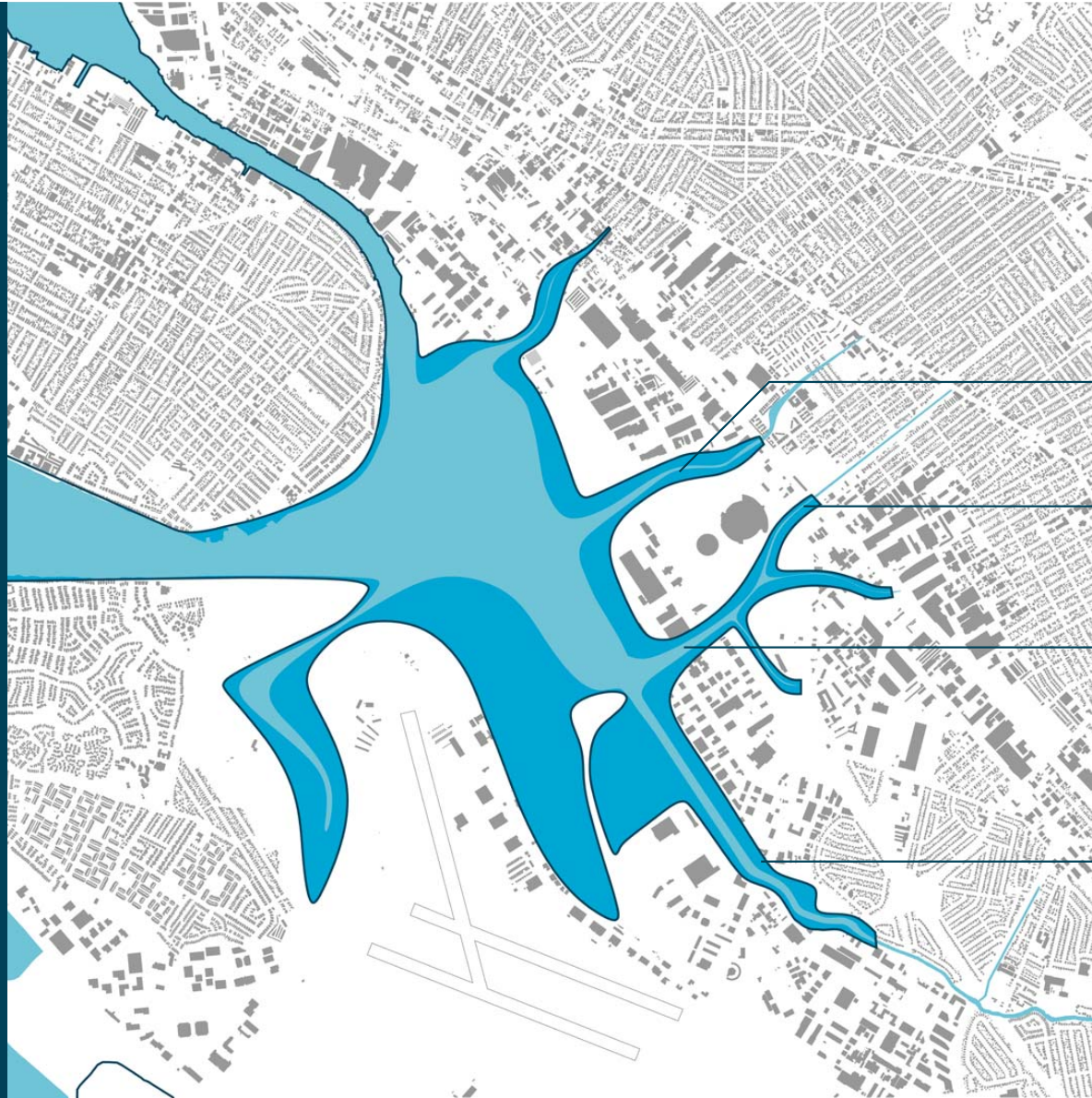
Damon Slough

Arroyo Viejo

Elmhurst Creek

Adapt

FLUVIAL FLOOD
+
SEA LEVEL RISE
PROTECTION



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RBD Challenge
2018*

Damon Slough

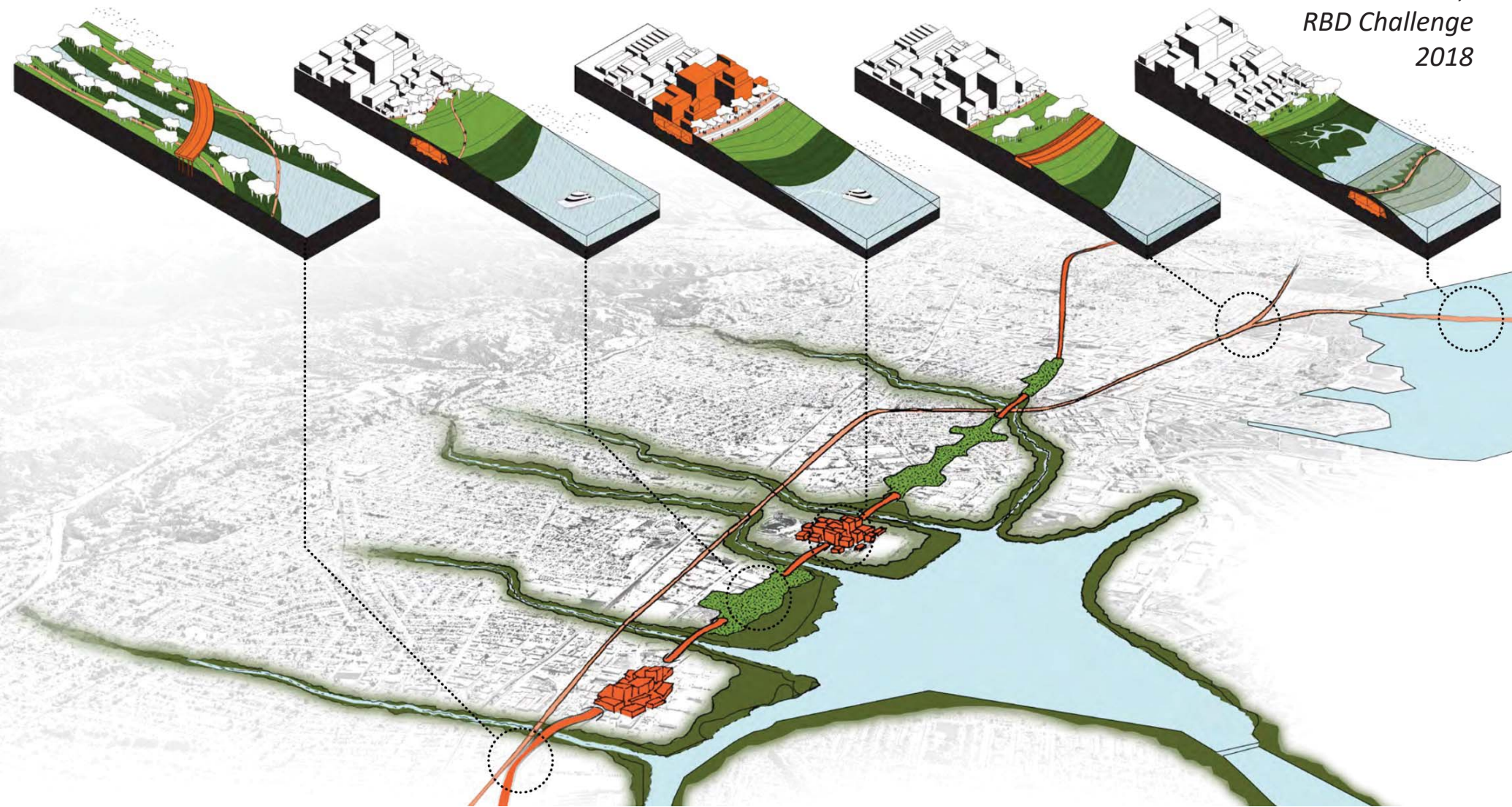
Arroyo Viejo

Elmhurst Creek

6' SLR Protection

Resilient Corridors

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RBD Challenge
2018*



Airport futures?

Floating runway tested in Tokyo, 2003

TOKYO: MEGAFLOAT CONCEPT and PROTOTYPE (2003)

