

Board Report

TO: Board of Harbor Commissioners
FROM: Sabrina Brennan, Harbor Commissioner
DATE: December 16, 2015
SUBJECT: Discussion and possible action regarding persistent flooding at Oyster Point Marina

General Manager Recommendation:

District Policy allows for any Commissioner to submit a report on any one item at any time up to noon of the Tuesday in the week prior to a meeting of the Board of Commissioners.

Such a short time frame does not allow for staff analysis of the issue presented. No staff review of this item has occurred, thus staff cannot present either a Policy or Fiscal implications analysis.

Staff recommends that any item requiring action be discussed as described on the agenda, and, prior to action being taken, this Commission direct that the item be placed on a future agenda when policy implications, costs, external relations and unintended consequences can be presented as a part of the discussion.

Commissioner Discussion:

Please include the following agenda item on the Dec. 16, 2015 meeting agenda:

Discussion and possible action regarding persistent flooding at Oyster Point Marina.

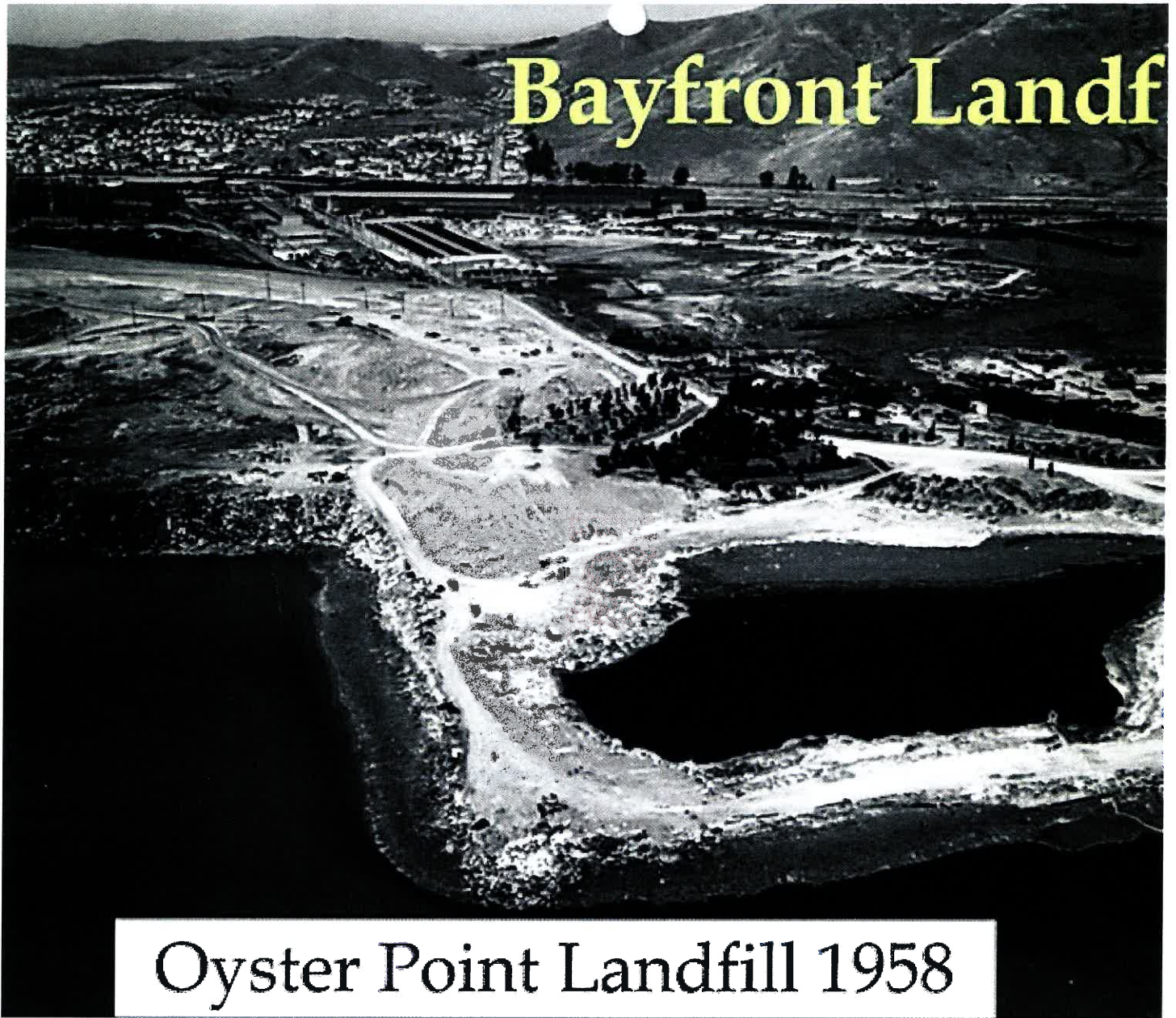
Please include my Oyster Point Landfill report and photos in the board packet along with any additional relevant information:

<http://sabinabrennan.com/blog/2015/9/25/oyster-point-marina-is-a-result-of-the-bay-fill-dump-era>

I received the attached photo from Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager.

His Power Point presentation on landfills is attached. See slide 19 on sea-level rise and Bay front landfills and the last slide on the Oyster Point Landfill.

Bayfront Landf



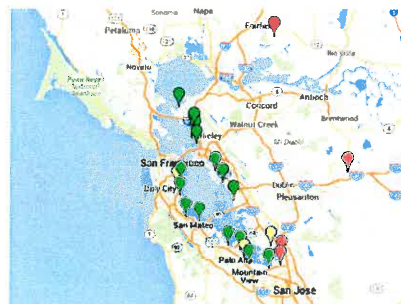
Oyster Point Landfill 1958

SABRINA BRENNAN (/)**ABOUT****MEETINGS (/MEETINGS/)****FINANCE (/FINANCE/)****PROJECTS (/PROJECTS/)****HISTORY (/HISTORY/)****JOURNAL (/BLOG/)****NEWS****COMMISSION NEWS (/COMMISSION/)****NEWS LINKS (/NEWS/)****ELECTION COVERAGE (/ELECTION/)****ENDORSEMENTS (/ENDORSEMENTS/)****NOTES (/NOTES/)****OLD NEWS (/STRANGER-THAN-FICTION/)****LAFCO 2015 (/LAFCO-LETTERS/)****EXPERIENCE****MY AGENDA (/MY-AGENDA/)****JOIN ME (/JOIN-ME/)****SERVICE (/PUBLIC-SERVICE/)****DAY JOB (/DAY-JOB/)****PHOTO****2013 CCFRP FISHING TRIP (/CCFRP-FISHING-TRIP-2013-HULLI-CAT/)****2012 CCFRP FISHING TRIP (/PHOTOS/CALIFORNIA-COLLABORATIVE-FISHERIES-RESEARCH-PROGRAM/)****COASTSIDE FISHING CLUB (/PHOTOS/COASTSIDE-FISHING-CLUB/)****PILLAR POINT HARBOR 1972 (/PILLAR-POINT-HARBOR-1972-CALIFORNIA-COASTLINE/)****PILLAR POINT HARBOR 1986-1993 (/PILLAR-POINT-HARBOR-1986-1993/)****COMMISSIONER BRENNAN (/PHOTOS/WHY-IM-RUNNING/)****FAMILY (/PHOTOS/FAMILY/)****AMERICA'S CUP (/PHOTOS/AMERICAS-CUP/)****SUNSET SONATA: MAURO FFORTISSIMO (/SUNSET-SONATA-MAURO-FFORTISSIMO/)****HMB INTERNATIONAL MARATHON 2012 (/PHOTOS/2012-HALF-MOON-BAY-INTERNATIONAL-MARATHON/)****CRAB SEASON 2012 (/PHOTOS/CRAB-SEASON-2012/)****TUNA BOAT GROUNDED AT ROSS' COVE (/PHOTOS/ALBACORE-TUNA-BOAT-GROUNDED-AT-ROSS-COVE/)****JAPAN (/PHOTOS/JAPAN/)****ITALY (/PHOTOS/ITALY/)****AUSTRALIA (/PHOTOS/AUSTRALIA/)****ENVIRONMENT****SEA LEVEL RISE (/SEA-LEVEL-RISE/)****WATER QUALITY (/WATER/)****FECAL POLLUTION (/WATER-QUALITY-REPORTS/)****EROSION (/EROSION/)****TRAILS (/TRAILS/)****SIERRA CLUB ENDORSEMENT (/SIERRA-CLUB-ENDORSMENT-LETTER/)****CONTACT****SEND A NOTE (/CONTACT/)****PHONE ME (/CALL-ME/)****VIDEO****MEETING VIDEOS (/MEETING-VIDEOS/)****FEATURED VIDEOS (/FEATURED-VIDEOS/)**

December 1, 2015 (/blog/2015/9/25/oyster-point-marina-is-a-result-of-the-bay-fill-dump-era)

Oyster Point Marina is result of Bay fill dump era (/blog/2015/9/25/oyster-point-marina-is-a-result-of-the-bay-fill-dump-era)

The Oyster Point Landfill is a closed, unlined Class III landfill (/s/California-Waste-Classification-Workshop.pdf) that was in operation from 1956 to 1970. Prior to 1956, what would become the Oyster Point Landfill area consisted of tidal marshlands and upland soils and bedrock.



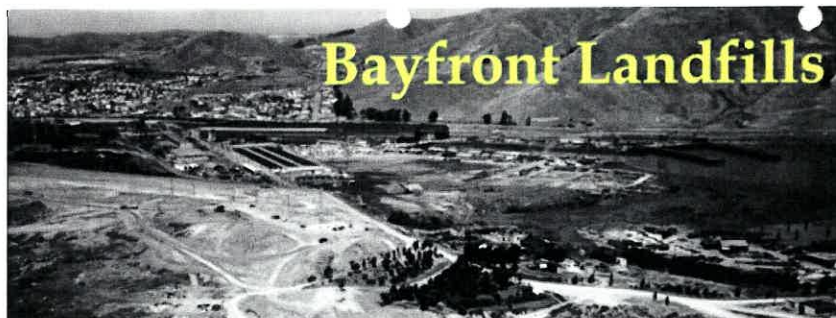
Between 1956 and 1970, the City of South San Francisco leased the site (approximately 57 acres) to the now defunct landfill operator The South San Francisco Scavenger Company.

In 1956, Scavenger began disposal operations at the landfill. Initially, municipal solid waste was disposed of on the ground and burned. This activity ended in 1957 following the enactment of laws prohibiting open air burning of rubbish in the Bay Area. To address the new air quality restrictions South City and Scavenger established a solid waste disposal site on the submerged lands just east of the original Oyster Point.

The landfill was developed in three phases. Filling of the first section began in 1957 and was completed by late 1961. The first area to be filled extended into the Bay about 1,500 feet eastward from the original bluff. Scavenger placed waste directly into the tidelands and used a wire fence (http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2000/R2-2000-046.pdf) to control the discharge of solids into the Bay due to tidal action. Waste disposal operations eventually resulted in the relocation of the shoreline approximately 3,000 feet to the east of the pre-landfill shoreline.

The landfill material consists of up to 45 feet of poorly compacted municipal and industrial waste. Typical waste found within the landfill includes the following: chemicals, drums, paper, cardboard, organic matter, wood, glass, metal, rubber, rocks, concrete, and other materials. The base of the landfill material has been compressed into, and mixed with, the upper part of the Bay Mud. The volume of waste in the landfill is approximately 2.5 million cubic yards and total tonnage of this material is approximately 1.4 million tons. This volume of waste would cover a football field almost to the height of the Empire State Building.

Beginning in 1961, the landfill received liquid industrial waste for disposal. The types of liquid waste included paints, thinners, and coagulated solvent sludge. The liquid wastes were placed in a sump (Sump 1). No records describing the construction of the sump have been found. Liquid industrial wastes were disposed of in this sump from 1961 until 1966. In July 1966, the City of South San Francisco discontinued the use of Sump 1 and used Sump 2 until 1967. The total volume of liquid industrial waste received by the landfill in 1965 and 1966 is estimated at 608,351 and 378,680 gallons, respectively. Sump 1 alone is almost enough to fill an Olympic-size swimming pool.



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Trash Dumps and the Hidden History of the Bay Shoreline ([https://www.facebook.com/l.php?u=https%3A%2F%2Fwww.google.com%2Fmaps%2Fd%2Fviewer%3Fll%3D37.715331%252C-122.199554%26spn%3D0.744146%252C1.087646%26msa%3D0%26mid%3Dz21PgIMi6bCE.kzqcJB0Crt0E&h=qAQEXGst0&enc=AZPWDZ3GsiJ2tVukDuhNhABR6SOlyFMv89Zba4-](https://www.facebook.com/l.php?u=https%3A%2F%2Fwww.google.com%2Fmaps%2Fd%2Fviewer%3Fll%3D37.715331%252C-122.199554%26spn%3D0.744146%252C1.087646%26msa%3D0%26mid%3Dz21PgIMi6bCE.kzqcJB0Crt0E&h=qAQEXGst0&enc=AZPWDZ3GsiJ2tVukDuhNhABR6SOlyFMv89Zba4-OcHI53Yg123pxz9B4t34KIO9g7F6i-q4zjEoqZpkiPkft90JcheEsOs8X97364hUMXK3qeEwGGgYL9C7Mq9PPIATY3gl)

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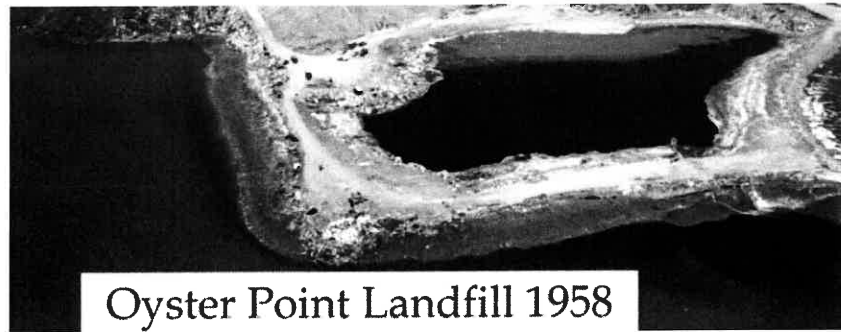
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Oyster Point Landfill 1958

Consistent with landfill practices ([/s/2013-Land-Disposal-Program-Keith-Roberson.pdf](#)) at that time, no liner was installed at the site (http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2000/R2-2000-046.pdf). Waste disposal design features such as liners, cellular division of waste, and leachate collection systems were not installed. Instead, the waste materials were placed directly onto the Bay Mud and soils overlying bedrock. In order to contain the solid waste from contact with waters of the State, Bay Mud berms were constructed around portions of the waste disposal areas in 1961, 1962, and 1964. However, there is no data to suggest that the industrial waste sumps were ever constructed with additional berms or dikes to control the migration of liquid wastes.

In 1962, a small craft harbor was constructed along the north shore of the landfill. To create a breakwater for the east side of the marina, the second phase of landfill was placed in the form of a mole extending from the eastern end of the first fill and north about 400 feet into the Bay. The third phase of filling began in 1964 and was accomplished by dredging up Bay Mud and forming mud dikes and a dike-enclosed cell in which solid waste was later placed.

Upon completion of the disposal operations, various landfill closure activities took place through the late 1980s. The closed landfill then became the site for development of the Oyster Point Marina/Park.

The landfill is currently owned by the City of South San Francisco and is operated as a marina, ferry terminal, yacht club, hotel, office space, and open space. South City is responsible for landfill maintenance and the San Mateo County Harbor District manages marina operations pursuant to a Joint Powers Agreement (<http://static1.squarespace.com/static/510a0f9ae4b008f90f030a56/t/55abdd83e4b0ea1904304c8d/1437326723415>) that terminates in 2026.

South City hopes to redevelop the site. The 2015 Semiannual Oyster Point Landfill Report (<http://sabrinenbrennan.com/s/2015-Semi-Annual-Report.pdf>) states that a project would include excavation of landfill materials (<http://static1.squarespace.com/static/510a0f9ae4b008f90f030a56/t/5636d4fae4b08347cb57967b/1446434042264> Annual+Report.pdf) at the former Oyster Point Landfill and relocation of these materials on- and/or off-site. The landfill cap would be upgraded (<http://static1.squarespace.com/static/510a0f9ae4b008f90f030a56/t/5636d4fae4b08347cb57967b/1446434042264> Annual+Report.pdf) to meet the current requirements of Title 27 (http://www.waterboards.ca.gov/water_issues/programs/land_disposal/docs/t27w97j.pdf) of the California Code of Regulations with the approval of the Regional Water Quality Control Board and San Mateo County Environmental Health Division.

The first phase of redevelopment plans call for up to 600,000 square feet of office/R&D space, envisioned as a biotech campus, and possibly a retail/restaurant building, in the area currently occupied by the existing commercial development at the eastern side of

the landfill site. Phase I also includes the reconfiguration of Marina Boulevard and a portion of Oyster Point Boulevard, and a shuttle turn-around will be constructed adjacent to the Ferry Terminal. Parcels to the east of the new development will be graded and improved as sports fields. Further east a future hotel and retail complex is envisioned. The existing Yacht Club structure and the Harbor District maintenance building would remain.

Where is the wisdom in developing such a risky site? Health, safety, and public access concerns include flooding from landfill subsidence (<http://www.terraengineers.com/oyster-point-landfill-ferry-terminal/>) and sea-level rise, Bay saltwater breaching the landfill cap, underground electrical saltwater intrusion, gas explosions (<http://myfox8.com/2015/06/05/woman-reflects-on-1969-winston-salem-gas-explosion-that-killed-her-father/>), and liquefaction (https://en.wikipedia.org/wiki/Soil_liquefaction).

The San Mateo County Division of Environmental Health (<http://www.smchealth.org>), San Francisco Regional Water Quality Control Board (<http://www.waterboards.ca.gov/sanfranciscobay/>) and Bay Area Air Quality Management District (<http://www.baaqmd.gov>) are the agencies that regulate the landfill.

Refer to the following documents for more info:

- 2000 Water Quality Control Board Updated Waste Discharge Requirements (http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2000/R2-2000-046.pdf)
- 2010 Hazardous Materials, Oyster Point Specific Plan & Phase 1 Project (<http://ca-southsanfrancisco.civicplus.com/DocumentCenter/Home/View/1711>)
- 2013 Oyster Point Landfill Report (http://www.smharbor.com/oysterpoint/2013_Annual_Report_OysterPoint_landfill.pdf)
- 2015 Semiannual Oyster Point Landfill Report (<http://sabinabrennan.com/s/2015-Semi-Annual-Report.pdf>)
 - 2015 Letter—Oyster Point Landfill Gas Monitoring Report (/s/6551_3Q2015_LF_Gas_Mon_Report.pdf)



Oyster Point Landfill Underwater



King Tide Event Nov. 25, 2015

The Oyster Point Landfill is a closed, unlined Class III landfill that was in operation from 1956 to 1970.

“The Oyster Point Landfill in South San Francisco is an example of how the early Bayfront landfills were built.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Bayfront Landfills

Oyster Point Landfill 1958



“The Oyster Point Landfill was formed by creating a dike with soil and construction debris and filling in the Bay behind it with trash.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Waste was placed directly into the tidelands and a **wire fence** was used to control the discharge of solids into the Bay due to tidal action.

The total volume of solid waste dumped into the landfill would cover a football field almost to the height of the Empire State Building.

The landfill also received nearly a million gallons of liquid industrial waste, including paint thinners and coagulated solvent sludge.

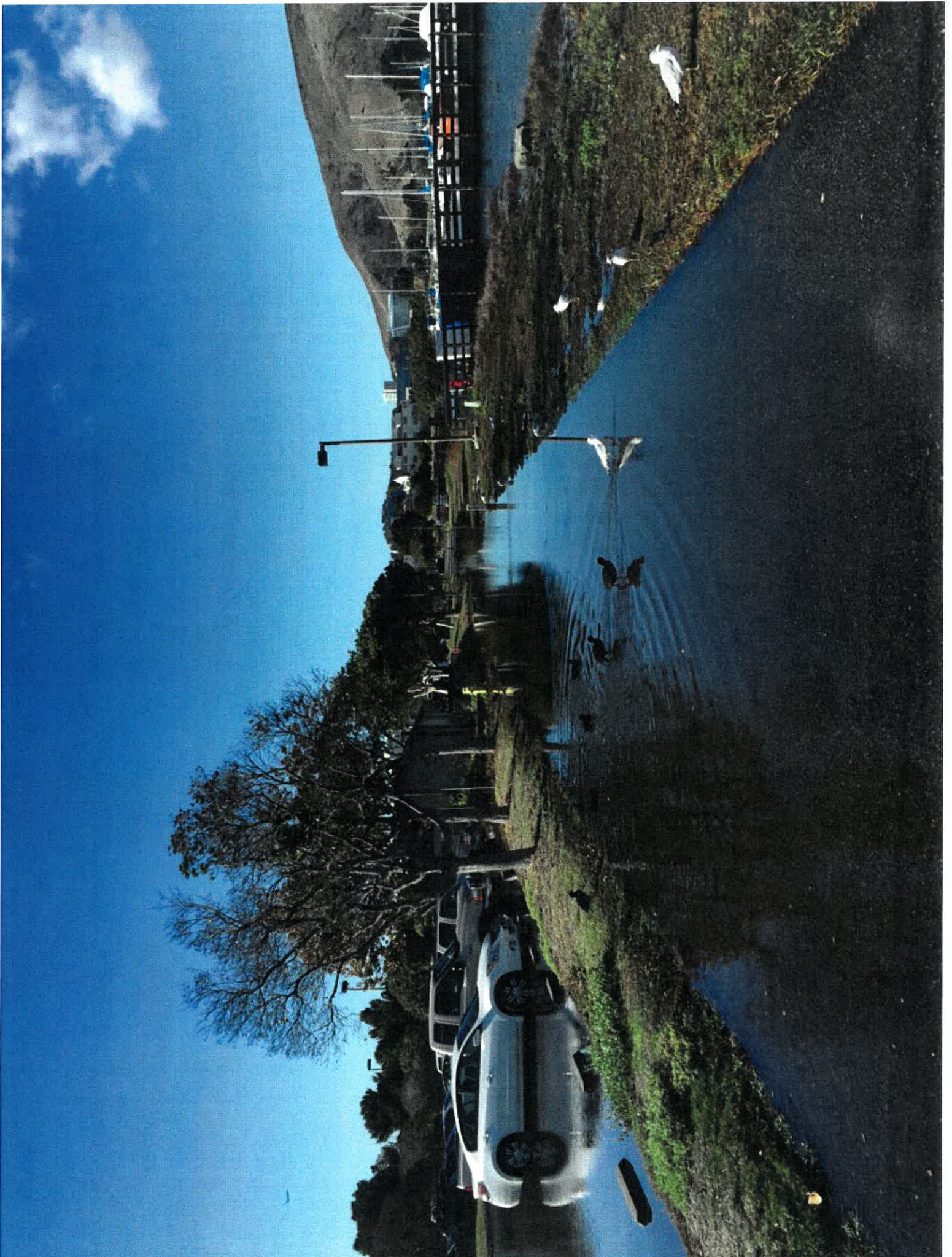
“Waste was placed on top of the Bay Mud with no liner and few features other than the dike to contain the waste.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

These days flooding during high tide events already submerges much of Oyster Point on a regular basis, and these events will only worsen as an unfortunate combination of landfill subsidence and sea level rise continue.

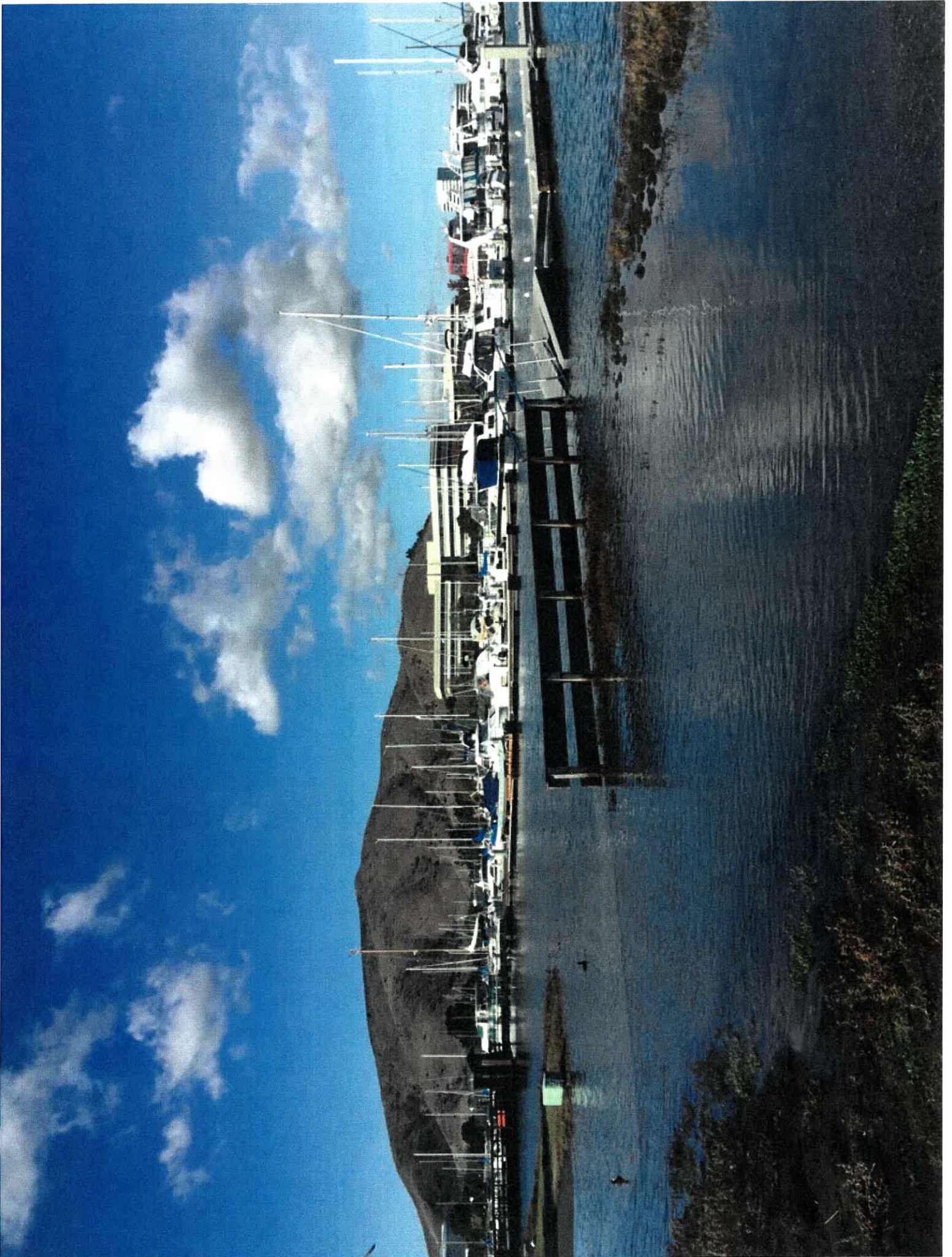




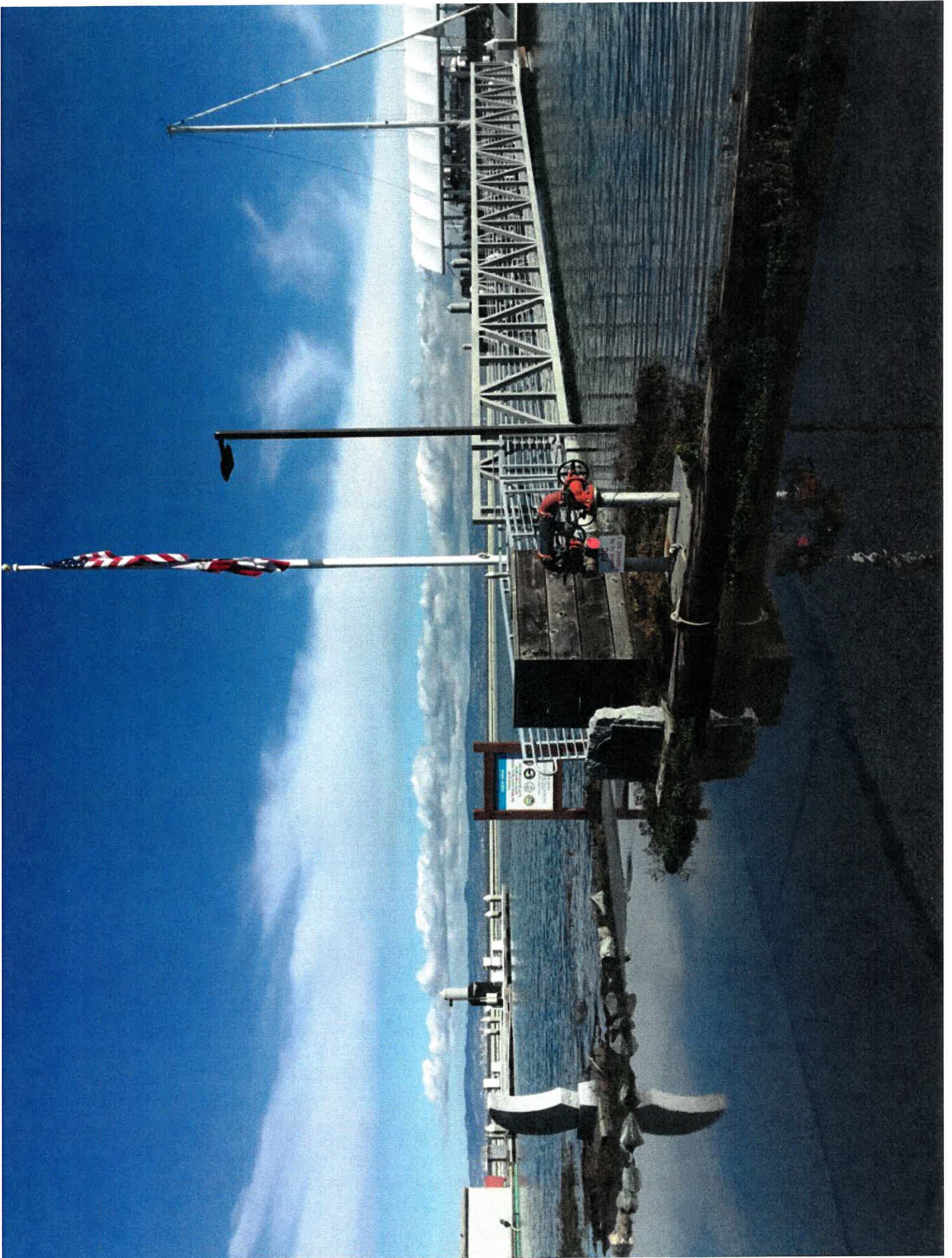


**“The older, poorly constructed
landfills like this are particularly
vulnerable to sea-level rise.”**

Keith Roberson, San Francisco Regional Water Quality Control Board Senior
Engineering Geologist and Region Two's Land Disposal Program Manager



Health, safety, and public access concerns include flooding from landfill subsidence and sea-level rise, Bay saltwater breaching the landfill cap, underground electrical saltwater intrusion, gas explosions, and liquefaction.



**“Keep in mind, there are 36
more landfills like Oyster
Point ringing our Bay.”**

Keith Roberson, San Francisco Regional Water Quality Control Board Senior
Engineering Geologist and Region Two's Land Disposal Program Manager

“The Bay Area has three active municipal landfills and 37 closed landfills located on the Bayfront as well as a few on the Pacific coast.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

“All of these landfills lie within a few feet of sea level.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Oyster Point Landfill Underwater



King Tide Event Nov. 25, 2015

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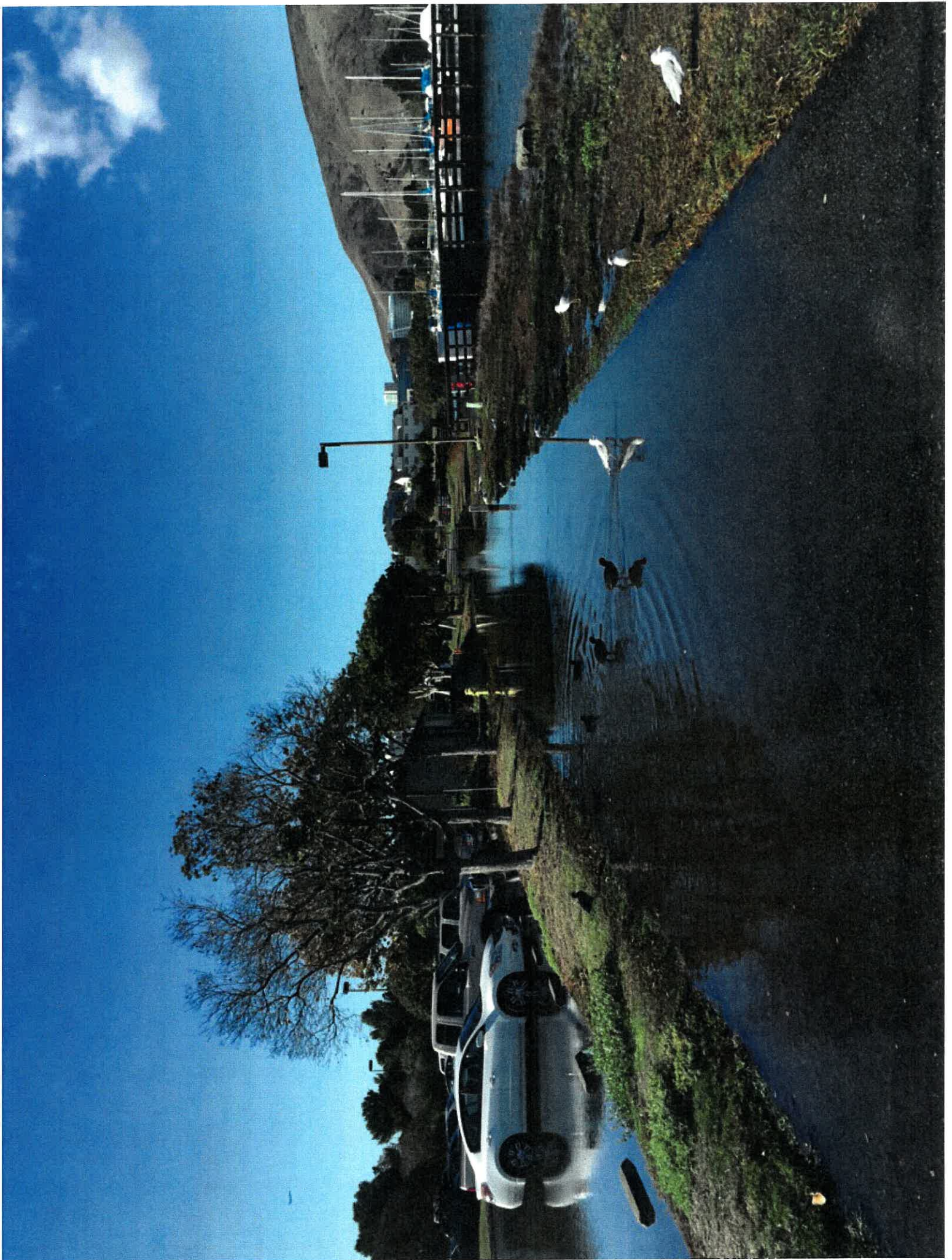
“Waste was placed on top of the Bay Mud with no liner and few features other than the dike to contain the waste.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

These days flooding during high tide events already submerges much of Oyster Point on a regular basis, and these events will only worsen as an unfortunate combination of landfill subsidence and sea level rise continue.







“The older, poorly constructed landfills like this are particularly vulnerable to sea-level rise.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Oyster Point Landfill Underwater



King Tide Event Nov. 25, 2015

The Oyster Point Landfill is a closed, unlined **Class III landfill** that was in operation from 1956 to 1970.

“The Oyster Point Landfill in South San Francisco is an example of how the early Bayfront landfills were built.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Bayfront Landfills

Oyster Point Landfill 1958

“The Oyster Point Landfill was formed by creating a dike with soil and construction debris and filling in the Bay behind it with trash.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

Waste was placed directly into the tidelands and a **wire fence** was used to control the discharge of solids into the Bay due to tidal action.

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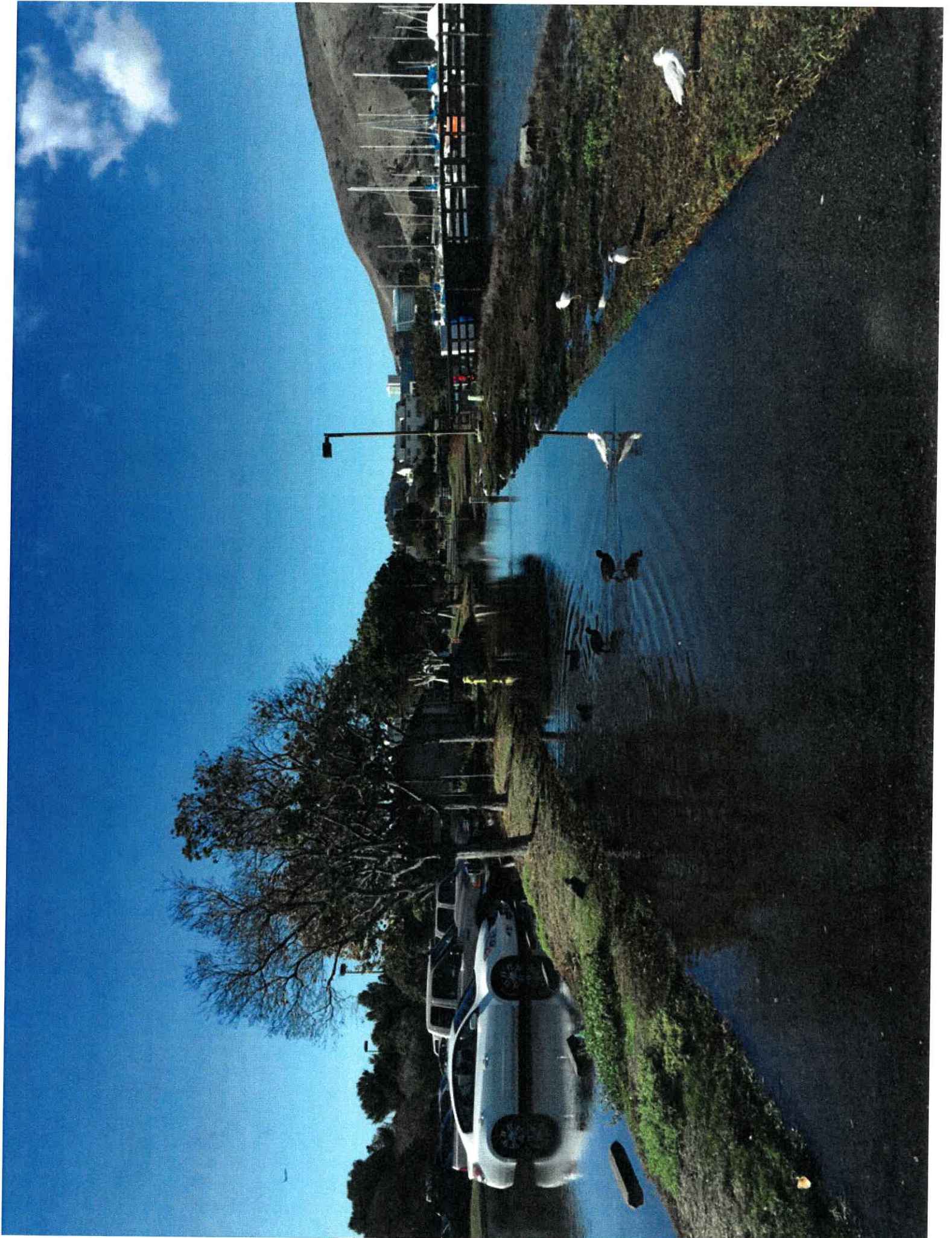
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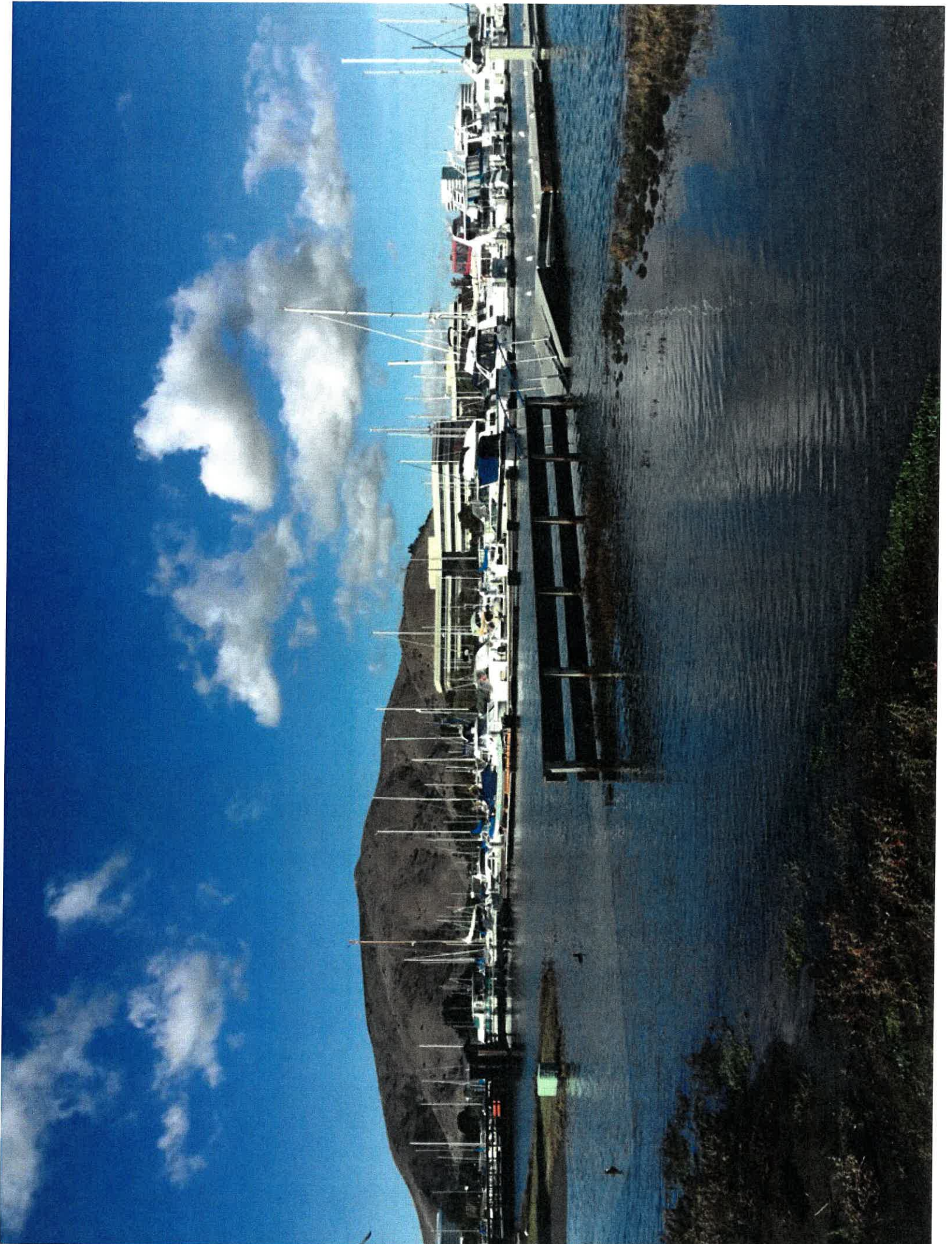






**“The older, poorly constructed
landfills like this are particularly
vulnerable to sea-level rise.”**

Keith Roberson, San Francisco Regional Water Quality Control Board Senior
Engineering Geologist and Region Two's Land Disposal Program Manager



Health, safety, and public access concerns include flooding from landfill subsidence and sea-level rise, Bay saltwater breaching the landfill cap, underground electrical saltwater intrusion, gas explosions, and liquefaction.



“Keep in mind, there are 36
more landfills like Oyster
Point ringing our Bay.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior
Engineering Geologist and Region Two's Land Disposal Program Manager

“The Bay Area has three active municipal landfills and 37 closed landfills located on the Bayfront as well as a few on the Pacific coast.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager

“All of these landfills lie within a few feet of sea level.”

Keith Roberson, San Francisco Regional Water Quality Control Board Senior Engineering Geologist and Region Two's Land Disposal Program Manager





Thanks

Sabrina Brennan
Dec. 8, 2015