



## RIDGE TO REEF

*A Holistic Watershed Management Plan for Waikīkī's Ala Wai Watershed*



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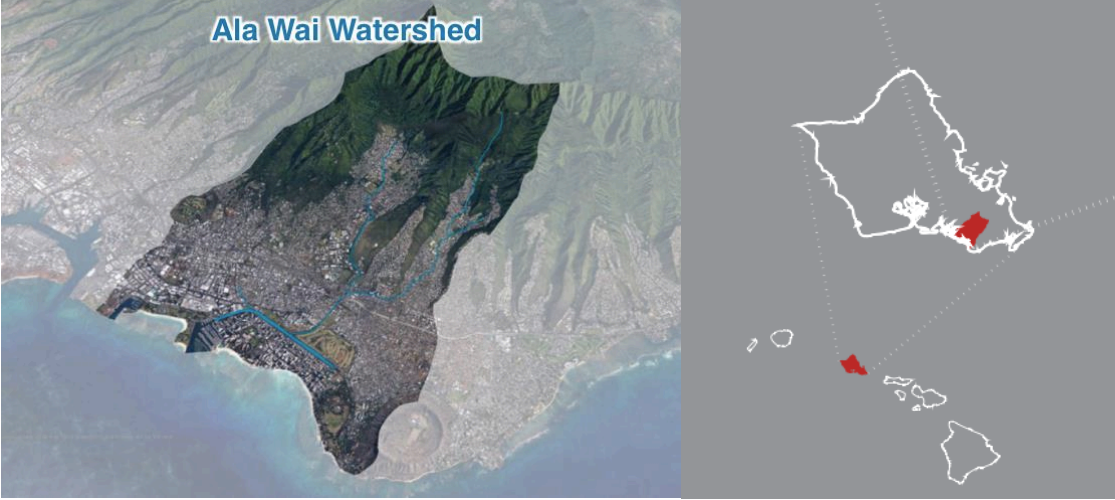
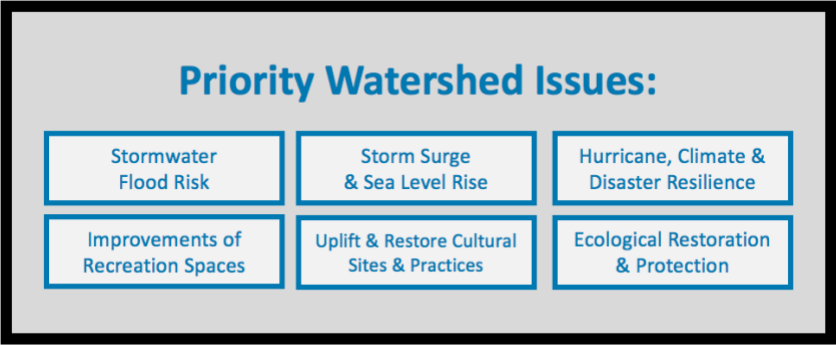
\* will be submitted after December 6 Board Meeting

# Executive Summary

November 12, 2019

Applicant Name: Pono Shim, President, O’ahu Economic Development Board,  
City & County of Honolulu, Hawai’i

The Ala Wai Watershed Collaboration (AWWC) proposes to develop a Holistic Watershed Management Plan including both an inclusive and stakeholder-driven process as well as rigorous technical analysis to address critical water issues and vulnerabilities for the Ala Wai Watershed, Hawai’i’s most densely populated and economically significant watershed. The AWWC is an existing watershed group with over 100 individuals from 65 organizations who represent affected stakeholders and sectors across all geographic areas from the mountains to the ocean. Over the past 4 years, the AWWC has built a structure of quarterly meetings and Working Groups, who identified six priority issues and a list of potential solutions, projects, and programs that could address these issues. The proposal would fund a structured 2-year process and technical analysis that quantifies the impacts, costs, and implementation timelines of solutions to develop an actionable report that can serve as a roadmap for a project pipeline (Task B; Timeline: July 2020 – June 2022). This process would apply Native Hawaiian principles and practice of managing resources and stakeholders at a watershed level (the *ahupua’a* system) to a modern urbanized watershed and would advance the Aloha+ Challenge Goals, Hawai’i’s six holistic statewide 2030 goals for economic, social, and environmental prosperity. The proposed project is not located on a Federal facility.



## D.2.2.4. Technical Proposal and Evaluation Criteria - Background Data:

### The Ala Wai Watershed at a Glance



#### Geography & Environment:

- 19 square miles, 40% conservation zone (forested mountain area, 10% native forest) and 60% zoned urban
- **Climate:** Annual rainfall is 25 inches along the coast and more than 160 inches in the mountains (winter is the rainy season)
- **Biodiversity:** 39 species of native fish, crustaceans, snails, worms, insects and birds including an endangered bird, mammal, and 2 damselflies.
- **Hydrology:** Stormwater is not treated and feeds three main streams (Pālolo, Mānoa, Makiki), which then feed into the Ala Wai Canal and then the ocean (waste water system is separate)

#### Economics & Community:

- **Population:** 200,000 residents, 80,000 visitors on a given day
- **Key infrastructure:** 30 schools, 2 universities including UH Mānoa campus (Hawai'i's largest), and Waikīkī, which generates 7% of Hawai'i's GDP and 9% of tax revenue.
- **Communities:** 11 distinct neighborhoods with different demographics



#### Culture & History:

- **Indigenous Land Management:** Long history of indigenous practices and knowledge of managing land holistically in units defined by watershed boundaries (ahupua'a)
- **Cultural Sites:** Many culturally & historically important sites (including Hawaiian temples called heiau) associated with songs, and traditions (mo'olelo)
- **Historic Land Use:** Watershed used to be predominantly agriculture (terraced and flooded taro patches), coastal wetland, and several hundred fishponds.



#### Hazards:

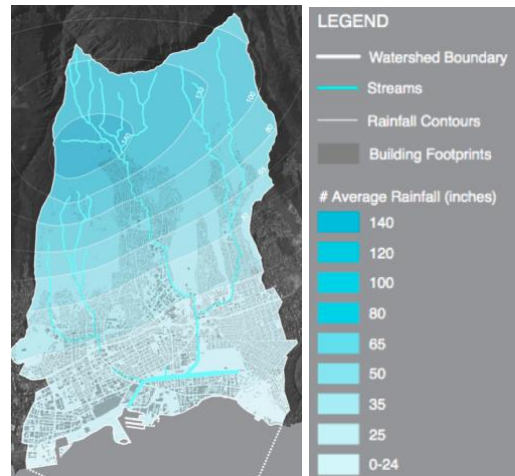
- **Flooding:** flash floods from heavy rains (\$85 million damage to UH campus in 2006, estimated \$1.14 billion damage from 1% chance flood)
- **Hurricanes:** Storm surge and winds from hurricanes (estimated \$30 billion damage from category 4 hurricane)
- **Sea Level Rise:** Increased flood risk, permanent inundation, and groundwater salinization from level rise (recommended to plan for 3.2 feet by 2100)
- **Invasive Species:** invasive plants and animals in the forest reduce aquifer recharge, increase erosion and debris



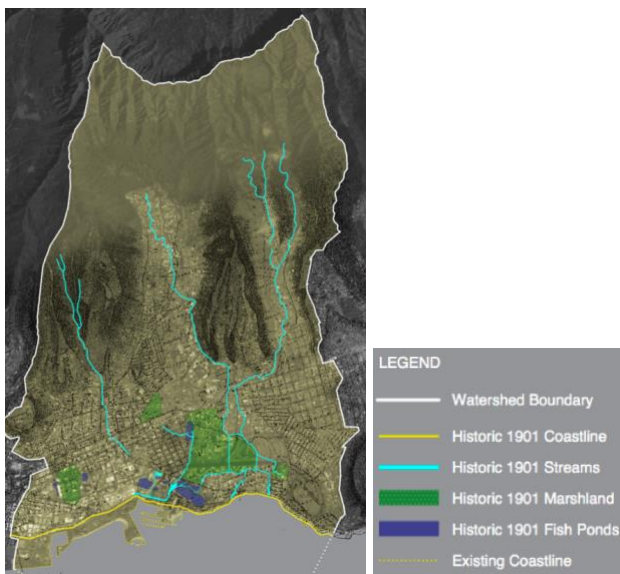




**SOURCE OF WATER SUPPLY:** The island of O’ahu is divided by the ridge of the Ko’olau Mountain Range, which forms the upper boundary of the Ala Wai Watershed. Rainwater flows from the mountain ridge to the ocean through three valleys named after the primary streams (Pālolo, Mānoa, and Makiki streams). Rainfall at the higher elevations is as much as 160 inches per year, while the coastal area receives only 25 inches per year. The Ala Wai Watershed feeds the larger Honolulu Aquifer. Models presented by the Honolulu Board of Water Supply estimate that due to climate change, rainfall could increase by as much as 20% during the rainy season and decrease by as much as 50-60% during the dry season in the years 2071-2100.



Map: rainfall gradient (25-140 inches)

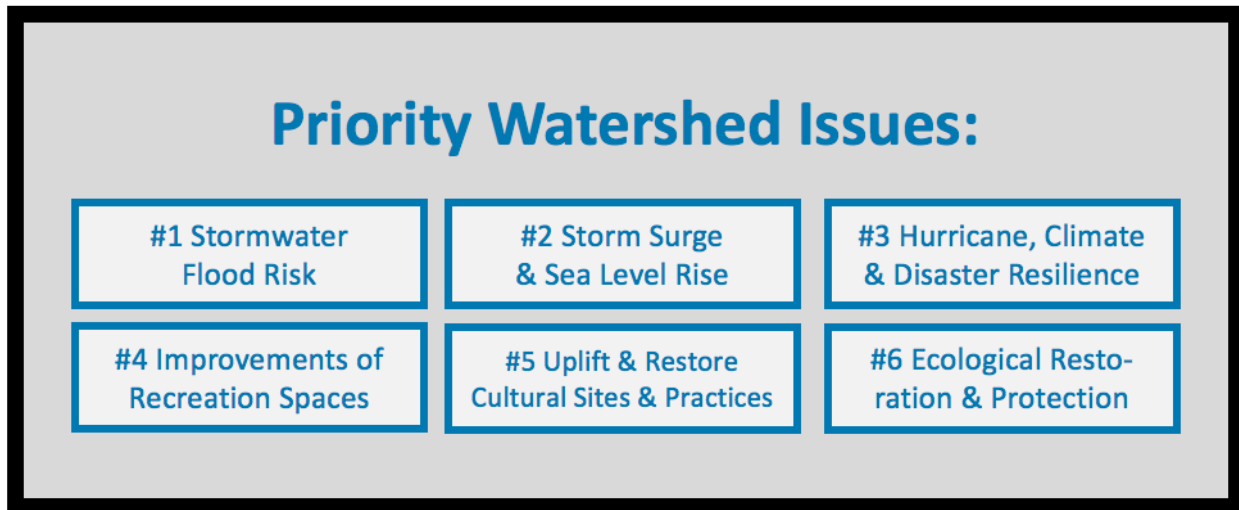


Map: historic stream flow (1901)

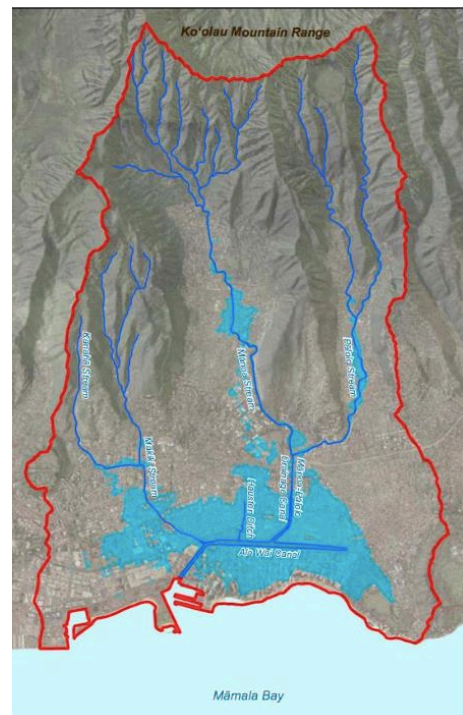
**LENGTH OF EXISTENCE:** The construction of the Ala Wai Canal in the late 1920s drained the coastal wetland that is now Waikīkī and redirected streams through channelization, thereby altering the watershed boundaries. Prior to the construction of the canal, the Makiki Stream was part of the Honolulu Watershed, while Pālolo and Mānoa streams were part of the Waikīkī Watershed. Prior to Western contact, Native Hawaiians managed land and natural resources through the ahupua’a system, whereby political and economically self-sufficient units aligned with watershed boundaries.

**CURRENT WATER USE & RIGHTS:** The primary uses for water in the watershed are residential and commercial, as there is no agricultural production in the watershed aside from a single orchid farm. The Honolulu Board of Water Supply is the only entity in this watershed that draws water from the aquifer. There are no surface water reservoirs, and although the University of Hawai'i and the county golf course have conducted studies on using surface water for irrigation, but to date the only use of surface water are residential rain barrels.

**WATERSHED ISSUES:** The 65 stakeholder organizations in the AWWC identified six priority issues that require holistic and integrated solutions.



1. **Stormwater Flood Risk:** The risk from rain-induced flooding to assets and people in the watershed is significant. The US Army Corps of Engineers estimated that a 1% chance flood would affect 3,000 properties in the watershed and cause \$1.14 billion in structural damages, not including other types of damages or indirect long-term economic loss. The stormwater infrastructure system consists of streams (natural and channelized) that transport stormwater runoff downstream, exacerbating flash flood risk.
2. **Storm Surge and Sea Level Rise:** Storm surge already poses a significant threat to the assets and residents in Waikiki and the neighborhoods surrounding the Ala Wai canal. Climate change has led to rising sea levels, as well as increased frequency and severity of storms (and droughts). This leads to a significant hazard from storm surges,



map: 1% ACE flood map by USACE

which may occur at the same time as rain-induced downstream flooding. At the same time, much of the infrastructure along the shoreline is high-value, making it unlikely that these assets will be abandoned or relocated in response to this growing hazard.

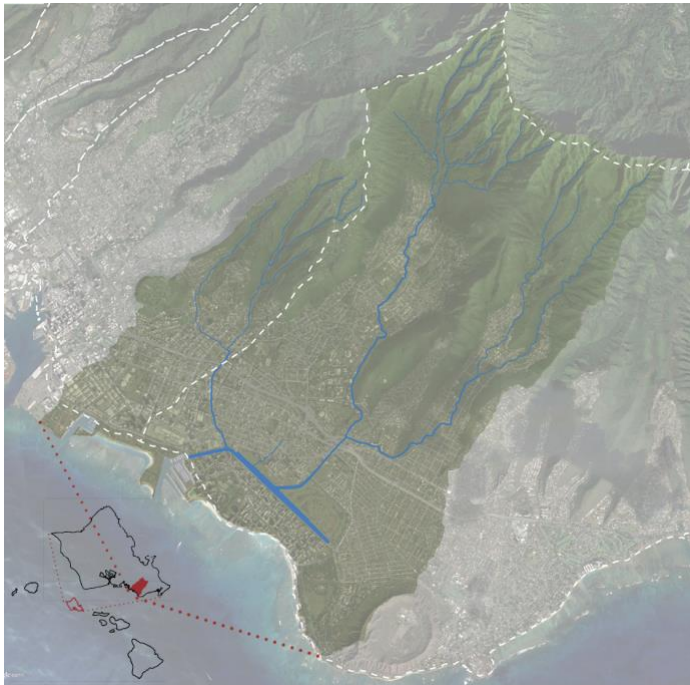
3. **Hurricane, Climate & Disaster Resilience:** The infrastructure and people in the watershed are highly vulnerable to hurricane damage and climate change impacts (increased frequency and intensity of storms and droughts). A category 4 hurricane making landfall in Waikīkī is estimated to cause \$30 billion in direct economic losses. Stakeholders have identified the need for holistic planning to reduce vulnerabilities to hurricanes and climate impacts in the watershed and allow communities to recover more quickly.
4. **Improvements of Recreation Spaces:** There are many public spaces in the watershed that are heavily used for recreation, including paddling in the Ala Wai canal (in spite of its pollution), hiking in the Mānoa, Pālolo, and Makiki trail systems, and public parks such as Ala Moana Beach Park, Kapiʻolani Park, the Ala Wai promenade, and many neighborhood parks. However, many recreational spaces, most notably the Ala Wai canal and promenade, are not safe and appealing spaces. Moreover, the system of streams has a high recreation potential, but access is extremely limited, and current transportation and recreation options do not connect to the streams. Stakeholders identified the need to align the green infrastructure system, ecological corridors, and recreation spaces to take advantage of the beautiful natural features, public parks, and demand for recreation in the watershed, and redevelop these areas to support multi-purpose uses.
5. **Uplift & Restore Cultural Sites & Practices:** Urbanization and development have dramatically altered the landscape of the Ala Wai watershed since the 1920s, making it more difficult to learn about and access the history and cultural heritage of the landscape. Stakeholders identified the need to uplift, uncover, and connect residents and visitors to the stories, history, and use of these places
6. **Ecological Restoration & Protection:** The ecosystems of the watershed (forested areas, streams, beaches, nearshore marine environment, and to some extent backyards and landscaped areas) provide important ecosystem functions, including hydrological benefits (filtering rainwater, allowing it to recharge the aquifer, and slowing down the runoff to reduce flash flood hazards), providing habitat to native species who have cultural value and provide key predator-prey functions in Hawaiʻi's ecosystems, and recreational and aesthetic benefits to residents and visitors alike, such as the heavily utilized trail system in Mānoa and Makiki, as well as Waikīkī Beach. Urbanization, channelization of streams, and invasive species have degraded the ecosystems to the point where their ability to deliver these ecosystem services is impaired.

## D.2.2.4. Technical Proposal and Evaluation Criteria – Project Location:

**JURISDICTION:** State of Hawai'i, City & County of Honolulu

**NEAREST URBAN AREA:** the Ala Wai Watershed is located within the Honolulu's Primary Urban Center (PUC) and includes Waikīkī, the economic hub of the state's tourism industry. Even with 40% of the watershed in conservation districts, the watershed is the most densely populated watershed in Hawai'i. The middle and lower watershed, which comprise 60% of the watershed, are heavily urbanized with high density single family housing, condominiums, hotel, businesses, and educational facilities.

**USGS HYDROLOGICAL UNIT CODE:** 3049



Map 1: Ala Wai Watershed



Ala Wai Watershed in relation to the State of Hawai'i



Map 2: the island of O'ahu's 8 geographic districts, including Honolulu's Primary Urban Center



## D.2.2.4. Technical Proposal and Evaluation Criteria – Technical Project Description:

**APPLICANT CATEGORY:** Existing Watershed Group

### **Ala Wai Watershed Collaboration (AWWC)**

The Ala Wai Watershed Collaboration (AWWC) is a diverse network of stakeholders that formed in 2015 to reduce risks of catastrophic natural disasters and climate change impacts and improve community livability and opportunities for cultural connections throughout the watershed. Building on several decades of watershed management and community efforts, the AWWC has developed an ambitious and collaborative bottom-up vision for resilience and quality of life throughout the watershed. This vision is grounded in the legacy of Native Hawaiian natural resource management through the *ahupua'a* system, traditional divisions of land that provided a foundation for stewardship, governance, and sense of place. Through its collaborative process convened by Hawai'i Green Growth, the AWWC has grown into a broad and inclusive platform for collaborative dialogue in this watershed.

Coordinated by Hawai'i Green Growth, the AWWC is an example of a comprehensive *mauka to makai* (ridge-to-reef) approach to address all of Hawai'i's sustainability goals, including the Aloha+ Challenge as a localized framework of implementing the global United Nations Sustainable Development Goals and Paris Climate Agreement. The AWWC meets quarterly and has developed a shared vision statement and a strategic plan. Its members are organized in three Working Groups, which are led by two Co-Chairs each:

1. The **Policy, Finance, and Infrastructure Working Group** works on identifying policy options to enable (green) infrastructure solutions, supported by innovative financing models, including public-private partnerships.
2. The **Environmental Quality, Research, and Science Working Group** works to advance existing watershed-wide ecosystem restoration efforts, with a focus on improving water quality in streams and the Ala Wai canal itself.
3. The **Culture, Education, and Community Engagement Working Group** grounds the AWWC's work in culture and place and coordinates initiatives on storytelling, community engagement, and place-based learning to connect students and community members to the *'āina* (land) and *ahupua'a* (watershed).

**ELIGIBILITY OF APPLICANT:** The Ala Wai Watershed Collaboration (AWWC) is a grassroots group of 128 individuals representing 65 different organizations who are stakeholders in the Ala Wai Watershed, including major landowners, tourism industry, schools, universities, community restoration and education non-profits, Native Hawaiian cultural practitioners and organizations, utility companies, and city and state government branches whose jurisdictions affect the watershed. Collectively, the AWWC members both affect and are affected by the quality and

quantity of water in the Ala Wai Watershed and are capable of promoting the sustainable use of water resources. The AWWC sets priorities and makes decisions on a consensus basis, and does not engage in lobbying activities. Hawai'i Green Growth, which is fiscally sponsored by the O'ahu Economic Development Board, a 501(c)(3), has been convening the AWWC since 2016. This includes organizing quarterly and Working Group meetings, providing strategic guidance, hosting the AWWC website, and sharing information to coordinate ongoing and proposed projects and initiatives.

**GOALS:** The AWWC's mission statement is: "The Ala Wai Watershed Collaboration is a network of government, business, and community partners committed to a more resilient and prosperous Ala Wai Watershed."

**APPROACH:** Task B – Watershed Restoration Planning

#### **Developing a Holistic Watershed Management Plan:**

With support from the WaterSMART Cooperative Watershed Management Program, the AWWC would develop a watershed restoration plan, the "Holistic Watershed Management Plan." As a watershed group, the AWWC has built trust among a diverse network of partners, provided a consistent framework and structure through the Working Groups that resulted in a shared vision for the watershed and a strategic plan for how to implement this vision. The AWWC has identified the priority watershed issues, and several partners have proposed project ideas. The next step needed to advance the AWWC's shared vision and implement projects is a clearly articulated plan. This Holistic Watershed Management Plan will advance the AWWC work in three significant ways:

1. **Technical and Financial Analysis:** The Plan will quantify and clearly articulate the impact, implementation timeline, and cost estimate associated with watershed management concepts and projects that have been proposed by AWWC members, as well as recommend additional measures.
2. **Community-Driven Planning:** The Plan will be developed through a multi-stakeholder process. This process will serve as an important catalyst for constructive conversations about tradeoffs such as safety, recreation access, habitat and biodiversity restoration, cost, education of students, visitors, and residents, and jurisdictional responsibilities.
3. **Holistic Framework to Integrate Multiple Priorities:** The Plan will provide a holistic framework where the six priority watershed issues can be addressed through integrated projects that address multiple priorities and

Without a Holistic Watershed Management Plan that provides the technical information, inclusive process, and holistic framework, the AWWC cannot take the next step to advance its vision for a more resilient and prosperous watershed. In the absence of such a plan, AWWC members have observed that even good project proposals and designs have difficulty moving beyond the pilot stage, because individual projects lack the capacity to conduct the necessary technical analysis, stakeholder convening, and holistic framework to place a single project in the context of the broader watershed issues and priorities.

## The Pathway for Implementing the Holistic Watershed Management Plan Long-Term: The Community Investment Vehicle (CIVic)

The AWWC recognized that while a diverse watershed group is ideally suited to develop a vision and develop a holistic plan, an institutional structure will be needed once the Holistic Watershed Management Plan is completed to execute a large number of small projects across the watershed, to finance maintenance, and to create a structured pathway for shared decision-making among business, government, and community stakeholders: A Community Investment Vehicle (CIVic). The CIVic would:

- 1) serve as a non-profit with a balanced board of government, business, and community stakeholders;
- 2) plan, finance, and maintain diverse and integrated watershed projects and programs in the Ala Wai Watershed District, and
- 3) work across jurisdictions to ensure continuity, capture efficiencies, and create innovative financing models in partnership with the private sector, including green infrastructure and financing, and capturing insurance premium savings from risk reductions.

Over the course of 2018, the AWWC conducted extensive stakeholder consultations and a legal and financial analysis of options establish the CIVic. Through this process, the AWWC recommended creating a Special Improvement District through City Legislation, which would establish the CIVic as a 501(c)(3) non-profit that manages the district. The four existing Special Improvement Districts in the county have a track record of success, in large part because they allow for balanced representation of government, business, and community stakeholders in its Board of Directors and can plan, execute, finance, and maintain projects across jurisdictions.

The Special Improvement District and CIVic is on track to being established in the first half of 2020, and the AWWC will continue to convene and serve as a Stakeholder Advisory Group to the CIVic Board of Directors. As described in the scope for the Holistic Watershed Management Plan below, the Plan will be developed and articulated in a format that can serve as the roadmap and budget for the CIVic in its first several years of operation.



Maintenance  
across jurisdictions



Green Infrastructure Projects  
across the landscape



Shared Decision-making  
across business, government, and community

**DISCUSSION OF ACTIVITIES**

**Scope of Services and Milestones:**

The Ala Wai Watershed Collaboration (AWWC) has engaged over 65 stakeholders in qualitatively articulating the key watershed issues that the Holistic Watershed Management Plan should include, as well as a preliminary list of projects, plans, programs, and activities proposed by its members. The AWWC has also compiled a literature review of existing landscape analysis studies and project proposal studies that have been conducted in the Ala Wai Watershed to date. As the convener of the AWWC, Hawai'i Green Growth will be responsible for convening stakeholders in the process of developing the Holistic Watershed Management Plan. The contractor selected for this scope will be responsible for engaging these stakeholders to gather all relevant information for to (1) quantify impacts of each proposed project on six priorities watershed issues (2) conduct financial analysis of the estimated cost of each proposed project (3) estimate likely implementation timeline & plan for each proposed project; and, making reasonable assumptions where needed. The contractor will (4) compile the findings in a final report, the watershed restoration plan (“Holistic Watershed Management Plan”), which shall also serve as a budget and implementation roadmap for the Community Investment Vehicle (CIVic).

<p><b>A: Project Management &amp; Stakeholder Convening:</b></p> <ol style="list-style-type: none"> <li>1) Project Management &amp; Reporting</li> <li>2) Inclusive multi-stakeholder process through the AWWC</li> <li>3) Coordination &amp; Alignment with county and state-wide plans</li> <li>4) Public outreach &amp; community engagement</li> </ol>	<p><b>B: Technical Analysis (Contractor):</b></p> <ol style="list-style-type: none"> <li>1) Quantify impacts of each proposed project on six priorities watershed issues</li> <li>2) Conduct financial analysis of the estimated cost of each proposed project</li> <li>3) Estimate likely implementation timeline &amp; plan for each proposed project</li> <li>4) Write watershed restoration plan (“Holistic Watershed Management Plan”)</li> </ol>
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**Scope of Services A: Project Management & Stakeholder Convening**

**Cost:** \$80,000

**Summary:**

Convene and coordinate a robust, structured and inclusive multi-stakeholder process and dialogue to ensure the Holistic Watershed Management Plan priorities enjoy broad ownership and buy-in from diverse stakeholders. Provide information and pathways for public participation. Coordinate alignment with existing county and state plans, and provide grant management oversight.



The Holistic Watershed Management Plan will align sector-specific planning and projects, where possible, to help advance the watershed vision of the Ala Wai Watershed Collaboration and inform elected officials and government agencies of the landscape-level benefits of specific projects. The recommendations and vision of the Holistic Watershed Management Plan will also advance the implementation of Hawai'i's 2030 statewide sustainability goals, the Aloha+ Challenge, in the geographic are of the Ala Wai Watershed. The Recommendations and vision will address how all six Aloha+ Goals will be advanced, with particular emphasis on the Smart Sustainable Communities Goal, which includes disaster resilience, open and public spaces, and connection to place, as well as the Natural Resource Management Goal, which includes freshwater capacity, watershed forests, and invasive species.



### Scope of Services:

- 1) Manage the grant, including soliciting proposals for the technical analysis scope and complying with reporting requirements, such as quarterly Financial Reports, quarterly Interim Performance Reports, the Final Performance Report, and the Sufficiency Report to determine second year funding;
- 2) Convene and coordinate a robust, structured and inclusive **multi-stakeholder process** and dialogue including but not limited to the 128 individuals representing 65 organizations who comprise the AWWC;
- 3) Coordinate and align the Holistic Watershed Management Plann process with existing state and county plans, policies, and goals (see below)
- 4) Share information with the public and **provide pathways for public participation.**

### Examples of Existing Plans, Policies, and Goals:

- The Honolulu Department of Facilities Maintenance and the Hawai'i Community Foundation's process to establish an island-wide stormwater utility and fee, as authorized by HRS 42-1.5 in 2015 and additional watershed improvement fees that the CIVic may choose to levy in the Ala Wai Watershed Special Improvement District to provide supplementary services to address the specific challenges and priorities of this watershed;
- The Honolulu Office of Climate Change, Sustainability, and Resiliency's O'ahu Resilience Strategy actions, specifically Resilience Actions 31 and 34;
- The Mayor of Honolulu's goal to plant 100,000 trees by 2025 and increase urban canopy to 35% by 2035;

- The Aloha+ Challenge statewide climate and sustainability goals, launched in 2014 and reaffirmed in 2019 by county, state, federal, and OHA partners;
- Existing plans, including the Department of Planning and Permitting’s Primary Urban Center Development Plan, the Department of Emergency Management’s Multi-Hazard Pre-Disaster Mitigation Plan, the Board of Water Supply’s Primary Urban Center Watershed Management Plan, and the Honolulu Department of Facilities Maintenance Stormwater Management Program Plan.

**Timeline: AWWC & Working Group Convening Schedule**

Third Quarter 2020	July 2020	AWWC Meeting
	September 2020	Working Group Meetings
Fourth Quarter 2020	October 2020	AWWC Meeting
	December 2020	Working Group Meetings
First Quarter 2021	January 2021	AWWC Meeting
	March 2021	Working Group Meetings
Second Quarter 2021	April 2021	AWWC Meeting
	June 2021	Working Group Meetings
Third Quarter 2021	July 2021	AWWC Meeting
	September	Working Group Meetings
Fourth Quarter 2021	October 2021	AWWC Meeting
	December 2021	Working Group Meetings
First Quarter 2022	January 2022	AWWC Meeting
	March 2022	Working Group Meetings
Second Quarter 2022	April 2022	AWWC Meeting
	May 2022	Working Group Meetings
	June 2022	AWWC Meeting

## Scope of Services B: Technical Analysis

**Cost:** \$106,000 (\$13,000 through the WaterSMART program, \$93,000 non-federal cost share)

### Summary:

Develop a Holistic Watershed Management Plan for the Ala Wai Watershed, including a financial analysis, project implementation schedule, and qualitative and quantitative impact for priority tasks and functions that the CIVic would provide during its first three years of operation. The Ala Wai Watershed Collaboration (AWWC) has engaged relevant stakeholders and developed a priority list of actions, but a quantification and costing at the Rough Order of Magnitude (ROM) level is needed to translate these priorities into an actionable watershed restoration plan.

### Scope of Services:

1. Conduct a **quantitative analysis of impacts** of each of the identified projects, plans, programs, and activities, as appropriate, including hydrological impact, water quality impact on the Ala Wai Canal, its tributaries, and the nearshore marine environment, existing government plans and statewide priorities that will be advanced by the implementation of these actions, including alignment with the Aloha+ Challenge statewide sustainability goals.
2. Conduct **financial analysis** of the costs of identified projects, plans, programs, and activities at the Rough Order of Magnitude (ROM) level.
3. Conduct appropriate **project implementation analysis** to determine an estimated implementation schedule of the identified projects, plans, programs, and activities as appropriate;
4. Compile the findings in a **final report**, the watershed restoration plan (“Holistic Watershed Management Plan”)
5. **Engage relevant stakeholders** in the Ala Wai watershed in partnership with Hawai'i Green Growth and the Ala Wai Watershed Collaboration network partners and assist Hawai'i Green Growth and the Ala Wai Watershed Collaboration network partners in communicating the draft and final drafts of the Holistic Watershed Management Plan

### Deliverables Year 1 (FY2019 Funding Period):

1. Conduct a qualitative impact analysis, financial costing analysis (at the Rough Order of Magnitude level), and implementation analysis of projects identified by stakeholders, including but not limited to the projects listed below;
2. Conduct in-depth stakeholder interviews and participate in AWWC quarterly meetings and AWWC Working Group Meetings;
3. Provide an interim written report that includes the cost, impact, and schedule of each of the projects, plans, programs, and activities analyzed, b) describes the stakeholder engagement process, and c) explains reasonable assumptions made.
4. Compile the draft interim report in a format that informs the Community Investment Vehicle (CIVic)'s implementation activities and operational budget for the first year of its operation, as specified in its bylaws.

5. Present interim findings and the draft report at the quarterly AWWC meetings and AWWC Working Group meetings.

**Deliverables Year 1 (FY2020 Funding Period):**

6. Refine the analysis of the draft report into a impact analysis with quantitative metrics, specific costing and implementation analysis of priority projects identified by stakeholders in the first year;
7. Recommend additional projects to be included in the Holistic Watershed Management Plan, in consultation with stakeholders;
8. Conduct in-depth stakeholder interviews and participate in AWWC quarterly meetings and AWWC Working Group Meetings;
9. Provide a final written report that includes a) the specific costs, quantified impact, and likely schedule of each of the projects, plans, programs, and activities analyzed, b) describes the stakeholder engagement process, and c) explains reasonable assumptions made.
10. Compile the final report in a format that informs the Community Investment Vehicle (CIVic)'s implementation activities and operational budget for the second and third year of operation, as specified in its bylaws.
11. Present interim findings and the final report at the quarterly AWWC meetings and AWWC Working Group meetings.

**Timeline:**

	<b>Milestone</b>	<b>Interim Milestone</b>
Third Quarter 2020	July 2020 AWWC Meeting	Present Scope to AWWC and preview the timeline for the technical analysis in partnership with Hawai'i Green Growth
	September 2020 Working Group Meetings	Develop priority list of projects to be analyzed
Fourth Quarter 2020	October 2020 AWWC Meeting	Present initial findings and solicit input
	December 2020 Working Group Meetings	Refine analysis and estimates to conform with implementation plan and budget of the CIVic
First Quarter 2021	January 2021 AWWC Meeting	Present the first draft plan to the AWWC and the implementation plan and budget to the CIVic Board (Deliverable 4)
	March 2021 Working Group Meetings	finalize draft in collaboration with stakeholders
Second Quarter 2021	April 2021 AWWC Meeting	Present preliminary Year One Draft
	June 2021 Working Group Meetings	determine priority projects for a refined analysis



Third Quarter 2021	July 2021 AWWC Meeting	present priority project list and solicit input
	September AWWC Working Group Meetings	solicit and incorporate input from WG and interviews
Fourth Quarter 2021	October 2021 AWWC Meeting	present interim findings to AWWC
	December 2021 Working Group Meetings	solicit and incorporate input from WG and interviews
First Quarter 2022	January 2022 AWWC Meeting	present interim findings to AWWC
	March 2022 Working Group Meetings	solicit and incorporate input from WG and interviews
Second Quarter 2022	April 2022 AWWC Meeting	present draft final plan
	May 2022 Working Group Meetings	incorporate stakeholder input into final plan
	June 2022 AWWC Meeting	present final plan to AWWC and CIVic Board

**List of Potential Projects, Initiatives, and Programs identified by AWWC network:**

<b>Project / Activity/</b>	<b>Key Partner</b>	<b>Description</b>	<b>Reference in CIVic Bylaws</b>
DLNR DOFAW Kōnāhuanui Fencing Project	DLNR DOFAW, KMWP	The DLNR DOFAW has identified Kōnāhuanui Summit as a priority area for fencing and ungulate removal in this watershed to restore and protect native forest around the summit. This area experiences the highest annual rainfall in the watershed and would serve as the pilot project for forest-based green infrastructure.	Activity 6.B-6 and 6.B-7
Makiki Lo'i Restoraion	Halau Ku Mana	Cultural practitioners have indicated that there are up to 100 loi sites in the mauka portion of Makiki stream that could be restored with a combination of community volunteers and contracted professionals.	Activities 6.B-6, 6.B-6, 6.B-7
Establish Public Private Partnerships	Baker McKenzie	Once a stormwater utility with stormwater fees and potentially watershed improvement fees with corresponding payment histories have been established, private investment in green infrastructure can generate revenue (green finance). The CIVic should be ready to issue P3 RFPs after its 3rd year of operation.	Activity 6.A-3
Support from CIVic Staff & Office	CIVic Board	including the CIVic's Director, administrative assistant, communication director, and a communications budget to distribute stories and	Activity 6.A-4 and 6.A-2

Operating Costs		mo'olelo of the watershed in multimedia ways and renting office space.	
Watershed Sensor & Data Platform	SMART Ala Wai, PACIOSS, Nā Wai 'Ekolu	Several partners in the watershed including schools, University of Hawai'i SMART Ala Wai, and USGS are monitoring watershed data such as stream water levels and flow, turbidity, pH, temperature, dissolved oxygen, pollutants, sediment, and biodiversity indicators. Methods of data collection include manual sampling, deploying dataloggers and periodically downloading the data, as well as sensors that transmit data in real time. These monitoring efforts are currently financed through volunteer work or short-term grants, which make it difficult to gather high quality data consistently and over long periods of time.	Activities 6.B-1, 6.B-2, 6.B-5, 6.B-6, 6.B-7, 6.C
Green Infrastructure Projects	DFM, REDI, DPR, DOE	The Department of Facilities Maintenance has identified several potential sites for green infrastructure, and many public and private school campuses in the watershed have preliminary plans for green infrastructure on their campuses, but have had difficulty identifying an entity to maintain them while school is out of session.	Activity 6.B-5
Old Stadium Park Redevelopment	Blue Zones Project, DPR	This project is a case study in integrating community priorities of recreation, watershed benefits, and community-driven process for green infrastructure. The Blue Zones Project, the AWWC, UH, and Arizona State University have worked on a redevelopment plan for Old Stadium Park, which resulted in a preliminary design concept, including a list of maintenance activities required. City council has approved a \$250,000 line item in the City's budget to conduct a professional master plan for this park, which would advance that concept to a proposal.	Activity 6.B-5
Mānoa Cliffs Restoration Project	UH, MCRP Volunteers	The Mānoa Cliffs Restoration Project has been restoring native forest on an 8-acre parcel in the highest rainfall area in the watershed. They propose to expand their efforts.	Activity 6.B-6 and 6.B-7
Mo'olelo Project	Mānoa Heritage Center	<i>Mo'olelo</i> (stories) are the Hawaiian legends of place and an important way for residents, students, and visitors to connect with the <i>'āina</i>	Activity 6.B

		(land) and with each other. Several AWWC partners including Kamehameha Schools and the Mānoa Heritage Center are repositories of these mo'olelo, but additional innovative communication and engagement pathways are needed to make these stories accessible to the public and integrate them into place-based curricula.	
Albizia Prevention & Removal	OISC, KWMP	The O'ahu Invasives Species Council and the Ko'olau Mountains Watershed Partnership identified albizia trees ( <i>Falcataria moluccana</i> ) as a priority invasive species to contain, as it causes erosion, debris, and surface runoff that reduces aquifer recharge. They recommend containment measures to prevent the spread of albizia stands to upper elevations, and subsequent removal of albizia trees from the residential-forest boundary.	Activity 6.B-6 and 6.B-7
Myconia Eradication	OISC, KWMP	Miconia trees ( <i>Miconia calvescens</i> ) are the priority target for the O'ahu Invasives Species Council, as they provide a significant threat to O'ahu's native forest ecosystems, but have not yet widely dispersed. The Ala Wai watershed forest area contains approximately 30% of the islands miconia.	Activity 6.B-6 and 6.B-7
Trees for Kaimukī	Envision Kaimukī, Trees for Honolulu's Future	The non-profit Envision Kaimukī has organized the community around increasing the number of trees and green infrastructure in the Kaimukī neighborhood in partnership with Trees for Honolulu's Future to filter urban stormwater runoff, improve walkability, and provide urban habitat.	Activity 6.B-5
Floating Debris Catchment Technology	UH SeaGrant; DLNR DOBOR	Floating trash and debris is a major concern at the mouth of the Ala Wai canal, affecting the Boat Harbor, paddlers, and tourists. The proposal is to add a surface catchment boom, and the upkeep of the proposed SeaBin for research purposes.	Activities 6.B-2, 6.B-3, 6.B-4, 6.B-6

## D.2.2.4. Technical Proposal and Evaluation Criteria – Evaluation Criteria:

### *Evaluation Criterion A— Watershed Group Diversity and Geographic Scope*

The Ala Wai Watershed Collaboration is an existing grassroots watershed group that currently includes 128 individuals representing 65 organizations. These organizations are significantly affected by the water quality and quantity in the watershed, and are capable of promoting sustainable use of water through integrated initiatives that consider water as resource for potable water and recreation, as well as a hazard that can cause flooding and health risks if polluted and unmanaged.

#### **Sub-criterion No. A1. Watershed Group Diversity**

**AFFECTED STAKEHOLDERS:** The watershed is home to 200,000 residents as well as 80,000 visitors in Waikīkī at any given day. As illustrated in the table below, the diversity of AWWC membership reflects affected stakeholders from each of the eight key stakeholder types, and a broad geographic extent from ridge to reef:

- 1) Landowners (see map in subcriterion A2 for an overview of major landowners)
- 2) Bueinsses with significant assets in the watershed, including the water and electric utility as well as the visitor industry
- 3) Schools and institutions of higher education with campuses adjacent to the stream and place-based educational and research programs
- 4) Native Hawaiian cultural practitioners and institutions who perpetuate cultural practice
- 5) Schools and Universities with watershed research programs
- 6) Non-profits with community, cultural, or restoration focus with programs and projects in the watershed
- 7) The tourism industry (Waikīkī generates 7% of Hawai‘i’s statewide GDP, 7% of civilian jobs, and 9% of state and county tax revenue).
- 8) State and County departments whose responsibilities overlap with the priority watershed issues identified, and whose partnership is integral to implementing the AWWC’s vision as expressed in the Holistic Watershed Management Plan.

Note: there is no agriculture in this watershed, aside from a single orchid farm in Pālolo Valley.

The AWWC convenes through an inclusive process that works with all stakeholder who are affected by or can help implement the vision for a more resilient and prosperous Ala Wai Watershed, and therefore it continues to grow with each quarterly convening.



**LIST OF WATERSHED GROUP MEMBERS**

	<b>AWWC Member</b>	<b>Sector</b>	<b>Geographic Extent of Work</b>
1	Mānoa Heritage Center	non-profit (education, culture)	ridge-to-reef
2	Hawai'i Nature Center	non-profit (education)	upper watershed (forest)
3	Ko'olau Montains Watershed Partnership	non-profit (restoration)	upper watershed (forest)
4	Ala Wai Watershed Association	non-profit (restoration)	streams
5	Outdoor Circle	non-profit (environmental)	urban area & forest
6	Trees to Seas	non-profit (restoration)	urban area, streams, coastal
7	Waikīkī Aquarium	non-profit (education, research)	coastal
8	AIA Honolulu Chapter	non-profit (design)	urban area
9	Ala Wai Centennial	non-profit (planning)	ridge-to-reef
10	Be Ready Mānoa	non-profit (disaster resilience)	urban area
11	Education Incubator	non-profit (education)	ridge-to-reef
12	Lyon Arboretum	non-profit (education, restoration)	upper watershed (forest)
13	Smart Trees Pacific	non-profit (restoration)	urban area
14	Polynesian Voyaging Society	non-profit (education, culture)	marine, ridge-to-reef
15	Sustainable Coastlines	non-profit (community)	coastal
16	Waterkeeper O'ahu	non-profit (restoration)	coastal
17	Board of Water Supply	government (City & County), major landowner	upper watershed (forest)
18	Dept. Of Design & Construction	government (City & County)	urban area
19	Dept. of Enterprise Services	government (City & County)	urban area
20	Dept. of Facilities Maintenance	government (City & County)	urban area
21	Dept. of Planning & Permitting	government (City & County)	urban area
22	Dept. of Parks & Recreation	government (City & County)	urban area
23	Office of Climate Change, Sustainability, and Resiliency	government (City & County)	ridge-to-reef
24	Dept. of Land and Natural Resources, Division of Forestry and Wildlife	government (State), major landowner	upper watershed (forest)
25	Dept. of Land and Natural Resources, Division of Boating and Ocean Recreation	government (State)	coastal, marine
26	Dept. of Land and Natural Resources, Engineering Division	government (State)	ridge-to-reef
27	Dept. of Health, Environmental Quality Branch	government (State)	ridge-to-reef

28	Dept. of Education	government (State), major landowner	urban area, coastal
29	Office of the Governor	government (State)	ridge-to-reef
30	Hawai'i Tourism Authority	government (State)	ridge-to-reef
31	United States Army Corps of Engineers, Honolulu District	government (Federal)	coastal, urban, upper watershed (forest)
32	National Fish & Wildlife Foundation	government (Federal)	streams, upper watershed (forest)
33	First Hawaiian Bank	business (bank)	urban area
34	Hawaiian Electric Company	business (utility)	urban area
35	Kamehameha Schools	business (land trust, school)	urban area, upper watershed (forest)
36	Kyo Ya Hotels & Resorts	business (tourism)	coastal
37	Native Hawaiian Hospitality Association	business (tourism)	urban area, coastal
38	O'ahu Economic Development Board	business development organization	urban area
39	PBR Hawai'i	business (planning)	urban area
40	Pineapple Tweed	business (marketing)	urban area
41	Roth Ecological Design	business (planning)	urban area
42	Royal Hawaiian Shopping Center	business (tourism)	urban area, coastal
43	SMS Research	business (social impact research)	ridge-to-reef
44	Stantec	business (planning, design)	urban area
45	The MacNaughton Group	business (real estate)	urban area
46	Townscape Inc.	business (planning)	urban area
47	Waikiki Beach Special Improvement District	business (tourism)	coastal
48	Kapi'olani Community College	academia (University of Hawai'i)	urban area
49	'Iolani School	academia (school)	urban area, coastal, stream
50	Kaimuki High School	academia (school)	urban area, stream
51	SEEQS	academia (school)	urban area, stream
52	Hālau Kū Māna	academia (school, cultural)	urban area, stream, upper watershed (forest)
53	Campus Planning Dept.	academia (University of Hawai'i)	ridge-to-reef
54	Dept. of Urban and Regional Planning	academia (University of Hawai'i)	ridge-to-reef
55	Hawaiian Studies School	academia (University of Hawai'i)	ridge-to-reef
56	Sea Grant Program	academia (University of Hawai'i)	coastal

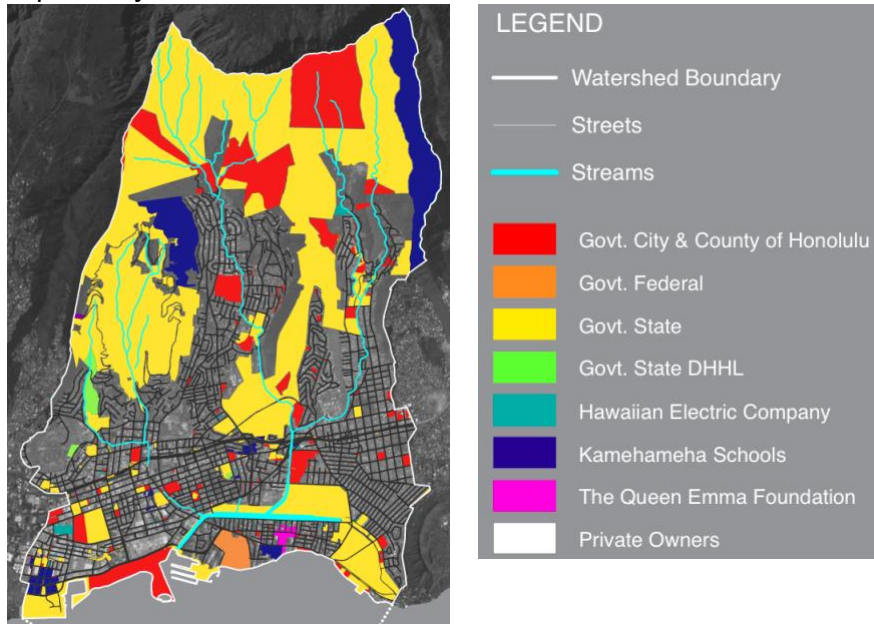
57	SMART Ala Wai	academia (University of Hawai'i)	streams
58	Sustainability Office	academia (University of Hawai'i)	ridge-to-reef
59	Ka Papa Lo'i O Kānewai	academia (University of Hawai'i)	streams
60	Hawai'i Community Foundation	philanthropy (community)	ridge-to-reef
61	Hawai'i Exemplary State Foundation	philanthropy (restoration)	streams upper watershed (forest)
62	Surfrider Foundation	philanthropy (restoration)	urban area, coastal
63	Arizona State University	non-local	urban area design pracicum
64	Baker McKenzie	non-local	legal & policy analysis
65	USACE Institute for Water Resources	non-local	technical expertise

**Sub-criterion No. A2. Geographic Scope**

The size of the Ala Wai Watershed (USGS HUC: 3049) is approximately 19 square miles (12,064 acres). While all stakeholders understand the importance of integrating activities ridge-to-reef across the entire watershed, most stakeholders have assets or programs specific to one or more of the five geographic areas of the watershed:

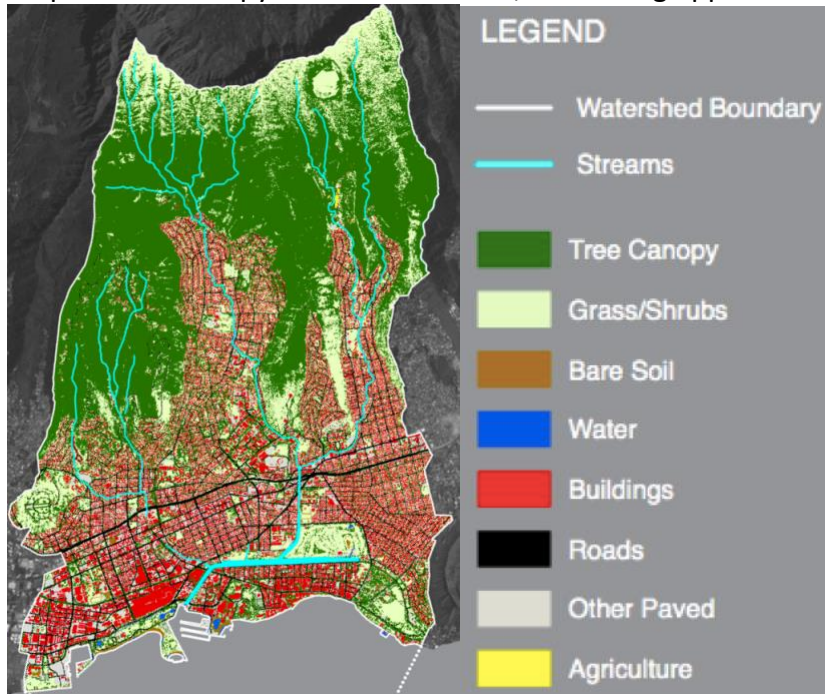
- 1) Upper watershed (forest)
- 2) Streams
- 3) Urban area
- 4) Coastal
- 5) Marine

Map of Major Landowners in the Ala Wai Watershed



Note: City & County of Honolulu land is usually owned by the Department of Parks and Recreation if located in the urban area, and the Board of Water Supply if located in the forested upper watershed.

Map of Tree Canopy and Surface Cover, illustrating upper watershed (forest) and urban area:



### ***Evaluation Criterion B — Addressing Critical Watershed Needs***

#### **Sub-criterion No. B1. Critical Watershed Needs or Issues**

The six critical watershed needs and issues are described in detail in the Technical Proposal (see page 4), in the Background Data, section under “Watershed Issues.” They were identified by the AWWC through an inclusive stakeholder process convened and led by Hawai’i Green Growth. Addressing each of the priority issues in an integrated and holistic way will require the development of the Holistic Watershed Management Plan.

Six Critical Watershed Needs as Identified by the AWWC process:

1. Stormwater Flood Risk
2. Storm Surge and Sea Level Rise
3. Hurricane, Climate & Disaster Resilience
4. Improvements of Recreation Spaces
5. Uplift & Restore Cultural Sites & Practices
6. Ecological Restoration & Protection

#### **Sub-criterion No. B2. Developing Strategies to Address Critical Watershed Needs or Issues**

The AWWC proposes to prepare a watershed restoration plan (Task B Watershed Restoration Planning) called the “Holistic Watershed Management Plan” to positively contribute to addressing the six priority issues listed above.



**PREVIOUS EFFORTS:** the AWWC, convened by Hawai'i Green Growth, has compiled a list of proposed projects and initiatives that the watershed restoration plan (Holistic Watershed Management Plan) will expand upon (see page 15 "List of Potential Projects, Initiatives, and Programs identified by AWWC network"). The AWWC has also compiled a literature review of relevant goals, plans, and initiatives at the state and county level that are relevant to successful watershed management planning in the Ala Wai Watershed (see page 11 "Examples of Existing Plans, Policies, and Goals").

**PROCESS OF DEVELOPING A WATERSHED RESTORATION PLAN:** The AWWC prepared a detailed scope of work to develop the Holistic Watershed Management Plan through project management and stakeholder convening (Scope A, see page 10) and technical analysis (Scope B, see page 13), including stakeholder interviews and presentations, public engagement, as well as timelines and deliverables. The technical analysis will provide a list of priority solutions to be considered for implementation and include science-based quantification of impacts (flood mitigation reduction, aquifer recharge, water quality improvements including TMDL thresholds, habitat improvements, and improvements of recreation access and use). The contractor conducting the technical analysis will gather information through in-depth interviews, site visits (no field work is anticipated), and reviews of existing studies and plans of the Ala Wai Watershed, as well as comparable studies from other watersheds as needed.

**OPPORTUNITIES TO RESOLVE CONFLICT:** Hawai'i Green Growth has demonstrated over the past 5 years that it can build trust among a diverse group of stakeholders from different industries and working in different areas of the watershed. The AWWC quarterly meetings and Working Groups provide a space for candid dialogue about tradeoffs, and the Holistic Watershed Management Plan process will bring additional specificity to these conversations. The process of analyzing impacts, costs, and timelines for each proposed project will allow for all stakeholders to voice their priorities and be included in a plan that addresses the six watershed priorities holistically. This process will limit conflict and build a structure for conflict to be resolved in a way that ensures respectful conduct, careful consideration, and minimization of misunderstandings and misinformation.

**ALIGNMENT WITH IMPLEMENTATION MECHANISM:** To ensure that the Holistic Watershed Management Plan is useful to decision-makers and articulated in an actionable format, the scope of services specifically require that the final report be aligned with the bylaws of the Community Investment Vehicle (CIVic), which is in the process of being established as the managing entity for the Ala Wai Watershed Special Improvement District (see page 9). To ensure alignment, the list of proposed projects (see page 15) as part of the Scope B Technical Analysis specifically references which passages of the CIVic bylaws would allow the CIVic to fundraise for and execute the list of projects analyzed in the Holistic Watershed Management Plan. This way the Holistic Watershed Management Plan can serve as a roadmap of implementation for the CIVic Board of Directors.

## ***Evaluation Criterion C — Implementation and Results***

### **Sub-criterion No. C1—Understanding of and Ability to Meet Program Requirements**

**MAJOR TASKS:** The major tasks for completing the Holistic Watershed Management Plan are:

1. Project Management and Stakeholder Convening (see page 10), cost: \$80,000
2. Technical Analysis (see page 13), cost \$106,000 (\$93,000 non-federal cost share)

**MILESTONES, DATES & COSTS:** A detailed breakdown of milestones and dates are provided in the Technical Proposal section (see page 13). The proposed timelines cover the time period of July 2020 to June 2022, but may be revised based on the effective date of the agreement with the Bureau of Reclamation WaterSmart Program.

### **Sub-criterion No. C2—Building on Relevant Federal, State, or Regional Planning Efforts**

The development of a Holistic Watershed Management Plan for the Ala Wai Watershed will help support the implementation of the county and state plans listed below and further described in the scope of work for project management and stakeholder convening (see page 11). Most of these plans cover a larger area than the Ala Wai Watershed and were therefore not developed to the level of specificity to analyze individual projects, focusing instead on providing guiding frameworks and goals. The plans are also limited to actions within the purview of the government agency who developed them. Close collaboration with government members of the AWWC as described in the Technical Proposal (see page 10) will ensure that the Holistic Watershed Management Plan aligns with the goals, frameworks, and timelines provided by these plans.

1. Planning for an Island-Wide Stormwater Utility (*Honolulu Department of Facilities Maintenance and the Hawai'i Community Foundation*)
2. O'ahu Resilience Strategy (*Honolulu Office of Climate Change, Sustainability, and Resiliency*)
3. Primary Urban Center Development Plan (*Honolulu Department of Planning and Permitting*)
4. Primary Urban Center Watershed Management Plan (*Honolulu Board of Water Supply*)
5. O'ahu Stormwater Management Program Plan (*Honolulu Department of Facilities Maintenance*)
6. Goal to plant 100,000 trees by 2025 and increase urban canopy to 35% by 2035 (*Mayor*)
7. The Aloha+ Challenge statewide climate and sustainability goals (*Governor, Mayors from all state counties, Office of Hawaiian Affairs, State Legislature*)

**HOLISTIC FRAMEWORKS & GOALS:** Hawai'i's Aloha+ Challenge Goals are a holistic set of six climate and sustainability goals that were developed through a statewide multi-stakeholder process to sustain Hawai'i's island economy and way of life into the future. The Aloha+ Challenge Goals and the Aloha+ Dashboard as the open data platform to measure progress on each goal will provide the framework for ensuring that priorities and needs are addressed in a holistic way that balance economic, social, and environmental priorities in the watershed (see page 11). The Aloha+ framework was recognized by the United Nations as a as a locally and

culturally grounded framework for implementing the UN 2030 Sustainability Development Goals, and showcases Hawai'i Green Growth as one of sixteen Local2030 Hubs for implementation on the global goals.

### ***Evaluation Criterion D— Department of the Interior Priorities***

The process and outcome of this proposal to create a Holistic Watershed Management Plan will support the following three Department of Interior Priorities:

#### **1. Creating a conservation stewardship legacy second only to Teddy Roosevelt**

The Technical Analysis Task B (see page 13) will conduct science-based analysis to identify best management practices of water and environmental resources [1b], including examining land use planning processes for public access [1b]. Two of the priority watershed issues are improvements of recreation spaces and uplift & restore cultural sites & practices (see page 5). Addressing these priorities, especially through the inclusive stakeholder process described in the Technical Analysis A (see page 10) will improve relationships with conservation organizations [1e] and provide better recreation access to the public [1g].

#### **3. Restoring trust with local communities**

The AWWC provides a successful structure for resource managers, regulators, users, and landowners to engage in constructive dialogue to one another [3a], and developing the Holistic Watershed Management Plan will catalyze these relationships and conversations to advance collectively agreed-upon solution for the watershed that align with existing government plans and goals, and are grounded in Native Hawaiian cultural practices [3b].

#### **5. Modernizing our infrastructure**

The AWWC as well as Hawaii Green Growth are networks that include public and private partners who have proposed innovative approaches to watershed projects that leverage the strengths and complementary nature of public and private capital as well as community volunteer efforts [5a]. Public private partnerships to remove impediments to successful infrastructure projects has been a key priority of the AWWC Policy, Finance, and Infrastructure Working Group (see page 7), and was the key theme of early AWWC convenings when in March 2016 the US Army Corps of Engineers Honolulu District, supported by the USACE Institute for Water Resources (IWR), hosted the “Ala Wai Canal Project Alternative Finance and Delivery Brainstorming Workshop”, to discuss innovative financing for the proposed Flood Mitigation project for the Ala Wai Canal [5b]. A core function of the Community Investment Vehicle (CIVic) that would execute the Holistic Watershed management Plan developed by this proposal (see page 9) is to provide ongoing financing for cyclical and deferred maintenance [5c].

### D.2.2.5. Project Budget – (1) Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
<b>Salaries and Wages</b>				
Program Manager	\$80,000	0.45	FTE/year	\$72,000
<b>Fringe Benefits</b>				
Full-Time Employees				\$8,000
Part-Time Employees				\$
<b>Travel</b>				
Trip 1				\$
<b>Equipment</b>				
				\$
<b>Supplies and Materials</b>				
				\$
<b>Contractual/Construction (estimated)</b>				
Contractor A				\$106,000
impact analysis	\$58,000	1	task 1	
financial analysis	\$10,000	1	task 2	
implementation analysis	\$12,000	1	task 3	
final report	\$10,000	1	task 4	
stakeholder engagement	\$10,000	1	task 5	
<b>Other</b>				
Other				\$
<b>TOTAL DIRECT COSTS</b>				\$186,000
<b>Indirect Costs</b>				
Type of rate	percentage	\$base		
	7%	\$200,000		\$14,000
<b>TOTAL ESTIMATED PROJECT COST</b>				\$200,000

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$100,000
Cost to be paid by the applicant	\$
Value of third-party contributions	\$100,000
<b>TOTAL PROJECT COST</b>	\$200,000

## D.2.2.5. Project Budget – (2) Budget Narrative

### **Salaries and Wages**

The Program Manager is Julius Fischer, Project Coordinator of the Ala Wai Watershed Collaboration and the Sustainability Business Forum at Hawai'i Green Growth. The Program Manager's projected salary is \$80,000 per year plus 11% fringe. The specific tasks are described in Scope A of the Project Proposal (see page 10) and include 1) Project Management & Reporting (104 estimated hours, corresponding to 5% FTE, \$4,000 for Program Year One and \$8,000 for both program years); 2) Inclusive multi-stakeholder process through the AWWC (520 estimated hours, corresponding to 25% FTE, \$20,000 for Program Year One and \$40,000 for both program years); 3) Coordination & Alignment with county and state-wide plans (104 estimated hours, corresponding to 5% FTE, \$4,000 for Program Year One and \$8,000 for both program years); and 4) Public outreach & community engagement (208 estimated hours, corresponding to 10% FTE, \$8,000 for Program Year One and \$16,000 for both program years)

### **Fringe Benefits**

The budget proposal includes fringe benefits for the Program Manager in the amount of \$4,000 per program year (approximately 11%) and \$8,000 for both program years.

<b>Task</b>	<b>Estimated Hours for each year</b>	<b>Estimated % of FTE</b>	<b>Budget per year</b>	<b>Total Budget for FY 2019 and FY2020</b>	<b>Description</b>
Project Management & Reporting	104	5%	\$4,000	\$8,000	Manage the grant, including soliciting proposals for the technical analysis scope and complying with reporting requirements, such as quarterly Financial Reports, quarterly Interim Performance Reports, the Final Performance Report, and the Sufficiency Report to determine second year funding
Inclusive multi-stakeholder process through the AWWC	520	25%	\$20,000	\$40,000	Convene and coordinate a robust, structured and inclusive multi-stakeholder process



					and dialogue including but not limited to the 128 individuals representing 65 organizations who comprise the AWWC
Coordination & Alignment with county and state-wide plans	104	5%	\$4,000	\$8,000	Coordinate and align the Holistic Watershed Management Plan process with existing state and county plans, policies, and goals
Public outreach & community engagement	208	10%	\$8,000	\$16,000	Share information with the public and provide pathways for public participation
<b>TOTAL DIRECT</b>	<b>936</b>	<b>45%</b>	<b>\$36,000</b>	<b>\$72,000</b>	
Fringe			\$4,000	\$8,000	11% fringe
<b>TOTAL</b>			<b>\$40,000</b>	<b>\$80,000</b>	

**Travel**

N/A

**Equipment**

N/A

**Materials and Supplies**

N/A

**Contractual**

The Technical Analysis as described in Scope B of the Technical Proposal will be awarded through a fixed price contract. Therefore, the estimated hours and hourly rate are intended as estimates only and may differ in the first and second program year. Procurement for the contract will follow small purchase procedures as described in “Methods of Procurement to be Followed” in CFR §200.320(b). The total contract budget is \$106,000, which is above the micro-purchase threshold (currently \$10,000) but within the Simplified-Acquisition Threshold (currently \$250,000). Price and rate quotations will be obtained from an adequate number of qualified sources in compliance with CFR §200.320(b).

The budget estimates for contractual services were developed with guidance from business members of the AWWC and will be refined at the time of RFP. Considerations that will affect

the budget include the number and level of detail of project proposals obtained, overlap among project proposals, and opportunities for partnership and cooperation. Emphasis was placed on qualitative and quantitative impact analysis to ensure evaluation of individual projects as well as cumulative and multiple benefits of combined projects. Significantly, this emphasis will allow presentation of as much information as possible to stakeholders to make informed decisions for project implementation prioritization. The task of engaging relevant stakeholders and collaborating with AWWC and Hawai'i Green Growth task is assumed as a routine part of the contractors approach.

<b>Task</b>	<b>Budget per year</b>	<b>Total Budget</b>	<b>Description</b>
Quantify impacts of each proposed project on six priorities watershed issues	\$29,000	\$58,000	Conduct a quantitative analysis of impacts of each of the identified projects, plans, programs, and activities, as appropriate, including hydrological impact, water quality impact on the Ala Wai Canal, its tributaries, and the nearshore marine environment, existing government plans and statewide priorities that will be advanced by the implementation of these actions, including alignment with the Aloha+ Challenge statewide sustainability goals.
Conduct financial analysis of the estimated cost of each proposed project	\$8,000	\$10,000	Conduct financial analysis of the costs of identified projects, plans, programs, and activities at the Rough Order of Magnitude (ROM) level.
Estimate likely implementation timeline & plan for each proposed project	\$6,000	\$12,000	Conduct appropriate project implementation analysis to determine an estimated implementation schedule of the identified projects, plans, programs, and activities as appropriate
Write watershed restoration plan ("Holistic Watershed Management Plan")	\$5,000	\$10,000	Compile the findings in a final report, the watershed restoration plan ("Holistic Watershed Management Plan")
Stakeholder Engagement	\$5,000	\$10,000	Engage relevant stakeholders in the Ala Wai watershed in partnership with Hawai'i Green Growth and the Ala Wai Watershed Collaboration network partners and assist Hawai'i Green Growth and the Ala Wai Watershed Collaboration network

			partners in communicating the draft and final drafts of the Holistic Watershed Management Plan
<b>TOTAL</b>	<b>\$53,000</b>	<b>\$106,000</b>	

***Third-Party In-Kind Contributions***

N/A

***Environmental and Regulatory Compliance Costs***

N/A (no ground-disturbing activity is anticipated)

***Other Expenses***

N/A

***Indirect Costs***

The O’ahu Economic Development Board, Hawai’i Green Growth’s fiscal sponsor, applies an indirect cost rate of 7% to cover costs associated with fiscally sponsoring Hawai’i Green Growth.

<b>Agreed upon indirect Cost Rate</b>	<b>Cost Base</b>	<b>Proposed Amount</b>
7 percent	\$200,000	\$14,000

***Non-Federal Cost Share***

The proposed budget includes cost share from the Waikīkī Beach Special Improvement District Association in the amount of \$100,000. The Waikīkī Beach Special Improvement District Association requires a 1:1 match of its contributions, and therefore its contribution is conditional upon receiving the WaterSMART Program funding. The \$100,000 cost share will be available starting July 2020.

**D.2.2.5. Project Budget – (3) Letters of Commitment**

A letter of commitment from the Waikīkī Beach Special Improvement District Association is included in the following page.

Pono Shim  
O'ahu Economic Development Board  
735 Bishop Street, Suite 424  
Honolulu, HI 96813



WBSIDA  
Waikiki Beach  
SPECIAL IMPROVEMENT  
DISTRICT ASSOCIATION

Re: Proof of Matching Funds for Ala Wai Watershed Collaboration

Aloha Pono,

As you know, I serve as President of the Waikiki Beach Special Improvement District Association, a private, non-profit association of businesses. We partner with government and community stakeholders who are committed to the preservation and enhancement of Waikiki's physical, economic and cultural environment. The Waikiki Beach Special Improvement District Association is a member of the Ala Wai Watershed Collaboration, a diverse public-private partnership committed to coastal resilience and disaster risk reduction in the Ala Wai Watershed.

**The Waikiki Beach Special Improvement District Association is pleased to commit \$100,000 to support the development of a Holistic Watershed Management Plan to match the \$100,000 provided by Department of Interior Bureau of Reclamation through the WaterSMART Cooperative Watershed Management Program, should the proposal be successful. WBSIDA will provide or cause to be provided the aforesaid funds, which will be available starting July 2020, subject to approval by the Waikiki Beach Special Improvement District Association Board of Directors.**

If you have any questions about this letter, please feel free to contact me at (808) 923-0775 or [rick@waikikiimprovement.com](mailto:rick@waikikiimprovement.com).

Mahalo,

Rick Egged  
President Waikiki Improvement Association

## **D.2.2.8. Letters of Support**

Organizations whose letters of support are included in the following pages are:

1. Department of Land and Natural Resources, Division of Forestry and Wildlife
2. Education Incubator
3. Kapi'olani Community College, University of Hawai'i
4. Mānoa Heritage Center
5. Waterkeeper Hawaiian Islands
6. Ko'olau Mountains Watershed Partnership
7. 'Iolani School
8. Waikīkī Beach Special Improvement District Association
9. Stantec
10. Polynesian Voyaging Society

DAVID Y. IGE  
GOVERNOR OF HAWAII



**STATE OF HAWAII**  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

November 8, 2019

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Aloha,

The State of Hawai'i Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) supports the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth on behalf of the Ala Wai Watershed Collaboration (AWWC). This proposal advances the work of the State by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the AWWC was formed to engage with partners to help clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The AWWC has identified the following priorities, and has structured three working groups accordingly:

- ***Resilient infrastructure system*** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance)
- ***Restoration of the Ala Wai Watershed*** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science)
- ***Community and student engagement*** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)



DOFAW Letter of Support

DOFAW is an active member of the AWWC's Working Group on Environmental Quality, Research, and Science. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of DOFAW, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of projects that will benefit this important watershed.

Mahalo,

A handwritten signature in black ink, appearing to read 'Katie', with a long, sweeping underline that extends to the right.

Katie Ersbak, Watershed Planner  
Department of Land and Natural Resources (DLNR)  
Division of Forestry and Wildlife (DOFAW)



900 Fort Street Mall #1888  
Honolulu, HI 96813  
eduincubator.org

EIN: 81-5155325

November 8, 2019

Aloha,

This letter expresses Education Incubator's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikiki Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

Education Incubator is an active member of the Working Group on Culture, Education, and Community Engagement. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of Education Incubator, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Miki Tomita".

Miki Tomita

Founder and CEO, Education Incubator

AWWC Co-Chair, Working Group on Culture, Education, and Community Engagement



UNIVERSITY of HAWAII®  
**KAPI'OLANI**  
 COMMUNITY COLLEGE

November 8, 2019

Aloha,

This letter expresses Kapi'olani Community College's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian ahupua'a (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- Resilient infrastructure system design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- Restoration of the Ala Wai Watershed and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- Community and student engagement to increase awareness about natural hazard risk, and how to manage a modern day ahupua'a in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

Kapi'olani Community College is an active member of the Working Group on Culture, Education, and Community Engagement. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of Kapi'olani Community College, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Louise Pagotto". The signature is written in a cursive, flowing style.

---

Louise Pagotto

# MĀNOA HERITAGE CENTER

November 8, 2019

Aloha,

This letter expresses the Mānoa Heritage Center's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

Mānoa Heritage Center is an active member of the Working Group on Culture, Education, and Community Engagement. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of Mānoa Heritage Center, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,



Jessica Welch  
Executive Director, Mānoa Heritage Center



**Board Members**

Wendy Wiltse, Ph.D., President  
Denise Darval Chang, Vice President  
Maile Goo, Psy.D., Treasurer  
Nikki DeHeart, Secretary  
Anne Brasher, Ph.D, Member

**Waterkeepers Hawaiian Islands**  
**P.O. Box 283120**  
**Honolulu, HI 96828**

November 8, 2019

Aloha,

This letter expresses O‘ahu Waterkeeper and Waterkeepers Hawaiian Islands’ support and commitment of the proposal put forth by the O‘ahu Economic Development Board and Hawai‘i Green Growth’s on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua‘a* (ridge to reef) management practices to a modern urban watershed.

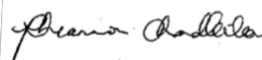
The Ala Wai Watershed, from the Ko‘olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua‘a* in an urban setting. This builds on Hawai‘i’s legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

O‘ahu Waterkeeper is an active member of the Ala Wai Watershed Collaboration. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed. On behalf of O‘ahu Waterkeeper, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

For clean water in the Hawaiian Islands,



Rhiannon R. Tereari‘i Chandler-Īao, Esq.  
Executive Director, Waterkeepers Hawaiian Islands  
rae@waterkeepershi.org  
(808) 757-1488







# KO'OLAU MOUNTAINS WATERSHED PARTNERSHIP

2674 Waimano Home Road | Pearl City HI, 96782 | 808.456.8456

November 12, 2019

Aloha,

This letter expresses the Ko'olau Mountains Watershed Partnership's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

The Ko'olau Mountains Watershed Partnership is an active member of the Working Group on Environmental Quality, Research, and Science. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of the Ko'olau Mountains Watershed Partnership, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Mahalo,

---

JC Watson  
Manager, Ko'olau Mountains Watershed Partnership



## IOLANI SCHOOL

November 8, 2019

Aloha,

This letter expresses 'Iolani School's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration . This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian ahupua'a ( ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikiki Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- *Resilient infrastructure system* design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- *Restoration of the Ala Wai Watershed* and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- *Community and student engagement* to increase awareness about natural hazard risk, and how to manage a modern day ahupua'a in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

'Iolani School is an active member of the Working Group on Environmental Quality, Research, and Science. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of 'Iolani School, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,

Yvonne Chan

'Iolani School John Kay teaching Chair in Research Science, Na' Kai 'Ewalu  
AWWC Co-Chair, Working Group on Environmental Quality, Research, and Science

November 8, 2019



WBSIDA  
Waikiki Beach  
SPECIAL IMPROVEMENT  
DISTRICT ASSOCIATION

Aloha,

This letter expresses the Waikīkī Beach Special Improvement District Association's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

The Waikīkī Beach Special Improvement District Association (WBSIDA) is an active member of the Working Group on Policy, Infrastructure, and Finance. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of the WBSIDA, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,

Rick Egged  
President, Waikīkī Beach Special Improvement District Association's  
AWWC Co-Chair, Working Group on Policy, Infrastructure, and Finance

Stantec  
1003 Bishop Street  
Suite 1985  
Honolulu, HI 96813

Aloha,

This letter expresses Stantec's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration. This proposal advances the work of the Collaborative by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

Stantec is an active member of the Working Group on Policy, Infrastructure and Finance. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of Stantec, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Sincerely yours,



Nancy S. Convard, P.E., PMP, MPH  
Senior Associate, Engineer  
[nancy.convard@Stantec.com](mailto:nancy.convard@Stantec.com)



November 10, 2019

Aloha,

This letter expresses the Polynesian Voyaging Society's support and commitment of the proposal put forth by the O'ahu Economic Development Board and Hawai'i Green Growth's on behalf of the Ala Wai Watershed Collaboration. This proposal advances our work by articulating a Holistic Watershed Management Plan for the Ala Wai Watershed through a multi-stakeholder collaborative process that applies traditional Hawaiian *ahupua'a* (ridge to reef) management practices to a modern urban watershed.

The Ala Wai Watershed, from the Ko'olau Mountains to Waikīkī Beach, could face upwards of \$30 billion in economic losses from a single hurricane or natural disaster, as well as environmental and public health risks from pollution in the Ala Wai Canal and nearshore waters. In response, the Ala Wai Watershed Collaboration formed around ambitious proposed steps to clean up the watershed and canal, reduce the flood risks of catastrophic natural disasters and potential climate change impacts, and improve community livability and opportunities for cultural connections throughout the watershed.

The Collaboration has identified the following priorities, and has structured three working groups accordingly:

- **Resilient infrastructure system** design, funding, development and maintenance to mitigate current and future climate and natural hazard risks (Working Group on Policy, Infrastructure and Finance);
- **Restoration of the Ala Wai Watershed** and its tributaries, including the upper watersheds in Makiki, Mānoa and Pālolo to increase water recharge and improve water quality, ecosystem services, tourism and recreational activity (Working Group on Environmental Quality, Research, and Science);
- **Community and student engagement** to increase awareness about natural hazard risk, and how to manage a modern day *ahupua'a* in an urban setting. This builds on Hawai'i's legacy of indigenous knowledge and practice of systems-thinking (Working Group on Culture, Education, and Community Engagement)

The Polynesian Voyaging Society is an active member of the Working Group on Culture, Education, and Community Engagement. This grant would provide much needed funding to convene stakeholders and to conduct the necessary technical and financial analysis to determine the cost and implementation needs of projects identified through the multi-stakeholder convening process, culminating in a Holistic Watershed Management Plan for the Ala Wai Watershed.

On behalf of the Polynesian Voyaging Society, I am pleased to offer our support for this important project and our commitment to assist in the successful implementation of its activities in the watershed.

Mahalo Piha,

Nainoa Thompson  
President  
Polynesian Voyaging Society

### **D.2.2.9. Official Resolution**

Due to the timing of board meetings, this application does not include an official resolution by the applicant's board of directors.

An official resolution will be passed by the Board of Directors of the O'ahu Economic Development Board at the Board of Directors Meeting on 12/05, and submitted by December 12 (up to 30 days after the application deadline of November 13) as described in the FAO section D.2.2.9.