TO: Members of the City Council

FROM: Mayor Jesse Arreguin and Councilmembers Sophie Hahn, Susan Wengraf, and Linda Maio

SUBJECT: Support the Resilient Shoreline Program of Citizens for East Shore Parks

RECOMMENDATION
Adopt a Resolution to support the Resilient Shoreline Program of Citizens for East Shore Parks (CESP) to raise awareness about the detrimental effects of sea-level rise and promote resilient shoreline solutions. Additionally, refer to the mid-year budget process a contribution of $10,000 to participate in CESP’s Visualizing Sea-level Rise event in Berkeley.

BACKGROUND
On April 26, 2017, the California Ocean Protection Council adopted a resolution acknowledging a report prepared by seven experts outlining the best available sea-level rise science, including the role of increasing polar ice loss. The 2017 projections by the National Oceanic and Atmospheric Administration (NOAA) show an increase up to 10 feet by the year 2100. The scientific consensus is the San Francisco Bay and its eastern shoreline, which includes Berkeley, can expect extensive damage to our built and natural environments if we are not prepared. Impacts will include massive erosion, habitat destruction, inundated freeway sections and flooding of lowland communities.

On Earth Day, April 22, 2017, CESP launched its Resilient Shoreline Program (RSP) to raise citizen awareness about the detrimental effects of sea-level rise, promote resilient shoreline solutions and assure people that solutions are available if we start planning now. CESP is planning a “Visualizing Sea-level Rise” event in Berkeley (tentatively scheduled for Saturday, July 29, 2017) in McLaughlin Eastshore State Park and a future Scientific Forum on various dates throughout the region.

The RSP is a natural extension of CESP’s 30-year effort to protect open space and develop a unified shoreline park along the Bay’s eastern shoreline. That effort achieved the spectacular McLaughlin Eastshore State Park from the Bay Bridge in Oakland and continuing north along the entire shorelines of Emeryville, Berkeley, Albany and Richmond up to Pt. Isabel. The RSP combines advocacy, science and education with the goal of achieving public awareness about climate change and its impact on the Bay
shoreline and organizing a Grand Coalition of public leaders to implement timely solutions.

Taking action now to determine appropriate locations for resilient shoreline approaches including restored marshes, horizontal levees, and other natural is critical to our community’s preparation. And by supporting CESP, the City of Berkeley would become an active member of the Grand Coalition that includes all counties, cities and special districts that share the east shore of San Francisco Bay.

ENVIRONMENTAL SUSTAINABILITY
Supports and advances the City of Berkeley Climate Action Plan and Resilience Strategy.

FINANCIAL IMPLICATIONS
$10,000 from General Fund

Attachment:
1: Resolution
2: Citizens for East Shore Parks - Proposal for Visualizing Sea-level Rise event
RESOLUTION NO. ##.###-N.S.

IN SUPPORT OF THE RESILIENT SHORELINE PROGRAM OF CITIZENS FOR EAST SHORE PARKS

WHEREAS, the State of California Ocean Protection Council updated the State of California State of Sea-Level Guidance Document in April 2017 to reflect higher sea-level rise projections, including the projection by the National Oceanic and Atmospheric Administration (NOAA) of sea-level rise ranging up to 10 feet by the year 2100; and

WHEREAS, sea-level rise will cause extensive damage to our built and natural environments if we are not prepared. Impacts will include massive erosion, habitat destruction, inundated freeway sections and flooding of lowland communities; and

WHEREAS, CESP's Resilient Shoreline Program raises citizen awareness about sea-level rise, promotes collaborative resilient shoreline solutions through the Visualizing Sea-Level Rise Event and the Scientific Forum "Getting Our Feet Wet: Sea-level Rise in the East Bay"; and

WHEREAS, taking action now to determine appropriate locations for resilient shoreline approaches including restored marshes, horizontal levees, and other natural solutions to address sea-level rise is pertinent to prepare for sea-level rise projections in the coming decades; and

WHEREAS, CESP's Grand Coalition of public leaders will gather the political will and momentum to gain funding from local, state, and federal sources for a resilient shoreline.

NOW THEREFORE, BE IT RESOLVED that the Berkeley City Council does hereby express its support for the Resilient Shoreline Program and will join the Grand Coalition of public leaders for a Resilient Shoreline.
Dear Mayor Arreguin and Members of the Berkeley City Council:

On April 26, 2017, the California Ocean Protection Council adopted a resolution acknowledging a report prepared by seven experts outlining the best available sea-level rise science, including on the role of increasing polar ice loss. The 2017 projections by the National Oceanic and Atmospheric Administration (NOAA) show a sea level rise ranging to 10 feet by the year 2100. The scientific consensus: major consequences for California's coast, including San Francisco Bay and its eastern shoreline which Berkeley shares with its neighbor's.

On Earth Day, April 22, 2017, Citizens for East Shore Parks (CESP) launched its Resilient Shoreline Program to raise citizen awareness about the detrimental effects of sea-level rise, promote resilient shoreline solutions and to assure people that solutions are available if we start planning now. We ask the Berkeley City Council to support this program by: passing a resolution in support of these efforts; providing funding in the amount of $10,000, along with other affected communities, to inform residents; participating in CESP's upcoming Visualizing Sea-level Rise event in Berkeley (tentatively scheduled for Saturday, July 29, 2017) in McLaughlin Eastshore State Park; and in a to-be-scheduled Scientific Forum; and becoming an active member of the Grand Coalition of elected officials.

The city of Berkeley is not being singled out, nor should it stand alone in this.. CESP is making this same request to Counties, Cities and Special Districts that share the east shore of San Francisco Bay. CESP is committed to working with all agencies and jurisdictions throughout the Bay Area. We hope Berkeley will become a leading participant in this environmental effort, as it has so frequently done in the past.

The Resilient Shoreline Program (RSP) is a natural extension of CESP's 30-year effort to protect open space and develop a unified shoreline park along the Bay's eastern shoreline. That effort achieved the spectacular McLaughlin Eastshore State Park from the Bay Bridge in Oakland and continuing north along the entire shorelines of Emeryville, Berkeley, Albany and Richmond up to Pt. Isabel. The RSP combines advocacy, science and education with the goal of achieving public awareness about climate change and its impact on the Bay shoreline and organizing a Grand Coalition of public leaders to implement timely solutions.
CESP’s Resilient Shoreline Program Components:

1. Engage the public, including individuals, neighborhood groups and organizations and businesses, in Visualizing Sea-level Rise events to raise awareness. CESP held the first Visualizing Sea-level Rise event near Jack London Square on April 22, 2017 as part of the nationwide March for Science. Volunteers held up 5’x10’ blue fabric panels and pennants indicating where the new shoreline would be at the 2-meter sea-level rise mark. Speakers began the display, and printed materials were available. Pedestrians and drivers in the area were shocked and surprised to learn that the Oakland Coliseum, Oakland Airport and much of the Jack London Square neighborhood would be underwater if we ignore the problem now. Onlookers were invited to join in and they enthusiastically did.

An example of some of the material used to inform the public regarding sea-level rise is displayed below: Jack London Square with 2-meters of sea-level rise, image produced by Groundworks Office. The new shoreline is approximately at 2nd and Broadway.

The next Visualizing Sea-level Rise event is tentatively scheduled to take place on Saturday, July 29, at McLaughlin Eastshore State Park at Frontage Rd. and University Ave. to indicate the new shoreline in the Berkeley/Albany area, measured at a 2-meter rise with king tides. Speakers will open the event and written materials will be distributed. In addition to notifying the media, including social media, prior to the event, an effort will be made to provide materials to schools at all levels and to encourage the development of curricula around the subject of Climate Change and Sea Level Rise.

We will have maps that predict the loss of most of McLaughlin Eastshore State Park and lower University Avenue, Aquatic Park as a swamp up to approximately the railroad, and portions of 580 and I-80 underwater in places along the Berkeley, Albany and Richmond shore. Also, we will distribute information or visuals that show the Toll Plaza to the Bay Bridge underwater and the impact on the BART tunnel as it enters the Bay (see sea-level rise maps on pages 6 and 7).

A third event is planned for October 7, 2017 during the North Richmond Shoreline Festival at Pt. Pinole Regional Shoreline Park.
2. CESP will host a Scientific Forum, tentatively titled "Getting Our Feet Wet: Sea-level Rise in the East Bay". This Forum is aimed at providing the latest scientific information, presented in the visual and written form, that is understandable to the everyday person on the street. Given interest and funding available, additional similar forums will be scheduled in different affected communities.

3. Raise awareness in legislative bodies about sea-level rise impacts due to climate change. Organize a Grand Coalition of public leaders (city, county, state and federal) in support of adopting legislation concerning a resilient shoreline which considers green infrastructure solutions (e.g. restored marshes, Horizontal Levees) in preference to hardscape solutions (e.g. sea walls). To this end, CESP is already meeting with public leaders from Crockett to San Jose to request sign-on to the Grand Coalition for the Resilient Shoreline. Solutions that are limited to individual cities will be largely ineffective to a region-wide occurrence, and also out-of-reach financially for most. For effectiveness and practical reasons, solutions must be collaborative. We hope our efforts will stimulate our political leadership to take decisive action.

4. CESP will continue its efforts to stop inappropriate development on the shoreline which will be increasingly impacted by storms, king tides, erosion and drainage problems and ultimately by sea-level rise. In making land use decisions regarding new development and infrastructure in shoreline areas, they must consider not only sea-level rise at king tide storm levels but also how this will affect drainage into the Bay. Drainage is an especially important issue to Berkeley which has traditionally experienced flooding conditions in the western portion of the city. This is also particularly important in those jurisdictions which have low lying housing or identified toxic sites on and near shoreline areas. We will continue to press each entity for passage of a resolution acknowledging the impacts of sea-level rise and commitment to looking to resilient shoreline solutions to mitigate sea-level rise.

**The RSP Budget:**

We are asking $10,000 from each East Bay jurisdiction with a shoreline on San Francisco Bay. The funds will be allocated on a single jurisdiction basis as follows, multiplied by the number of jurisdictions which participate:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>$3,000</td>
</tr>
<tr>
<td>Materials</td>
<td>$2,000</td>
</tr>
<tr>
<td>Scientific Forum</td>
<td>$5,000</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>$10,000</strong></td>
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</tbody>
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**The Data:** In April 2017, the report mentioned above, *Rising Seas in California: An update on sea-level rise science*, was released by a Working Group of the California Ocean Protection Council Science Advisory Team, supported and convened by the California Ocean Science Trust. This 2017 report is an update to the initial report titled *The State of California Sea-Level Rise Guidance Document* adopted in 2010 and updated in 2013. While the initial report provided a range of projections it did not estimate the likelihood that such levels would be met. This new report includes information on the likelihood of specific scenarios and provides a framework for evaluating risk, adaptive capacity and
consequences from rising seas. This will allow local and state stakeholders to weigh the costs and benefits of taking action now against the potential harmful effects of inaction.

“New scientific evidence has highlighted the potential for extreme sea-level rise. If greenhouse gas emissions continue unabated, key glaciological processes could cross thresholds that lead to rapidly accelerating and effectively irreversible ice loss. Aggressive reductions in greenhouse gas emissions may substantially reduce but do not eliminate the risk to California of extreme sea-level rise from Antarctic ice loss. Moreover, current observations of Antarctic melt rates cannot rule out the potential for extreme sea level rise in the future, because the processes that could drive extreme Antarctic Ice Sheet retreat later in the century are different from the processes driving loss now.” (Pg. 4, Rising Seas in California, Key findings)

Sea-level Rise Projections

“Projections are provided for 2100 according to the approach described in each report. The different approaches reflect the evolution of modeling techniques to project sea-level rise including new approaches to provide greater geographic resolution in projections and probabilistic projections, as well as the different intended purposes of the assessments (i.e., state and national). In brief, the figure depicts: CA 1st, 2nd, 3rd Assessments: range of projections for South Cape Mendocino, NOAA 2012 – range of projections of global mean sea level rise, NRC 2012 – range of projections for South Cape Mendocino, IPCC 2013 – projections of global mean sea-level rise under RCP2.6 and RCP 8.5, NOAA 2017 – range projections for U.S. sea level rise, California 4th Assessment – 5th-95th percentile probabilistic projections for San Francisco under RCP 4.5 and RCP 8.5, California Science Update (this report) – 5th -95th percentile for San Francisco using the Kopp et al., 2014 framework and H++ scenario from NOAA 2017.” (Pg. 35, Rising Seas in California)
“Sea levels are projected to increase rapidly in the middle decades of this century, with the National Research Council projecting a likely regional sea-level rise for San Francisco Bay of 0.6 to 1.1 feet and a maximum of about 1.9 feet by 2050,” says Jeremy Lowe, Resilient Landscapes Program, San Francisco Estuary Institute. “If we do not significantly limit or reduce global emissions by 2100, the likely regional sea-level rise for San Francisco Bay is projected to be 1.6 to 3.4 feet with a maximum of about 6.9 feet.”

The basis for Resilient Shoreline solutions: Researchers at Baylands Ecosystem Habitat Goals Project, led by the State Coastal Conservancy, recommend strategies for functioning, dynamic baylands:

- Restore complete baylands systems – Factor in the interconnected habitat types and what sustains them. Provide wildlife with refuges during high-water events. Provide for a way for the baylands to move landward as sea levels rise.
- Restore tidal flows to strategic areas and manage sediment to establish tidal marsh ecosystems. Tidal marshes re-established now provide ongoing habitat benefits and buffers against sea-level rise as it accelerates.
- Plan ahead. Create regional policies for the shore that anticipate change over time, using projections of sea-level rise. Plan for shifts in habitats, and plan to help them function well.
- Regional coordination – Create a resilient shoreline and one open to the public. New buildings should be restricted from the shoreline. Ensure that the regulating agencies work with the stakeholders.

About the Baylands Ecosystem Habitat Goals

*The Baylands and Climate Change: What We Can Do* is an update to the 1999 Baylands Ecosystem Habitat Goals, which for the first time set comprehensive restoration goals for the San Francisco Bay estuary.Produced by a collaborative of 21 management agencies working with a multi-disciplinary team of over 100 scientists, it synthesizes the latest science—particularly advances in the understanding of climate change and sediment supply—and incorporates projected changes through 2100 to generate new recommendations for achieving healthy baylands ecosystems.

The habitat acreage goals set in 1999 remain the same. Recommendations have been updated—and many new restoration approaches are suggested—for the region, its major sub regions, and local shorelines. These actions must be integrated with civic and economic planning to arrive at appropriate implementation strategies. The report provides technical information that policy makers and others can use in deciding how to maximize ecosystem health.

Led by the State Coastal Conservancy under the auspices of the Bay Area Ecosystems Climate Change Consortium (BAECCC).

About Citizens for East Shore Parks

Citizens for East Shore Parks (CESP) was founded in 1985 to counter proposals put forth by Santa Fe Railroad to build large-scale developments on its shoreline properties in Albany and Berkeley. While a number of people shared the dream of an open shoreline and the idea of a park along the shore, no single group existed to advocate for this dream to become reality. Environmentalists from the Citizens for the Albany Shoreline, Emeryville Shoreline Committee, Golden Gate Audubon Society, Save the Bay, and the Sierra Club banded together to form the Citizens for the Eastshore State
Park (later changed to Citizens for East Shore Parks). Other likeminded environmentalists and elected and appointed officials who shared the vision of a shoreline park, quickly joined.

Ever since that time, CESP has been working diligently to protect open space and establish a park along the East Bay shoreline through advocacy, outreach, and education. Working in partnership with area residents, organizations, and local and state governments, we have fought to preserve 1800 acres of open space in one of our nation’s most densely populated urban regions. On December 6, 2002, the Eastshore State Park was established with 8.5 miles of Shoreline Park stretching through five cities – from the foot of the Bay Bridge in Oakland through Emeryville, Berkeley and Albany to Richmond. The Park was renamed McLaughlin Eastshore State Park in 2012 after Sylvia McLaughlin. CESP’s mission is to create a necklace of shoreline parks from the Oakland Estuary to the Carquinez Strait.

Sincerely,

Robert Cheasty, Executive Director

Shirley Dean, Board President

Cameron Wilson, Program Manager