

Ala Wai Watershed Partnership

December 29, 2016

To: Speaker Joseph M. Souki
House of Representatives
Hawai'i State Legislature
State Capitol, Room 431
415 South Beretania Street
Honolulu, Hawai'i 96813

President Ronald D. Kouchi
Senate
Hawai'i State Legislature
State Capitol, Room 409
415 South Beretania Street
Honolulu, Hawai'i 96813

**Re: Report to the Twenty-Ninth Legislature, 2017 Regular Session,
per House Concurrent Resolution 61, House Draft 1, 2016 Regular Session**

Aloha! Thank you for the opportunity to provide this summary report on the progress of the Ala Wai Watershed Partnership's efforts in response to the Legislature's support of the Partnership's action steps, as endorsed in House Concurrent Resolution 61, House Draft 1, 2016 Regular Session 2016.

We look forward to the Legislature's continued favorable encouragement of the various actions, opportunities, and needs of participating partners in the Ala Wai Watershed, and its commitment to the shared goals of increasing the resilience and sustainability of O'ahu's Ala Wai Watershed communities, including Waikīkī.

Sincerely,

A handwritten signature in black ink that reads "Michael P. Hamnett". The signature is written in a cursive, flowing style.

Michael P. Hamnett
Chair of the Ala Wai Watershed Partnership
Researcher, University of Hawai'i Social Sciences Research Institute

Report to the Twenty-Ninth Legislature 2017 Regular Session



Ala Wai Watershed Partnership

Prepared by:

Chair of the Ala Wai Watershed Partnership, with support from

The University of Hawai'i Sea Grant College Program

In response to House Concurrent Resolution 61, House Draft 1, 2016 Regular Session

December 2016

As a measure of strong local support for the developing collective vision, both chambers of the 2016 Hawai'i Legislature expressed their appreciation and comprehension of the opportunities and needs in the Ala Wai Watershed by adopting House Concurrent Resolution 61, House Draft 1 (HCR61 HD1), in its final form on April 22, 2016 – "Endorsing and Supporting the Ala Wai Watershed Partnership"¹ (Appendix A).

The resolution requested that the Chair of the Ala Wai Watershed Partnership (Partnership) "submit a report on the progress of the Ala Wai Watershed Partnership toward the action steps [outlined in the resolutions] and in raising financial support for the Partnership..."

As stated in the resolution, "... the Partnership is a voluntary partnership of state, county, federal, business, and nongovernmental leaders from many sectors, including engineering, planning and design, flood mitigation and stormwater management, coastal hazards and climate change mitigation and adaptation, economic development, business, finance, insurance, social science, extension and education, philanthropy, and others, that is ready to support shared goals of increasing the resilience and sustainability of the Ala Wai watershed and Waikiki."

Cleaning-up the Ala Wai Canal is in the best interest of the entire community. It has also attracted the attention of local and international partners committed to healthy ecosystems and

¹ http://capitol.hawaii.gov/measure_indiv.aspx?billtype=HCR&billnumber=61

community resilience. Improving the Ala Wai Canal requires management of its tributaries from Mānoa, Makiki and Pālolo valleys, and in turn, managing the Ala Wai Watershed to mitigate runoff and pollution. As such, an Ala Wai “cleanup” can be a showcase for the leading edge of environmental work in Hawai‘i, which is increasingly refocusing on the interconnected relationships of intensive mountain rainfall, forests, streams, drainage systems, harbors, reefs and near-shore waters.

Collaboration through the Ala Wai Watershed Partnership can also foster better coordination among residents, businesses, paddlers, sailors, swimmers, environmentalists, interested scientists, and government. Engaging the entire “Community” in this project will increase awareness about how to manage the mountain-to-seas ahupua‘a in modern time and in an urban setting.

The upcoming return of Polynesian Voyaging Society’s (PVS) Hōkūle‘a in June 2017 provides an opportunity to highlight Hawai‘i’s leadership in sustainability, building on Hawaiian culture and values. The Ala Wai Watershed Partnership continues to expand with new and continuing participating collaborators, including the Polynesian Voyaging Society, Hawai‘i Green Growth Initiative, Ala Wai Watershed Association, Waikīkī Improvement Association, Kyo-ya Hotels & Resorts, ‘Iolani School, the Exemplary State Foundation, University of Hawai‘i, Department of Land and Natural Resources, the City and County of Honolulu, and others.

The Partnerships AWWP seeks to facilitate building a holistic and systems-based solution to water management in the watershed and cleaning up the Ala Wai Canal. The Partnership is launching a collaborative process to convene key stakeholders and engage and educate the community to identify and integrate engineering and design, culture and resource stewardship, education and engagement, and innovative financing and policy solutions.

The following is a reporting on the action steps as requested in HCR61 HD1 (2016).

(ACTION ITEM 1) Continuing the Partnership’s efforts to increase awareness about catastrophic natural disaster risk, and facilitate stakeholder engagement in designing, funding, building, and maintaining integrated infrastructure systems that improve the resilience of vulnerable communities in the Ala Wai watershed and Waikīkī.

As described above, the collaboration in the Ala Wai Watershed continues to grow as agencies, organizations, and individuals recognize the opportunity and imperative that is the Ala Wai Watershed and Canal through Waikīkī. The Partnership has successfully elevated recognition and awareness in the watershed through presentations, media, and initiatives.

Against the backdrop of the *Mālama Honua* Worldwide Voyage and leveraging the September 2016 IUCN World Conservation Congress (WCC) in Hawai‘i, partners educated key stakeholders on ecosystem-based management and disaster risk reduction in the area through day-long workshops, community design charrettes, site tours, and panels, and the announcement of a design challenge (see (ACTION ITEM 5) below). These efforts were highlighted in the following news stories:

- September 06, 2016. UH News. [“Students around the world challenged to Make the Ala Wai Awesome,”](#) University of Hawai‘i News [on-line].
- September 11, 2016. Schaefer, A. [“Summit finds ways to protect Waikiki, Ala Wai in disasters,”](#) Honolulu Star Advertiser.

- October 24, 2016. Schaefer, A. "Nainoa Thompson joins effort to clean filthy Ala Wai." Honolulu Star Advertiser.

Furthermore, the Ala Wai Watershed and community resilience have been identified as critical initiatives beyond the WCC in "Hawai'i's Legacy: The Sail Plan for a Sustainable Future," developed jointly by IUCN WCC Legacy Committee and endorsed by the IUCN WCC Hawai'i Host Committee (Appendix B). Ala Wai community resilience continues to mark as a cross-sectoral policy priority with broad public and private sector support as it cuts across all Hawai'i's six statewide 2030 *Aloha+ Challenge* goals (which were endorsed unanimously by the State Legislature through SCR 69 SD 1 (2014) and committed to by a declaration signed by the Governor, four county mayors, and CEO of the Office of Hawaiian Affairs (July 2014)).

The University of Hawai'i Sea Grant College Program (Hawai'i Sea Grant) serves a coordination and facilitation role with the Partnership. Hawai'i Sea Grant gave five (5) presentations and led eleven (11) site tours focused on the Ala Wai Watershed, Canal, and Waikiki. These activities engaged government agencies, non-profits and philanthropy, international delegations, and educators and students. Most recently Hawai'i Sea Grant hosted staff from the City and County of Honolulu Mayor's Office and its liaison from the Rockefeller Foundation as part of the 100 Resilient Cities award.

To continue to support coordination and leadership for the Partnership, funding applications were submitted to the US EPA (by Hawai'i Sea Grant; unsuccessful) and The Travelers Excellence in Community Resilience Award Application (by Hawai'i Green Growth; under review). Private sector businesses and organizations in the Partnership have pledged financial support for Partnership logistics, staffing, and technical studies, but additional funding and support will be needed from the state and city.

Other Partner highlights include the Ala Wai Watershed Association's (AWWA) continued execution of a Hawai'i Department of Health 319(h) Polluted Runoff Control grant and 'Iolani School's Nā Wai 'Ekolu program and capacity building school sharing network.^{2,3} In addition to the numerous volunteers the AWWA has enlisted, 'Iolani School's initiative has engaged over 2100 students, over 600 educators, and nearly two dozen schools in STEM education and biological assessments and stream monitoring. Additionally, Sustainable Coastlines Hawai'i is progressing on permitting and fundraising for the installation of a *Trash Water Wheel*⁴ at the mouth of the Ala Wai Canal to mitigate and collected rubbish entering the ocean from the canal.

The values and goals of the Partnership of ecosystem restoration, cultural and resource stewardship, water quality improvements, and community and economic resilience remain consistent with those set forth by agency and nonprofit missions of those who participate.

(ACTION ITEM 2) Investigating insurance, reinsurance, and risk transfer solutions, including parametric insurance, to help mitigate current and future climate risks that place substantial financial and political burdens on the state economy and state and county governments.

² <https://sites.google.com/a/iolani.org/stemplus/>

³ <http://www.iolani.org/news/video-ala-wai-watershed-project>

⁴ Baltimore Waterfront Partnership: <http://baltimorewaterfront.com/healthy-harbor/water-wheel/>

As partners pursued adoption of HCR61 HD1 during the 2016 Legislative Session, two bills related to insurance and disasters were concurrently progressing:

- HB2576 HD1 - Relating to Natural Disaster Protection (crossed to Senate and passed first reading; referred to GVO/CPH, WAM)
- SB2732 HD1 - Relating to the Hawaii Hurricane Relief Fund (crossed to House and passed second reading; referred to FIN).

The Partnership endorsed HB2576 HD1, which would establish a 3-year pilot parametric disaster insurance⁵ program within the State Department of Accounting and General Services (DAGS) to be funded by the investment income from the hurricane reserve trust fund.

Again, capitalizing on the IUCN WCC, the Partnership scheduled briefings with national and international risk and resiliency experts and local leaders, including with state legislators, the City and County of Honolulu Mayor's Office, and relevant state offices (e.g., Insurance Commissioner-Department of Commerce and Consumer Affairs).

The Partnership continues to investigate solutions to protect Hawai'i from financial risk associated with natural disasters (i.e., impacts in the Watershed and Waikīkī and statewide consequences thereof from damages, employment and business disruption, and lost tax revenues). It is noteworthy that the Federal Emergency Management Agency National Flood Insurance Program (NFIP) has itself purchased a reinsurance policy and looks to expand this coverage through the *NFIP 2016 Reinsurance Initiative*⁶, which is intended "to more actively manage its financial risk... and diversify the tools it uses to manage the financial consequences of its catastrophic flood risk."

(ACTION ITEM 3) Investigating a community investment vehicle to align public funds and catalyze private investment in designing, building, and maintaining resilient infrastructure.

The Partnership had previously conducted research on public-private partnership models and legislation, and a Community Investment Vehicle (CIVic) framework. These findings and information were discussed with Hawai'i State Legislators prior to and during the 2016 Session (Appendix C). Additional consultation was provided by private and nonprofit organizations who participated in the initial January 2015 workshop (referenced in HCR61 HD1, Appendix A).

The Partnership continues to pursue support to further investigate and educate on such mechanisms toward public-private partnerships and governance models that would benefit the complex challenges in the Ala Wai Watershed and other Hawai'i geographies. Such frameworks would ensure timely investments in resilient infrastructure and resource management practices, while providing support for resilient infrastructure maintenance and operations into the future.

Currently, participants in the Partnership are raising private funds for staff support and to kick-start legal and technical work required to formally establish a private-public partnership to manage ecosystem restoration, water quality improvements, and hazard-mitigation activities.

⁵ Parametric, or index-based, insurance solutions settle claims on the characteristics of a disaster, as opposed to the loss sustained from the disaster.

⁶ <https://www.fema.gov/national-flood-insurance-program-2016-reinsurance-initiative>

(ACTION ITEM 4) Investigating new and innovative financing strategies for climate resilient infrastructure projects in the Ala Wai watershed, including stormwater capture and reuse, water efficiency measures, and insurance premium securitization.

An important partner in the Watershed is the University of Hawai'i (UH), more specifically, the UH Mānoa (UHM) campus. UHM faces a multiplicity of facility challenges, including large storm flooding, inadequate sewer and water piping, regular power outages, cross-campus easements, utility conflicts, deferred maintenance backlogs and crumbling facilities. At a certain point, the aggregation of so many problems start to create opportunities for positive transformation. UHM is currently working on an Infrastructure Trunk Lines and Water Catchment and Reuse Project.

The infrastructure and water reuse project redirects much needed facility updates into an organized network of updated utilities connected to every building on campus via a trunk line loop integrated with a water catchment and reuse system that can offset 73% of potable water needs, convey renewable energy via smart grids, and provide future "plug & play" flexibility to 21st century classrooms, all paid for by savings provided via new best practices and sustainable engineering.

The project updates UHM's drain system to convey 100-year storm (i.e., the 1% annual chance exceedance storm) flow by redirecting 95% of rainfall into Low Impact Design (LID) and gray water cisterns mixed with filtered R1 sewer water (i.e., a particular treatment level of recycled water) for use by toilets, irrigation, and cooling towers, reserving storm pipes for larger storm events. This design provides systems for new smart grid, fiber optics, and water lines conveying recycled/potable/fire/chilled water with capacity for future technologies and is designed to minimize impact to campus surfaces during installation and at lowered cost. Highly efficient HVAC systems (heating, ventilation, and air conditioning) proposed in two Central Utility Plants provide for the decommissioning of aging chillers across campus and are projected to reduce maintenance by 85%, and both water and electricity use by half. While this system provides a roadmap to Net Zero Water, Energy, and Waste, it saves money, updates equipment, increases campus resilience, keeps the UHM campus and surrounding neighborhoods safer, reduces pollution output to Mānoa Stream, and provides educational opportunities for students and the consultant community to learn from and spread forth across the state.

These forward-looking innovations are the type that can inspire and scale-up across neighborhoods and communities. The Partnership supports UHM's efforts and looks to learn from and encourage these developments. The Partnership continues to investigate other innovations in stormwater credits, capture, and reuse, which have begun generating revenue in other municipalities while also reducing flooding and water quality problems.

The Ala Wai Watershed Partnership will be exploring collaboration with the Honolulu Board of Water Supply, which is currently doing an Ala Wai Watershed Study that will complement the flood mitigation study done by the Army Corps and the drainage plan done by the University of Hawai'i at Mānoa. The Partnership is very interested in the possibility of stormwater capture and reuse and wants to explore this with the Honolulu Board of Water Supply.

Participants in the Ala Wai Watershed Partnership also strongly support important and ongoing work of agencies that further the goals of the Partnership, including Hawai'i Department of Land and Natural Resources and the Watershed Partnerships, and the new City and County of Honolulu Office of Climate Change, Sustainability, and Resiliency and the work through the

Rockefeller Foundation's 100 Resilient Cities award; organizations such as the Ala Wai Watershed Association and Waikīkī Beach Special Improvement District Association; and educational entities such as 'Iolani School and the University of Hawai'i Sea Grant College Program. The Partnership is committed to supportive collaboration and leveraging funds towards mutual goals across the Watershed and Waikīkī.

(ACTION ITEM 5) Coordinating a prize competition that connects local and world-class urban planners, engineers, and designers with business groups, policy makers, and community leaders in the Ala Wai watershed to design climate resilient infrastructure and support ecosystem restoration.

On September 5, 2016, at an *Aloha+ Challenge* leadership panel at the IUCN WCC, the University of Hawai'i (UH) President David Lassner announced the "*Make the Ala Wai Awesome*" *Student Design Challenge* (Challenge) (www.alawaichallenge.org). The Challenge officially begins January 9, 2017: submissions are due March 17, 2017 and winners will be announced in June 2017 during the World Youth Congress, hosted by the UH.

The Challenge seeks ideas from youth and students from around the world to help advance the collective goals and action agenda of the Ala Wai Watershed Partnership including stream and ecosystem restoration, green stormwater infrastructure, stormwater capture and reuse, sediment control, flood mitigation, contemporary urban ahupua'a, Ala Wai as a destination, education and engagement with community/youth, and coalitions with local participation.

The effort is led by the UH President's Office, UH Office of Sustainability, and UH Sea Grant College Program. Background research and challenge foci were informed by the Ala Wai Watershed Partnership's prior efforts and outreach. The Partnership is encouraged by President Lassner's leadership on the matter, and recognition of the UH's physical and educational place in the Watershed and state.

Conclusions and Recommendations

Organizations participating in the Ala Wai Watershed Partnership have made significant progress toward meeting the goals of the partnership. Efforts to increase awareness of the disaster risks and the water quality problems in the Ala Wai have resulted in an expansion in the partnership and pledges of private sector financial support. However, the lack of funding has seriously hampered progress on development of a community investment vehicle and innovative financing for the kind of resilient infrastructure that will be required to significantly reduce the disaster risk, improve water quality and restore forest and stream ecosystems in the Ala Wai Watershed. Funding is needed to assess legal and organizational options for both innovating financing and the planning and management of resilient infrastructure.

APPENDICES

- **Appendix A. House Concurrent Resolution 61, House Draft 1 (5 pages)**
- **Appendix B. "Hawai'i's Legacy: The Sail Plan for a Sustainable Future" (2 pages)**
- **Appendix C. Preliminary Research for a CIVic, aka, Community Investment Vehicle (5 pages)**

HOUSE CONCURRENT RESOLUTION

ENDORISING AND SUPPORTING THE ALA WAI WATERSHED PARTNERSHIP AND
REQUESTING A REPORT ON PROGRESS MADE BY THE PARTNERSHIP.

1 WHEREAS, Hawaii is highly vulnerable to natural disasters,
2 including hurricanes, floods, and droughts; and
3

4 WHEREAS, the State and counties are challenged to design,
5 finance, construct, operate, and maintain various water
6 infrastructure, including infrastructure for fresh water, waste
7 water, and stormwater; and
8

9 WHEREAS, Waikiki generates approximately eight percent of
10 Hawaii's gross domestic product, seven percent of the State's
11 employment, and nine percent of state tax revenues; and
12

13 WHEREAS, a one percent annual chance exceedance flood
14 event, or the "one-hundred-year flood", in the Ala Wai
15 watershed, including Waikiki, would affect approximately 1,358
16 acres within the watershed and over 3,000 properties with an
17 estimated \$318,000,000 in structural damages alone; and
18

19 WHEREAS, in March 2006, as much as ten million gallons of
20 raw sewage were dumped into the Ala Wai Canal following the
21 rupture of a sewer line due to heavy rains, and as recently as
22 August 2015, heavy rains caused a major sewage spill, forcing
23 temporary closure of beaches in Waikiki; and
24

25 WHEREAS, as of May 2015, under Act 42, Session Laws of
26 Hawaii 2015, the counties have the authority to establish and
27 charge user fees to create and maintain any stormwater
28 management system or infrastructure; and
29

30 WHEREAS, the economic risk to the Waikiki area from a
31 category 4 hurricane hitting Honolulu could result in an



1 estimated \$30,000,000,000 in economic losses and structural
2 damages; and
3

4 WHEREAS, the state-sponsored United States Army Corps of
5 Engineers Ala Wai Canal Flood Mitigation Project (Ala Wai
6 Project) is only being designed to reduce riverine flood risks
7 from the one hundred-year flood in the Ala Wai watershed,
8 including Waikiki; and
9

10 WHEREAS, in addition to flood risk reduction, the original
11 scope of work for the Ala Wai Project also included ecosystems
12 restoration, water quality enhancements, and other community
13 benefits; and
14

15 WHEREAS, the Army Corps of Engineers, in partnership with
16 the Hawaii Emergency Management Agency, hosted and invited
17 participation by the public, private, philanthropic, and non-
18 governmental sectors in the January 2015 "Hawai'i Disaster Risk
19 Workshop: Mitigating Catastrophic Disaster Risk and Building
20 Resilience in the Ala Wai Watershed"; and
21

22 WHEREAS, the objectives of this workshop were to:
23

- 24 (1) Raise awareness of natural disaster risk and
25 vulnerability in the Ala Wai watershed, including the
26 economic and social consequences of a natural disaster
27 to Waikiki's residential, tourism, and business
28 communities;
29
- 30 (2) Examine options for mitigating risk and improving
31 community resilience through gray and green
32 infrastructure investments;
33
- 34 (3) Explore the opportunities to transfer disaster risk
35 from the government to private markets and leverage
36 public resources to catalyze private investment in
37 resilience through new partnerships; and
38
- 39 (4) Identify strategies to engage the community to create
40 shared value and build locally appropriate solutions
41 to urban design and ecosystem restoration; and



1 WHEREAS, an action agenda was agreed upon moving forward
2 from the workshop into 2015, and the Ala Wai Watershed
3 Partnership (Partnership) coalesced as the working group to
4 further the five steps of the action agenda of the workshop; and
5

6 WHEREAS, the Partnership is a voluntary partnership of
7 state, county, federal, business, and nongovernmental leaders
8 from many sectors, including engineering, planning and design,
9 flood mitigation and stormwater management, coastal hazards and
10 climate change mitigation and adaptation, economic development,
11 business, finance, insurance, social science, extension and
12 education, philanthropy, and others, that is ready to support
13 shared goals of increasing the resilience and sustainability of
14 the Ala Wai watershed and Waikiki; and
15

16 WHEREAS, the Partnership and Ala Wai Project may help
17 demonstrate how, as outlined in President Obama's Climate Action
18 Plan, climate resilience can create shared value for local
19 communities, mitigate the damage resulting from current and
20 future climate-related events, and close the national
21 infrastructure gap by leveraging innovative partnerships; and
22

23 WHEREAS, the Partnership and Ala Wai Project, as a result
24 of Hawaii's social, cultural, and economic connections to small
25 island developing states, may be a model for climate resiliency
26 projects in the Pacific islands, Caribbean, and other regions
27 facing increasing climate-related challenges; and
28

29 WHEREAS, the Partnership and Ala Wai Project could be
30 featured at the United States-hosted 2016 International Union
31 for the Conservation of Nature World Conservation Congress in
32 Hawaii as a high-level commitment to support resilient
33 infrastructure investments through innovative financing and
34 public-private partnerships, while also restoring and protecting
35 critical watersheds; and
36

37 WHEREAS, a state commitment to the action agenda of the
38 Partnership will help to:
39

- 40 (1) Ensure progress on the critical flood risk reduction
41 objectives of the Ala Wai Project;



- 1 (2) Reintegrate ecosystem restoration, water quality
2 enhancements, and other community benefits into an Ala
3 Wai Project scope;
4
- 5 (3) Promote public-private partnerships that improve and
6 sustain the ability of local governments to design,
7 finance, construct, operate, and maintain various
8 infrastructure;
9
- 10 (4) Attract local, regional, national, and global
11 attention to pressing infrastructure investment needs,
12 while providing innovative design and community
13 engagement to enhance resilience and sustainability in
14 Hawaii;
15
- 16 (5) Strengthen Hawaii's partnerships with federal
17 agencies, including the Army Corps of Engineers,
18 United States Environmental Protection Agency,
19 President's Task Force on Climate Preparedness and
20 Resilience, National Oceanic and Atmospheric
21 Administration, and others; and
22
- 23 (6) Serve as a model for complex infrastructure
24 investments regionally and nationally; now, therefore,
25

26 BE IT RESOLVED by the House of Representatives of the
27 Twenty-eighth Legislature of the State of Hawaii, Regular
28 Session of 2016, the Senate concurring, that this body endorses
29 and supports the Ala Wai Watershed Partnership and its
30 integrated approach to increase resilience and sustainability in
31 the Ala Wai watershed and Waikiki through five action steps,
32 which include:
33

- 34 (1) Continuing the Partnership's efforts to increase
35 awareness about catastrophic natural disaster risk,
36 and facilitate stakeholder engagement in designing,
37 funding, building, and maintaining integrated
38 infrastructure systems that improve the resilience of
39 vulnerable communities in the Ala Wai watershed and
40 Waikiki;
41
- 42 (2) Investigating insurance, reinsurance, and risk
43 transfer solutions, including parametric insurance, to
44 help mitigate current and future climate risks that



- 1 place substantial financial and political burdens on
- 2 the state economy and state and county governments;
- 3
- 4 (3) Investigating a community investment vehicle to align
- 5 public funds and catalyze private investment in
- 6 designing, building, and maintaining resilient
- 7 infrastructure;
- 8
- 9 (4) Investigating new and innovative financing strategies
- 10 for climate resilient infrastructure projects in the
- 11 Ala Wai watershed, including stormwater capture and
- 12 reuse, water efficiency measures, and insurance
- 13 premium securitization; and
- 14
- 15 (5) Coordinating a prize competition that connects local
- 16 and world-class urban planners, engineers, and
- 17 designers with business groups, policy makers, and
- 18 community leaders in the Ala Wai watershed to design
- 19 climate resilient infrastructure and support ecosystem
- 20 restoration; and
- 21

22 BE IT FURTHER RESOLVED that the Chair of the Ala Wai
 23 Watershed Partnership is requested to submit a report on the
 24 progress of the Ala Wai Watershed Partnership toward the action
 25 steps and in raising financial support for the Partnership to
 26 the Legislature no later than twenty days prior to the convening
 27 of the Regular Session of 2017; and

28
 29 BE IT FURTHER RESOLVED that certified copies of this
 30 Concurrent Resolution be transmitted to the White House Council
 31 on Environmental Quality; White House Office of Management and
 32 Budget; Governor; Mayor of the City and County of Honolulu; and
 33 United States Army Corps of Engineers, Honolulu District.



Hawai'i's Legacy: The Sail Plan for a Sustainable Future

He Wa'a He Moku, He Moku He Wa'a

The Canoe is an Island, The Island is a Canoe

We are living in the legacy of Hawaiian indigenous wisdom and sustainability that started long before today. The IUCN World Conservation Congress is a critical moment to build on Hawai'i's legacy and continue this important work for the sake of future generations. Hawai'i is honored to host the IUCN Congress, and committed to leveraging this opportunity to advance knowledge exchange, catalyze new partnerships and resources, and increase momentum toward achieving statewide sustainability goals.



Aloha+ CHALLENGE

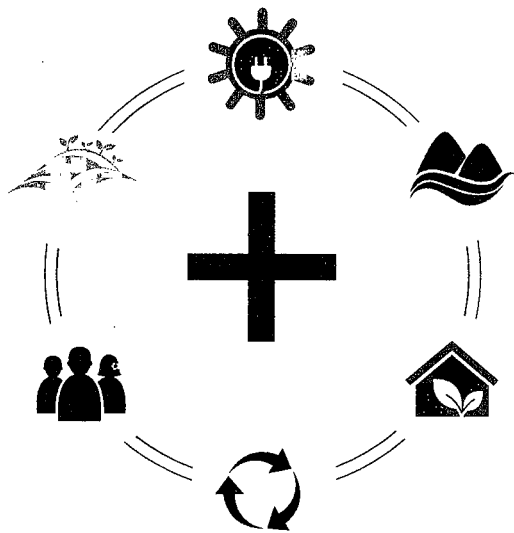
The Sail Plan

Like the two hulls of a voyaging canoe, the **Mālama Honua Worldwide Voyage** and the **Aloha+ Challenge** together form Hawai'i's Sail Plan, inspiring collective action on sustainability for future generations.

Hōkūle'a, Hawai'i's legendary voyaging canoe, exemplifies the spirit, challenges and hope of islands everywhere as she makes her Worldwide Voyage, connecting islands and communities by stringing a lei of aloha, inspiration and partnership. Building on the forty-year journey of Hōkūle'a to revive and share Hawaiian culture and indigenous wisdom, Hawai'i applied these guiding values and principles to launch the Aloha+ Challenge: *He Nohona 'Ae'ōia, A Culture of Sustainability* — an integrated approach that provides a unified framework for collaboration and action across the state. The Governor, four County Mayors, Office of Hawaiian Affairs, State Legislature, and public-private partners launched the Aloha+ Challenge, committing to achieve six locally appropriate sustainability goals by 2030 in the areas of clean energy, local food, natural resource management, solid waste, smart sustainable communities, and green workforce and education. The Aloha+ Challenge is a joint leadership commitment with high-level statewide goals, an open-data tracking mechanism, shared policy and action agenda, and a public-private partnership — Hawai'i Green Growth — that serves as the backbone for this collaborative work.

Hawai'i may be the most isolated populated landmass on the planet, but our experiences, challenges and solutions have global relevance. Against the backdrop of the Paris Agreement on climate change and the United Nations 2030-Agenda for Sustainable Development, local action has never been more critical. Hawai'i's unique approach to sustainability has been recognized as a place-based model that can be adapted to local culture, values, and context with other islands and communities facing similar challenges. Together, we can achieve the 2030 Sustainable Development Goals and build a global culture of sustainability.

Hawai'i's legacy is our unified sail plan to navigate toward a more sustainable and resilient future for our islands, and our canoe, island earth.



CLEAN ENERGY

70% clean energy :
40% from renewables & 30% from efficiency



LOCAL FOOD

At least double local food production :
20-30% of food consumed is grown locally



NATURAL RESOURCE MANAGEMENT

Reverse the trend of natural resource loss mauka to makai by increasing freshwater security, watershed protection, community-based marine management, invasive species control & restoration of native species



WASTE REDUCTION

Reduce the solid waste stream prior to disposal by 70% through source reduction, recycling, bioconversion and landfill diversion methods



SMART SUSTAINABLE COMMUNITIES

Increase livability & resilience in the built environment through planning and implementation at the state and county levels



GREEN WORKFORCE & EDUCATION

Increase local green jobs and education to implement these targets

HawaiiGreenGrowth.org

Hawai'i Legacy Initiatives

Celebrating Action on Sustainability

Inspired by the IUCN Congress, the following initiatives are part of a collective sail plan putting Hawai'i on a course toward a sustainable future.



Island Resilience Initiative Building on national and international recognition, Hawai'i will partner with the Global Island Partnership to scale the Aloha+ Challenge as a locally appropriate sustainability framework that can be adapted to local culture, values, and context and advance the United Nations 2030 Agenda for Sustainable Development.
jessica.robbyns@glispa.org <http://www.glispa.org>

Hawai'i Biosecurity Strategy The State is launching the first Hawai'i Interagency Biosecurity Plan to address the threat of invasive species. The plan includes strategic policy, process, and infrastructure improvements to increase Hawai'i's pre-border, border, and post-border biosecurity over the next 10 years. Coordinated enhancements across agencies and partners will minimize invasive species threats to Hawai'i's local agriculture, environment, economy, human health, and lifestyle. christym@rocketmail.com

Aloha+ Challenge Dashboard An online open data platform to track progress, provide accountability and transparency, inform policy, and inspire action on Hawai'i's six statewide sustainability 2030 goals, featuring natural resource management, clean energy, and solid waste goals at the IUCN Congress.
christin@hawaii greengrowth.org <http://dashboard.hawaii.gov/aloha-challenge>

Mosquito Free Hawai'i This workshop will seek strategic, systems-thinking solutions to eliminate mosquito-borne diseases affecting humans and wildlife by focusing on novel technologies to transform, suppress and ideally eliminate invasive mosquito vectors from the Hawaiian Islands, considering Hawai'i as a model system to pilot solutions for application throughout the Pacific Rim, Southeast Asia and globally.
kykanesh@hawaii.gov

Global Green Islands Summit To celebrate the thirtieth-year anniversary of the Sister State relationship, Hawai'i and Jeju will convene the Global Green Island Summit during the 2016 IUCN Congress. The leaders dialogue will showcase the important role of islands and sub-national leadership on clean energy, conservation, and sustainability, and establish lasting partnerships to share best practices and and scale island models to help meet the 2030 Agenda for Sustainable Development. jamie.k.lum@hawaii.gov

Hawai'i IUCN Motions Hawai'i introduced seven IUCN Motions to ensure an action legacy from the 2016 IUCN Congress through lasting partnerships and policies that can have global implications. Proposed motions include Aloha+ Challenge island sustainability models; indigenous culture and global conservation; Pacific region climate resiliency action plan; international biofouling and invasive marine species; community based marine management; marine debris; and environmental courts and tribunals. jayparasco@gmail.com



Hawai'i Youth Challenge 2020 The IUCN Congress Students Day will launch the Hawai'i Youth Challenge 2020, a design thinking process for high-school students to identify top sustainability school challenges or projects for completion by year 2020 as a milestone towards the State's 2030 goals. june.chee@kupuhawaii.org

2017 World Youth Congress The University of Hawai'i at Manoa will host the next World Youth Congress in 2017, celebrating the return of the Hōkūle'a through convening young leaders from around the globe. Hosted by a different country every two-years to engage youth leadership on key global issues, the Congress themes vary from eradicating poverty to sustainable development.
mklynch@hawaii.edu <http://peacechild.org/world-youth-congress/>

Pacific Resiliency Leaders Program Formally launching in 2017, this fellowship program would provide young adults across the Pacific with opportunities for deep learning, hands on work experience, and peer networking to prepare the next generation for leadership roles in sustainable development and resilience.
june.chee@kupuhawaii.org



Clean Energy In support of the Hawai'i Clean Energy Initiative and the State's aggressive goal of 4300 GWh electricity savings by 2030 and 100 percent renewable energy in the electricity sector by 2045, the Hawai'i State Energy Office is making strides on energy efficiency as a key strategy to advance statewide goals.
carilyn.shon@hawaii.gov <http://www.energy.hawaii.gov>

100% Renewable Energy for Islands Commitments Blue Planet Foundation is partnering with Pacific Island leaders to catalyze ambitious clean energy commitments, building on Hawai'i's 2015 100% renewable energy by 2045 goal. raya@blueplanetfoundation.org



Make the Ala Wai Awesome University of Hawai'i plans to announce the launch of an international student design competition to "Make the Ala Wai Awesome," crowd sourcing ideas from the brightest minds of our youth. This design challenge will help envision an inspiring large scale, systems thinking approach towards comprehensive restoration of the Ala Wai watershed that incorporates flood mitigation, ecosystem preservation, community engagement, cultural connections, public private partnerships, and improvement of the visitor experience.
gonserm@hawaii.edu <http://www.alawaichallenge.org/>



Papahānaumokuākea Marine National Monument Celebrating the tenth year anniversary of the Papahānaumokuākea Marine National Monument, one of the largest marine conservation areas in the world, the groundbreaking commitment by President Obama to expand the Monument will help conserve Hawaiian culture, biodiversity, and improve resiliency to impacts of climate change on coral reef ecosystems.
william.j.ailajr@hawaii.gov <http://expandpnm.com/>

Hawai'i 30 by 30 Watershed Forest Target The Hawaiian koa -'ōhi'a rainforests capture and provide the islands' supply of fresh clean water, lessen impacts from climate change, dramatically reduce flooding and erosion into our coral reefs, provide an ecosystem for unique plants and wildlife, and have profound cultural significance. The State of Hawai'i is committed to protecting 30% of our highest priority watershed forests by 2030 (253,000 acres).
katie.C.Ersbak@hawaii.gov

Hawai'i 30 by 30 Oceans Target The State of Hawai'i is committed to effectively managing 30% of Hawai'i's nearshore ocean waters by 2030, setting a unified target for marine practitioners grounded in science. There are multiple ways to effectively manage Hawai'i's nearshore waters, including improving the capacity and coverage of enforcement, strengthening the State's marine management infrastructure, supporting community-based marine management, systematizing marine monitoring, and other efforts. ela.y.berman@hawaii.gov

He Lono Moku: The State of the Environment Report Hawai'i 2016 The inaugural State of the Environment Report Hawai'i 2016 represents an unprecedented public-private effort to annually track and share vital information on the status of an entire state's environment as Hawai'i strives to meet its sustainability goals for 2030. A project of the Environmental Funders Group, it draws on information and data from the online Aloha+ Challenge Dashboard, with the first report focusing on Freshwater Security, Renewable Energy and Community-Based Marine Management. www.helonomoku.com

OZONE: Outrigger Resorts Champions Ocean Health OZONE (Outrigger's ZONE) is a global conservation initiative and action plan centered on protecting the health of coral reefs and oceans surrounding the iconic beach destinations of Outrigger Resorts. In partnership with government, private industry and conservation organizations worldwide, OZONE helps educate and engage visitors through interactive learning and local community activities
www.outrigger.com/ozone

Hawai'i Plant Conservation Network Laukahi is a voluntary alliance of agencies, organizations and individuals aiming to protect Hawai'i's rare plant species through coordinated conservation efforts by implementing the Hawai'i Strategy for Plant Conservation.
laukahi808@gmail.com <http://laukahi.org/>

Natural Capital Investment Partnership The State Legislature passed the Natural Capital Investment Partnership (HB2040; Act 172, SLH 2016) to support expanded work on natural resources management, specifically for innovative priority projects that increase water security. The pilot program will be established by DLNR and require a 1:1 match of private investment for state funds to provide reliable, increased long-term funding to meet the state's 2030 fresh water target through public-private partnerships. katie.C.Ersbak@hawaii.gov

Wildlife Trafficking The State Legislature passed SB2647 to help stop endangered species like elephants, rhinos, pangolins, sharks, rays, and other animals from finding their way into Hawaiian markets. As a major commerce and tourism hub for Asia and the Pacific, Hawai'i is taking leadership to contribute to the global effort to protect critically endangered species. <http://www.vulcan.com/>



Local Food Production The State of Hawai'i is dedicated to increasing its food security and self-sufficiency by providing Hawai'i's farmers and ranchers with the opportunity to enhance local food production with increased economic support and additional land and water resources. hdoa.info@hawaii.gov

Ho'ala Lokoi'a Guidebook The newly released fishpond revitalization guidebook released at the IUCN Congress by the State Department of Land and Natural Resources provides step by step guidance to navigate a streamlined the regulatory process for Hawaiian fishpond revitalization and highlights the important contribution of Hawaiian fishpond stewardship to our cultural, sustainable food supply, and improved environmental management.
michael.cain@hawaii.gov



Food Waste Recovery Pilot The IUCN World Conservation Congress, Hawai'i Convention Center, and local community groups are partnering to help divert food waste from the Congress, while gathering essential data. This pilot is an opportunity for the Hawai'i Convention Center to create a replicable model for future large-scale conferences and events. milholen.jennifer@gmail.com

Preliminary Research for a CIVic aka, Community Investment Vehicle



"CIVic" – Community Investment Vehicle

Public-Private Partnership (P3) Elements and Relevancy:

- Governance Structure and Legal Environment – Does it reduce uncertainty and transaction cost? Is there a need for an "Advisory Board" – at the project level or programmatic level (e.g., Virginia Office of Public-Private Partnerships)?
- Procurement Process – Is it transparent and streamlined? Does it evaluate value for money effectively? Can it select "best" bid and not just "lowest" bid?
- Contract Management and Oversight – Does it balance the allocation of risk and rewards? Is it shared among the public entity, private entity, and residents?
- Investment Partnerships – Does it permit unsolicited proposals?
- Return on Investment –
- Financing Sources and Revenue Collection Methods – Is financing flexible and viable? Are projects connected with private capital? Do pay-out structures reduce revenue volatility? Does it link payer to beneficiary?
- Operations & Maintenance – Who is responsible? Who is actually performing?
- Stakeholder Outreach, Engagement, and Education – Are there mechanisms for collaboration across institutions and sectors?

Objectives – **(1)** high-quality infrastructure improvements (e.g., drinking-, storm-, and waste- water; flood management) at a cost savings to the government while realizing a reasonable return on investment; **(2)** align public funds and catalyze private investment in designing, building, and maintaining resilient infrastructure; **(3)** develop new and innovative strategies for climate resilient infrastructure projects, including stormwater reuse, water efficiency measures, and insurance premium savings securitization
[i.e., ways to generate revenue without raising taxes or floating bonds]

Features – **(1)** underlying laws and/or policies that define a process to identify and evaluate P3 opportunities, and overseeing contracts; **(2)** assessments of cost effectiveness, value for money, and risks and rewards; **(3)** transparent procurement processes that allows for innovation; **(5)** stakeholder/community support; and **(6)** contracts that define performance metrics and payment terms, fairly balance risks and rewards and are for the appropriate length of time to manage risk and provide a reasonable return on investment.

Review of HRS

A review of P3 in HRS returns 2 references: Ch. 33 (Hospitals and Medical Facilities) and Maui County's permission to establish a P3; and Ch. 104 (Wages and Hours of Employees on Public Works), Section 2, Applicability.

Existing Tools/Authorities in Hawai'i

-Fees, Assessments, and Taxes

- Tax Increment Financing – HRS 46-101-113 (in California this mechanism funds Enhanced Infrastructure Finance Districts – A How-to Guide)
- Transfer of Development Rights – HRS 46-161-165
- Special Improvement Districts (e.g., both Waikīkī BID and Waikīkī Beach SID)
- Stormwater Fees - Act 042 (May 06, 2015) – Relating to Stormwater Management (HB 1325 HD1 SD1): Authorizes the counties to establish and charge user fees for stormwater management
 - Sec. 46-1.5 **General powers and limitation of the counties.** Subject to general law, each county shall have the following powers and shall be subject to the following liabilities and limitations:
 - (5) Each county shall have the power to:
 - (E) Establish and charge user fees to create and maintain any stormwater management system or infrastructure.
 - (= "stormwater utility?")

-Municipal Development Authorities (HCDA, PLDC, etc)

- Hawai'i Community Development Authority, HRS Ch. 206E
- Public Lands Development Corporation, Act 55, 2011 (2011-2013)
- Redevelopment Agency – HRS 53-1, Urban Renewal Law - Attorney General Opinions: Redevelopment agencies are not "political subdivisions" within meaning of § 103-53 and are not subject to tax clearance requirements. Att. Gen. Op. 62-14.

Common Features from P3 State Enabling Legislation (adapted from Geddes, 2013¹)

- The law allows multiple types of infrastructures and facilities to be eligible for a P3
- The law allows existing facilities, as well as new facilities, to be P3 eligible
- The law allows the responsible public entity to receive both solicited and unsolicited proposals
- The statute exempts P3 from the state's procurement laws
- The law explicitly permits revenue sharing in PPP agreements
- The law explicitly permits the state to make payments to the private entity in lieu of direct user fees (e.g., availability payments)
- The law explicitly grants authority to entities other than the primary public sponsor (i.e., counties, municipalities) to enter into P3 agreements
- The law exempts the private entity from paying property taxes on the land required to operate the facility
- The law explicitly allows P3 agreements to contain non-compete clauses or compensation clauses
- The law allows both public and private sector money to be combined in the financing of a P3 project
- The law protects the confidentiality of proprietary information contained in a private entity's proposal
- The law does not put a limit on the number of projects that can be developed under the P3 approach

¹ Geddes, R., Wagner, B., 2013. "Why Do U.S. States Adopt Public-Private Partnerships Enabling Legislation?" *Journal of Urban Economics*. Vol. 78, pp. 30-41.

Questions/Considerations

HRS Ch. 84 – “Standard of Conduct” and Conflict of Interest Law. Would a P3 need an exception to the procurement code? Exception to civil service law (Ch. 76)?

Ex. RCUH enabling legislation – Ch. 304A-3001 to 3011, with respect to procurement, public employment, and collective bargaining

Key Reference

US EPA (2015). Community Based Public-Private Partnerships (CBP3) and Alternative Market-Based Tools for Integrated Green Stormwater Infrastructure: A Guide for Local Governments.²

State Enabling Legislation (p.14)

Statutory authority ties to policies potentially affecting the feasibility and success of a P3 in a community. One of the barriers to using a P3 approach is the lack of enabling legislation at the state level (Geddes, 2013). Currently, 33 states have enabling legislation for the creation of P3s... There are still legislative challenges for the adoption of a P3 approach for stormwater. Not all adopted legislation clearly designates a path to adopt P3s at the local government level due to lack of direct guidance in the enabling language, include the following:

- Procurement processes and methods;
- Agreement provisions;
- Review and approval processes for proposed P3 arrangements;
- Project eligibility;
- Use of private consultants;
- Length of concession;
- Bid selection, and
- Authority to enter into P3 arrangements.

Traditional P3s and the Water Sector (p. 12)

The P3 model is not a one-size fits all approach, but a range of potential structures. The right structure selected for a P3 depends on many factors, such as project complexity, public policy goals, private sector interest, and the potential P3's “value for the money,” also known as a cost advantage. The desire and ability to transfer various risks from the public sector to the private sector is also a key consideration for determining the most appropriate structure. P3 structures include the following options (arranged from least risk transfer to most risk transfer):

- Design-Build-Finance (DBF)...
- Design-Build-Operate-Maintain (DBOM)...
- Design-Build-Finance-Maintain (DBFM)...
- Design-Build-Finance-Operate-Maintain-Availability Payment P3 (DBFOM-AP)...
- Design-Build-Finance-Operate-Maintain-Revenue Concession (DBFOM-RC)...
- Build-Own-Operate (BOO)...

² http://www.epa.gov/reg3wapd/greeninfrastructure/GI_CB_P3_Guide_%20EPA_R3_FINAL_042115_508.pdf

Key Model

Virginia PPEA³ – Public-Private Education Facilities and Infrastructure Act (2002; Va. Code §§56-575.1 through 56-575.17⁴)

"The Public-Private Education and Infrastructure Act of 2002 (PPEA) was designed to bring private sector expertise to bear on public projects - saving time and money.

It has allowed private entities to "acquire, design, construct, improve, renovate, expand, equip, maintain or operate qualifying projects" and encourages innovative approaches to financing construction and renovation.

The law created resources to fund a comprehensive range of projects, including schools, wastewater treatment plants, and telecommunications infrastructure – essentially any type of public venture."

Procedures for State Agencies and Institutions (Jan. 2008)⁵

Sample Supporting Language

The state and counties are challenged to design, construct, finance, operate and maintain various water infrastructures (e.g., fresh water, waste water, stormwater).

Partnerships between the public and private sector can help improve and sustain the ability of local governments to design, construct, finance, operate and maintain various infrastructure.

As of late 2012, 32 U.S. states and Puerto Rico had enacted legislation enabling the use of Public-Private Partnerships (P3). P3 enabling laws address such issues as the treatment of unsolicited P3 proposals, prior legislative approval of P3 contracts, and the mixing of public and private funds (Geddes, 2013).

Public partnerships with the private sector have the potential to reduce costs, improve quality control and expedite delivery of services (Brookings Institution, 2011 (in EPA 2015)).

Research from the US EPA highlights that a balanced P3 can: allocate the responsibility to the party best positioned to control the activity and manage the risks; produce local economic value through private sector participation; solve a costly, complex public problem with faster, less expensive solutions and better outcomes; substitute private resources for limited public resources; drive innovation and operational efficiencies, ultimately lowering future costs; and, enhance the community's involvement and participation in municipal functions.

As of May 2015 the counties have the authority to establish and charge user fees to create and maintain any stormwater management system or infrastructure (Act 042 [May 06, 2015], HRS Sec. 46-1.5 (5)(e) "General powers and limitation of the counties").

³ <http://www.dgs.state.va.us/PPEA/tabid/62/Default.aspx>

⁴ <http://law.lis.virginia.gov/vacode/title56/chapter22.1/>

⁵ <http://www.dgs.state.va.us/LinkClick.aspx?fileticket=H9WdcbwMscY%3d&tabid=62>

Stormwater Fees - Act 042 (May 06, 2015) – Relating to Stormwater Management (HB 1325 HD1 SD1); Authorizes the counties to establish and charge user fees for stormwater management

A BILL FOR AN ACT RELATING TO STORMWATER MANAGEMENT.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that climate change poses a significant threat to the economy and environment of the Hawaiian islands and has contributed to an eighteen per cent drop in precipitation over the past thirty years. This increasing drying trend, coupled with growth in the State's population, will likely raise the demand for water and compromise Hawaii's fresh water supplies over the coming decades. If Hawaii does not begin planning ahead, ensuring the islands' supply of fresh water in the future may cost the public a great deal as the cost of desalination and other alternatives rise.

The legislature further finds that changes in land use from forested areas to urban development and other human uses increase the amount of rain ending up as storm runoff instead of replenishing the State's aquifers. Encouraging the adoption of best practices and infrastructure investment by the counties to capture and retain rainfall in Hawaii for potable water before it becomes stormwater runoff that results in pollution to streams, wetlands, and near-shore ocean areas will save the public significantly in the long run.

The purpose of this Act is to encourage the protection of water resources by authorizing counties to charge user fees to create and maintain stormwater management systems or infrastructure.

SECTION 2. Section 46-1.5, Hawaii Revised Statutes, is amended to read as follows: ...

Subject to general law, each county shall have the following powers and shall be subject to the following liabilities and limitations:

(5) Each county shall have the power to:

(E) Establish and charge user fees to create and maintain any stormwater management system or infrastructure.