

MAR - 6 2020

SENATE RESOLUTION

REQUESTING THE DEPARTMENT OF LAND AND NATURAL RESOURCES AND THE OFFICE OF PLANNING, IN CONSULTATION WITH THE HAWAII CLIMATE CHANGE MITIGATION AND ADAPTATION COMMISSION, ACTING THROUGH ITS COORDINATOR, TO COLLABORATE TO CONVENE A TASK FORCE ON WAIKIKI'S ADAPTATION TO SEA LEVEL RISE.

1 WHEREAS, substantial flooding impacts from sea level rise
2 are projected as a result of climate change for the island of
3 Oahu, with lesser impacts for other parts of the State, as
4 discussed in more detail below; and
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6 WHEREAS, the iconic tourist destination of Waikiki, in
7 particular, is projected to incur among the worst impacts in the
8 State, including a much higher economic impact in lost property
9 value than any other area due to the dense concentration of high
10 level investment in hotels, condominiums, and retail
11 establishments there; and
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13 WHEREAS, rising sea levels are among the significant
14 adverse impacts of climate change, which result from the
15 expanded volume of ocean waters due to increased water
16 temperatures as the oceans absorb most of the increased heat
17 from global warming and the addition of melt waters from melting
18 glaciers and ice sheets in the polar regions; and
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20 WHEREAS, another effect of the increasing temperature of
21 ocean waters is to add energy to tropical storms such as
22 hurricanes, such that such storms become more powerful and last
23 longer with damaging force; and
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25 WHEREAS, these impacts have been recognized by the
26 Legislature since at least 2007, when in enacting Act 234,
27 Session Laws of Hawaii 2007, it observed that "climate change
28 poses a serious threat to the economic well-being, public
29 health, natural resources, and the environment of Hawaii" and
30 that "the potential adverse effects of global warming include a
31 rise in sea levels resulting in the displacement of businesses
32 and residences...and an increase in the severity of storms and
33 extreme weather events"; and



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WHEREAS, Hawaii, as the only state in the country consisting solely of islands, is particularly vulnerable to rising sea levels and more powerful tropical storms; and

WHEREAS, Hawaii's Sea Level Rise Vulnerability and Adaptation Report dated December 2017 (the "Sea Level Rise Report") is the first state-wide vulnerability assessment for coastal hazards associated with sea level rise in Hawaii; and

WHEREAS, preparation of the Sea Level Rise Report was initially mandated by Act 83, Session Laws of Hawaii 2014, and expanded in scope pursuant to Act 32, Session Laws of Hawaii 2017; and

WHEREAS, the Sea Level Rise Report, including its projections of sea level exposure areas described below, has been officially approved by the Hawaii Climate Change Mitigation and Adaptation Commission; and

WHEREAS, among the scientific information included in the Sea Level Rise Report are projections of future increases in global sea level of up to 3.2 feet by 2100 under the "business as usual" scenario developed by the United Nations Intergovernmental Panel on Climate Change in its Assessment Report 5 (IPCC 2014) in which greenhouse gas emissions continue to increase at current rates; and

WHEREAS, however, the Sea Level Rise Report further notes that "[more] recent observations and projections suggest that this magnitude of seal level rise could occur as early as year 2060", leading to the Sea Level Rise Report's conclusion that, "...it is vital that the magnitude and rate of sea level rise is tracked as new projections emerge, [to] plan for 3.2 feet of sea level rise now, and be ready to adjust that projection upward"; and

WHEREAS, the Sea Level Rise Report also cites emerging science, including a Climate Science Special Report (CSSR) issued in 2017 by the U.S. Global Change Research Program and a report by the National Oceanic and Atmospheric Administration, indicating that the global mean sea level is very likely to rise



1 by up to 4.3 feet by 2100 if greenhouse gas emissions continue
2 to increase and suggesting that, for high emission scenarios, a
3 global mean sea level rise in the range of 6.4 feet to 8.8 feet
4 is "physically plausible" by 2100, based on observations and
5 models of potential rapid ice melt in Greenland and Antarctica;
6 and
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8 WHEREAS, the National Oceanic and Atmospheric
9 Administration report further indicates that sea level rise in
10 the area around Hawaii and other tropical areas will exceed
11 projections of global mean sea level rise; and
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13 WHEREAS, the Sea Level Rise Report states that the
14 potential future exposure of each of the Hawaiian islands to
15 coastal hazards as a result of sea level rise were determined by
16 computer modeling, "using the best available data and methods",
17 to assess three separate chronic flooding hazards, including
18 passive flooding, annual high wave flooding, and coastal
19 erosion; and
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21 WHEREAS, the separate impacts of these three hazards were
22 mathematically combined by the model to define the total
23 projected extent of chronic flooding due to sea level rise under
24 four scenarios, including a maximum rise of 3.2 feet; and
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26 WHEREAS, the total projected area of flooding impact is
27 referred to as the "sea level rise exposure area"; and
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29 WHEREAS, the results of the modeling are available for
30 online review through an interactive tool referred to as the
31 Hawaii Sea Level Rise Viewer; and
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33 WHEREAS, in addition to sea level rise projections, the Sea
34 Level Rise Report also provides vulnerability assessments of the
35 estimated social, cultural, economic, and environmental impacts
36 of the projected sea level rise; and
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38 WHEREAS, vulnerability, as used in the Sea Level Rise
39 Report, refers to the "degree to which a system is susceptible
40 to, and unable to cope with, adverse effects of climate change,
41 including climate variability and extremes"; and
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1 WHEREAS, for lands within the sea level rise exposure area,
2 vulnerability was assessed as "the estimated potential permanent
3 loss of land and structures and displaced people from the
4 exposure to sea level rise"; and
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6 WHEREAS, potential economic loss, as determined in the Sea
7 Level Rise Report, is "based on the value of the land and
8 structures from the county tax parcel database permanently lost
9 in the sea level rise exposure area for each projected height of
10 sea level rise"; and
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12 WHEREAS, the Sea Level Rise Report's modeling projects much
13 greater impact from chronic flooding to the island of Oahu (nine
14 thousand four hundred acres) than the other islands of Hawaii
15 (Kauai having the next largest flooding acreage of 5,760 acres);
16 and
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18 WHEREAS, when these impacts are translated to vulnerability
19 assessments, the Sea Level Rise Report shows the island of Oahu
20 to have a markedly higher vulnerability to sea level rise
21 impacts than other islands of the State; and
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23 WHEREAS, Oahu's projected thirteen thousand three hundred
24 displaced persons is more than twice the total for all other
25 islands of the State and its projected \$12,900,000,000 in
26 economic loss from the chronic flooding of structures and land
27 is nearly twice the total for all other islands of the State;
28 and
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30 WHEREAS, the Waikiki area of Oahu is described by the Sea
31 Level Rise Report as particularly vulnerable to sea level rise
32 due to very low elevation of this area; and
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34 WHEREAS, also problematic is the presence of the Ala Wai
35 Canal, which will act as a conduit for ocean waters into the
36 interior of Waikiki as sea level rise worsens; and
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38 WHEREAS, this iconic tourist attraction has the highest
39 concentration and largest total value of projected economic loss
40 (estimated at over \$5,000,000,000) of any area on Oahu or
41 elsewhere in the State, including twelve major hotels as well as



1 many condominiums and expensive retail shopping establishments;
2 and

3
4 WHEREAS, Waikiki is also projected to have the single
5 largest concentration of displaced residents; and

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7 WHEREAS, the Sea Level Rise Report includes recommendations
8 for the development of policies and programs to support,
9 sustainable and resilient land use and community development,
10 prioritization of smart urban redevelopment outside the
11 projected sea level rise exposure area, development of
12 innovative and sustainable financing approaches to support
13 adaptation, and promotion of intergovernmental collaboration and
14 accountability for adaptation measures; and

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16 WHEREAS, the Sea Level Rise Report warns that decisions
17 about where to use coastal armoring and when to retreat will
18 need to be made carefully; and

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20 WHEREAS, the Sea Level Rise Report carefully points out
21 that it does not include a plan for implementation of its
22 recommendations; now, therefore,

23
24 BE IT RESOLVED by the Senate of the Thirtieth Legislature
25 of the State of Hawaii, Regular Session of 2020, that the
26 Department of Land and Natural Resources and the Office of
27 Planning, in consultation with the Hawaii Climate Change
28 Mitigation and Adaptation Commission, acting through its
29 Coordinator, are requested to collaborate to convene a task
30 force on Waikiki's adaptation to sea level rise to do the
31 following:

- 32
33 (1) After reviewing the recommendations from the Sea Level
34 Rise Report, develop, consider, and offer
35 recommendations on a broad range of alternative
36 options for adaptive measures by which Waikiki might
37 respond to projected increasing sea levels, including
38 but not limited to the extent to whether Waikiki
39 should retreat from the incursions of ocean waters or,
40 conversely, protective measures should be considered,
41 if deemed technically feasible, to preserve Waikiki in
42 its current state;



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- 2 (2) Consider and offer recommendations on potential
- 3 methods of funding of such adaptive measures for
- 4 Waikiki from public and private stakeholders; and
- 5
- 6 (3) To the extent that the Task Force concludes that a
- 7 more detailed and in-depth engineering study
- 8 concerning possible adaptation measures for Waikiki
- 9 and a more in-depth financial analysis of funding
- 10 options is needed for sound decision making on this
- 11 monumental subject, the task force is requested to
- 12 outline with as much specificity as reasonable the
- 13 topics or issues to be addressed in such follow-up
- 14 study or studies and an estimate of the costs thereof;
- 15 and
- 16

17 BE IT FURTHER RESOLVED that the Chairperson of the Board of
18 Land and Natural Resources, or the Chairperson's designee, and
19 the Director of the Office of Planning, or the Director's
20 designee, are requested to serve as co-chairs of the task force
21 and to invite one representative of each of the following
22 entities to service as members of the task force:

- 23
- 24 (1) The Office of Conservation and Coastal Lands of the
- 25 Department of Land and Natural Resources;
- 26
- 27 (2) The Department of Business, Economic Development and
- 28 Tourism;
- 29
- 30 (3) The Office of the Mayor of the City and County of
- 31 Honolulu;
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- 33 (4) The Office of Climate Change, Sustainability, and
- 34 Resilience of the City and County of Honolulu;
- 35
- 36 (5) The Department of Planning of the City and County of
- 37 Honolulu;
- 38
- 39 (6) The Hawaii Tourism Authority;
- 40
- 41 (7) The Chamber of Commerce Hawaii;
- 42



- 1 (8) The Waikiki Beach Special Improvement District
- 2 Association;
- 3
- 4 (9) The Waikiki Improvement Association; and
- 5
- 6 (10) The Waikiki Neighborhood Board; and
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8 BE IT FURTHER RESOLVED that the Chairperson of the Board of
9 Land and Natural Resources, or the Chairperson's designee, and
10 the Director of the Office of Planning, or the Director's
11 designee, are requested to consider inviting representatives
12 from the following entities to serve as additional non-voting
13 participants in the task force:

- 14 (1) A civil engineering firm;
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- 16 (2) A bank or financing firm; and
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- 18 (3) Two representatives at large from the Waikiki
- 19 community; and
- 20
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22 BE IT FURTHER RESOLVED that the task force is requested to
23 submit a report with its findings and recommendations, including
24 any proposed legislation, to the Legislature no later than
25 twenty days prior to the convening of the Regular Session of
26 2021; and

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28 BE IT FURTHER RESOLVED that the members of the task force
29 shall serve without compensation; and

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31 BE IT FURTHER RESOLVED that certified copies of this
32 Resolution be transmitted to Chairperson of the Board of Land
33 and Natural Resources; Director of Business, Economic
34 Development, and Tourism; Director of the Office of Planning;
35 Chairperson of the Hawaii Climate Change Mitigation and
36 Adaptation Commission; Director of the Office of Climate Change,
37 Sustainability, and Resilience; Director of the Department of
38 Planning of the City and County of Honolulu; Mayor of the City
39 and County of Honolulu; Chairperson of the Board of Directors of
40 the Hawaii Tourism Authority; Chairperson of the Chamber of
41 Commerce Hawaii; Chairperson of the Waikiki Beach Special
42 Improvement District Association; Chairperson of the Waikiki



1 Improvement Association; and Chairperson of the Waikiki
2 Neighborhood Board.

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OFFERED BY: Karl Abraham

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