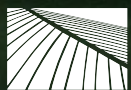


Response to Notice to Providers of
Professional Services
Fiscal Year 2025

Computer Engineering (GIS Mapping/ Programming Services)

Submitted to:
Department of Information Technology
County of Hawai'i

Submitted by:



PBR HAWAII
& ASSOCIATES, INC.

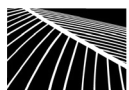
June 2024

Response to Notice to Providers of
Professional Services
Fiscal Year 2025

Computer Engineering (GIS Mapping/ Programming Services)

Submitted to:
Department of Information Technology
County of Hawai'i

Submitted by:



PBR HAWAII
& ASSOCIATES, INC.

June 2024



PBR HAWAII
& ASSOCIATES, INC.

June 26, 2024

Via Email: DIT_Purchasing@hawaiiicounty.gov

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

CATIE CULLISON, AICP
Vice-President / Principal

TOM SCHNELL, AICP
Vice-President / Principal

MARC SHIMATSU, ASLA
Principal

RAYMOND T. HIGA, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

NATHALIE RAZO
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Director of Land Economics & Real Estate

RAMSAY R. M. TAUM
Cultural Sustainability Planner

ETSUYO KILA
Senior Associate

GREG NAKAI
Senior Associate

NICOLE SWANSON, ASLA
Associate

BRADLEY FURUYA, AICP
Associate

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

Mr. Robert Ewbank
Department of Information Technology
County of Hawai'i
25 Aupuni Street
Hilo, Hawai'i 96720

**SUBJECT: LETTER OF INTEREST FOR TO PROVIDE PROFESSIONAL
COMPUTER ENGINEERING (GIS MAPPING/PROGRAMMING
SERVICES) FOR FISCAL YEAR 2025**

Dear Mr. Ewbank:

In response to the "Notice to Providers of Professional Services for FY2025," PBR HAWAII is pleased to present the attached Letter of Interest for the following service:

DS.4) Computer Engineering (GIS Mapping/Programming Services)

Based on the description provided and PBR HAWAII's extensive experience in the geographic information systems, we believe that our technical expertise demonstrates our capability to perform the necessary functions in a timely and cost-efficient manner.

We appreciate the opportunity to submit our qualifications and look forward to working with the Department of Information Technology, County of Hawai'i. We are confident that PBR HAWAII can provide the technical expertise necessary to satisfy your GIS related requirements.

Sincerely,

Kimi Mikami Yuen, LEED AP BD+C
Vice President

Attachment

P250603-1 LTR

printed on recycled paper



Firm Background

Name of Firm or Individual, Principal Place of Business and Location of All of its Offices

PBR HAWAII & Associates, Inc. is a multi-disciplinary consulting firm founded and based in Hawai'i for 54 years. We have a staff of 40 dedicated individuals, most of whom are accredited by professional organizations in their respective fields. PBR HAWAII has five licensed landscape architects, three certified planners (AICP), and five LEED Accredited Professionals (two LEED AP BD+C, one LEED AP ID+C, one SITES AP), and one Ph.D. Over the years, we have worked with nearly all county and state agencies that impact land use, and most of Hawai'i's prominent landowners.

PBR HAWAII has the capabilities to provide consulting services in the following disciplines:

- **Land planning and urban design**, including master planning, GIS modeling and data development and management for geographic analysis in both rural and urban contexts for: transit-oriented mixed-use developments, educational and campus facilities, resort and residential communities, commercial and industrial facilities, parks and recreational facilities, and natural and cultural resources;
- **Regional and community planning**, including long-range regional analysis and planning, GIS modeling and graphic development, community outreach and engagement (including in-person and virtual meeting facilitation and interactive input), and sustainable design and resiliency concepts;
- **Environmental planning and entitlements**, including Hawai'i State Chapter 343, HRS and National Environmental Policy Act (NEPA) environmental assessments/environmental impact statements, and State and County permits and land use entitlements;
- **Landscape architecture**, including hardscape, irrigation, and landscape design, 3-D modeling, consultation on the use of Native Hawaiian plants, cultural landscapes, sustainable landscape design, and LEED Certification;
- **Graphic design**, including project branding, web design, interpretive displays and signage, educational material, and infographics;
- **Market, fiscal, and economic analyses**, for critical insights to market context and costs and benefits of a project in terms of local expenditures, employment and earnings for residents, and impacts to State and county government revenues and expenditures; and
- **Hawaiian cultural sustainable design concepts**, including place-based sustainable design and cultural advising, providing guidance on how to honor and incorporate Hawaiian culture into projects, and orienting clients new to Hawai'i with an introduction to Hawaiian culture.

PBR HAWAII
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813

Tel: (808) 521-5631
Fax: (808) 523-1402
E-Mail: sysadmin@pbrhawaii.com

Geographic Information Systems

PBR HAWAII uses Geographic Information System (GIS) products, online mapping and 3-D modeling technologies for land planning, environmental studies, and landscape architecture. Because GIS is a powerful planning tool for understanding site context, assets and constraints, PBR HAWAII is continuously investing in its GIS programs and the team's GIS capabilities. These investments support our clients' asset management programs, land inventories, community engagement, and decision-making processes. The company's current GIS programs include:

ESRI ArcGIS Desktop ArcMap,
ESRI ArcGIS Pro,
ESRI ArcGIS Publisher,
ESRI ArcGIS 3D Analyst,
ESRI ArcGIS Spatial Analyst,
ESRI ArcGIS Business Analyst (Online),
ESRI ArcGIS CityEngine, and
ESRI ArcGIS Online Applications

Using these advanced cartographic mapping tools together with AutoCAD and Adobe Creative Cloud applications, PBR HAWAII can provide a comprehensive and integrated view of a project area by consolidating and digitizing geographic and non-geographic data from separate databases and hard copy maps and reports. With the GIS analytical tools, PBR HAWAII can run spatial analysis to reveal additional characteristics about a study area. The results of the GIS analysis are clear and concise graphical representations that can facilitate and expedite decision-making processes.

With GIS programs, online mapping, and 3-D modeling tools, PBR HAWAII can:

- ◆ Create base maps for reports such as Environmental Assessments, Environmental Impact Statements, Master Plans, and various permits applications.
- ◆ Digitize hard copy maps and other property information resources to create a project-based or enterprise-based geodatabase to support a client's asset management and specific mapping needs.
- ◆ Map sensitive areas, such as cultural and archaeological areas, flood hazard zones, state land use and county zoning districts, conservation areas, and critical habitats to support decision-making to determine the best use for land and avoidance of negative impacts.
- ◆ Provide land suitability/site selection studies for proposed development based on the identified criteria.
- ◆ Prepare natural disaster vulnerability analysis and risk assessments.
- ◆ Utilize ESRI online resources to create web-based interactive maps such as GIS Online web maps and StoryMaps, which can be reviewed with mobile devices and support the public engagement.

The Age of Firm and its Average Number of Employees over the Past Year

Based in Hawai'i for 54 years, PBR HAWAII's average number of employees over the past year has been approximately 38 which breaks down into the following categories:

Principals	6 - 8
Planning Associates	4 - 5
Landscape Architect/Associate	6 - 7
Land Planners	7 - 8
Landscape Designers/Draftsmen	5 - 6
Graphic Designers	1 - 2
Business/Administration	5 - 6
Total Employees:	34 - 42

Capacity to Complete the Work in the Required Time

PBR HAWAII's staff is capable of immediate start and timely completion of projects. Our current workload projections conclude that we have well-trained and experienced staff to accomplish assignments. With our 40 employees, PBR HAWAII is one of the largest planning and landscape architectural firms in the state. PBR HAWAII has the capability and experience of responding to client demands on moment's notice. As a service business, it is our goal to maintain satisfied clients from project start to finish. Repeat clientele represents approximately 80% of our work and is evidence of PBR HAWAII's ability to provide timely service and quality products year after year.

It is our goal to respond to each assignment effectively and rapidly, while ensuring the successful implementation of project requirements. PBR HAWAII is also committed to immediate start-up on projects for Client emergencies or unexpected needs. A principal will be assigned to every project to see that project schedules are met. The process we propose consists of following administrative procedures:

1. Meet with Client and determine/identify critical project components and other logistical or coordination project needs.
2. Visit project site.
3. Evaluate the project scope, budgets, scheduling constraints/requirements and logistical considerations such as travel, work sequencing, equipment acquisition, etc.
4. Make key project assignments based on Client needs and schedule.
5. Initiate appropriate project controls, methodology to monitor progress reports, and final delivery schedules.

Tools such as Microsoft Teams, SharePoint, and Project are often helpful to develop a workflow that integrates project planning, design, and construction tasks. A PBR HAWAII project manager for a specific project would use such a tool to determine opportunities for concurrent work tasks, as well as monitor critical path tasks that affect overall project delivery. The project schedule would evolve in detail and approach and will be updated regularly. Regular team meetings provide a means to ensure assignments get accomplished in a timely manner and to anticipate and come up with solutions for new issues. Concise meeting notes will be timely disseminated to document decisions and next steps, as well as to guide accountability. A controlled-access Internet site for team members (e.g., Basecamp) is useful to share files, exchange messages, assign tasks, and manage a calendar.

PBR HAWAII has established a system for internal communication in which the project manager constantly coordinates, and reviews staff work products and relays this information to the principal-in-charge of the project. A system for critiques has been established to allow staff input and to take advantage of individual talents and experiences. Points of contact within the firm are established for coordination with consultants and with project team members. Project managers are required to keep consultants and other project team members abreast of project status through weekly or bi-weekly (depending on project requirements) coordination meetings and memorandums. Communication with other consultants is not a problem as PBR HAWAII utilizes state of the art technology and software to keep these consultants abreast on the project status. A coordination check list along with standard process charts, schedules, and timelines are established to complete projects on schedule and within budget. The related projects listed are examples of projects completed on time and on budget.

Resumes

Education, Training and Qualifications of Key Members of the Firm

Following are the resumes of the education, training, qualifications and licensure of the following key members of the PBR HAWAII.

Kimi Yuen, LEED AP BD+C
Dacheng Dong, LEED AP
Etsuyo Kila
Natalie Hanson, LEED AP ID+C
Mahshid Bagheri

Principal
Associate Principal
Senior Associate / GIS Analyst
Project Manager/Planner/GIS Analyst
Physical Planner/GIS Analyst

KIMI MIKAMI YUEN | LEED AP® BD+C
VICE PRESIDENT | PLANNER

With 24 years of experience at PBR HAWAII, Ms. Yuen manages a variety of planning and design projects as well as the successful preparation of land use permits, environmental assessments, and environmental impact statements. Her work includes a diverse range of regional and long-range land plans, master planned communities, public and private sector projects, community engagement and meeting facilitation, urban design, educational facilities, and park master plans.

She has coordinated and led extensive community engagement efforts, testified in front of various boards, commissions, and councils, and spoken at various seminars and educational programs for The Seminar Group, Hawai'i State Bar Association, National Association of Industrial and Office Properties (NAIOP) Hawai'i Chapter Developing Leaders Group, the Institute of Transportation Engineers Hawai'i Section, and the University of Hawai'i at Mānoa Shidler College of Business.

Ms. Yuen has served on the Board of Directors for the Hawai'i Tourism Authority (HTA) as Second Vice Chair of the Board and Chair of the Ho'okahua Hawai'i Standing Committee. She also chaired the HTA's Strategic Plan Investigative Committee that oversaw the 2020 update and worked closely with the HTA leadership team on the development of the Destination Management Action Plans for each island. She is also actively involved in several professional organizations including the Urban Land Institute for which she is on the Management Committee and cochairs the Women's Leadership Initiative Committee, the American Planning Association Hawai'i Chapter, for which she has served as President, Vice President, and the APA/UH DURP Liaison. She is currently the President of the Lambda Alpha International Aloha Chapter, a land economics honor society, and serves on the Hawai'i Architectural Foundation Board of Directors.



EDUCATION

Master in Urban and Regional Planning, 1999
University of Hawai'i at Mānoa
BA in Architecture, with Highest Honors, 1995
University of California, Berkeley
Minor in Asian American Studies, 1995
University of California, Berkeley

ACCREDITATIONS

LEED AP® Building Design + Construction;
U.S. Green Building Council®

PROFESSIONAL AFFILIATIONS

American Planning Association, Hawai'i
Chapter President, 2015-2017, Vice
President, 2011-2015; APA/DURP Liaison
Hawai'i Architectural Foundation
Board of Directors
Lambda Alpha International-Aloha Chapter
President 2023-2024, Vice President 2021-
2022; Membership Chair 2020-2021
UH DURP Professional Council
Urban Land Institute Hawai'i District Council
Management Committee; Women's
Leadership Initiative
USGBC® Hawai'i Chapter - Member, LEED
Regionalization Task Force

BOARDS & COMMISSIONS

Hawai'i Tourism Authority
Board of Directors, 2019-2022; Ho'okahua
Hawai'i Standing Committee Chair
City & County of Honolulu Salary
Commission, 2016-2020

AWARDS & RECOGNITIONS

UH DURP Dinell Outstanding Alumni Award,
2020
Pacific Century Fellows, Class of 2016
Pacific Business News Forty under 40, Class
of 2011
SMEI & Hawai'i Business Magazine
Distinguished Sales & Marketing Awards
Green Services, Finalist 2012

DACHENG DONG | LEED® AP**ASSOCIATE PRINCIPAL / PLANNER/GIS ANALYST**

As an Associate Principal at PBR HAWAII, Mr. Dong participates on a diverse range of land use planning and urban design projects. His architectural design background gives him various physical planning and site design skills that contribute to all levels of planning projects. In addition, his sketch and rendering skills are a unique addition to the planning and design team. His experience with ESRI GIS, including ArcMap, ArcGIS 3D analysis, ArcGIS Spatial Analyst, aids the multi-disciplinary team in preparation of maps, land use analysis, and planning document. Mr. Dong's experience of working on a wide range of projects and his ability to integrate a variety of components into cohesive, forward-thinking planning projects makes him a valuable member of any project team.

His experiences include preparing University of Hawai'i West O'ahu university village urban design plan, developing the Lāna'i City expansion and the 201H housing project master plan; conducting GIS analysis and mapping for the O'ahu Flood Vulnerability Study and exploring the site development capacity for several urban parcels via the zoning code study and site planning exercise.

**EDUCATION**

Master in Urban and Regional Planning,
2004

University of Hawai'i at Mānoa

Bachelor of Architecture, 1999
Beijing Polytechnic University

ACCREDITATION

LEED® Accredited Professional; U.S. Green
Building Council

PROFESSIONAL AFFILIATIONS

American Planning Association, Hawai'i
Chapter
Member

ETSUYO KILA

SENIOR ASSOCIATE / GIS ANALYST

As a Senior Associate at PBR HAWAII, Ms. Kila participates on a diverse range of regional and land planning studies and analyses. Her planning and cartographic skills provide a valuable contribution to all levels of planning projects.

In particular, Ms. Kila's extensive experience with GIS, including ArcGIS Pro and ArcGIS Online, is invaluable to the firm's multi-disciplinary team in preparation of maps, planning documents, and quantitative analyses.

Ms. Kila's current projects address environmental and sustainability considerations as well as general planning goals. These include a land suitability analysis for the Hawai'i Island Plan update and on-going need-based GIS services for State Department of Hawaiian Home Lands (DHHL), an urban design plan update and a long range development plan update for the University of Hawai'i West O'ahu, and online interactive map and StoryMap design support for various projects as a part of community outreach and engagement efforts. Past projects of note include: GIS data development and land and license inventories for the DHHL, the Flood Vulnerability Assessment for the State Department of Land and Natural Resources, and the Internal GIS Database Support for Kamehameha Schools.



EDUCATION

Master in Urban and Regional Planning,
2005

University of Hawai'i at Mānoa

BA in International Relations, 1995
Kobe City University of Foreign Studies

PROFESSIONAL AFFILIATIONS

American Planning Association, Hawai'i
Chapter
Member



NATALIE HANSON | LEED® AP ID+C PROJECT MANAGER / PLANNER

At PBR HAWAII, Ms. Hanson's responsibilities include preparation of environmental assessments and special district permits for government projects, GIS mapping and analysis, community engagement through website content management and web-based outreach tools (such as MailChimp, StoryMaps and SurveyMonkey), and preparation of federal and state environmental documents including documentation of compliance with the National Environmental Protection Act (NEPA).

Her recent projects include community engagement and environmental compliance documentation for the Department of Hawaiian Home Lands use of HUD-Native Hawaiian Housing Block Grant (NHHBG) funds, and community engagement for the City and County of Honolulu's Complete Streets, Pedestrian Plan, and Ala Pono an Ala Wai Crossing. Current projects include updating the Ocean Resource Management Plan with the Office of Planning, preparing flood map reports for the Department of Land and Natural Resources, updating the City and County of Honolulu's TOD website, and land use, community planning, and preparation of NEPA environmental reports for the Department of Hawaiian Home Lands. While earning her Master's in Urban and Regional Planning at the University of Hawai'i, Ms. Hanson re-designed the department's website and social media platforms, assisted in the launch of the department's first alumni association, and received funding from the J. Watumull Scholarship for conducting field research on sea level rise adaptation in Kolkata, India.

Ms. Hanson also brings to her role as planner a bachelor's degree in sociology, anthropology, and Asian studies; both quantitative and qualitative data collection and analytical skills; and seven years of experience work-study throughout Asia. This background has fostered a firm grounding in the importance of inclusion when conducting community outreach as part of planning processes and decision making.



EDUCATION

Master in Urban and Regional Planning,
2016

University of Hawai'i at Mānoa

Graduate Certificate in Disaster
Management and Humanitarian Assistance,
2016

University of Hawai'i at Mānoa

BA in Sociology/Anthropology, Asian
Studies, 2007

St. Olaf College, Northfield MN

Native Hawaiian Organizations in the
Section 106 Process

Seminar co-hosted by Historic Hawai'i
Foundation, The Advisory Council on
Historic Preservation, and the U.S.

Department of the Interior Office of Native
Hawaiian Relations

Foundations in Environmental Review:
NEPA and 24 CFR Part 58 Environmental
Review Procedures – Technical Assistance
Workshop hosted by Department of
Hawaiian Home Lands and U.S. Department
of Housing and Urban Development

ACCREDITATIONS

LEED® AP Interior Design + Construction
U.S. Green Building Council

PROFESSIONAL AFFILIATIONS

American Planning Association
Hawai'i Chapter
Member

Lambda Alpha National Collegiate Honors
Society for Anthropology

DURP Ohana

University Students of Urban and Regional
Planning

MAHSHID BAGHERI

PHYSICAL PLANNER

Mahshid holds a master's degree in Urban and Regional Planning. Her motivation is to be part of creating a sustainable planet through effective participatory processes and cross-sector collaboration. She brings experience in urban designing, physical planning, and mapping.

During her studies, Ms. Bagheri worked as a graduate research assistant in National Disaster Preparedness Training Center (NDPTC) and focused on disaster management and humanitarian assistance planning. Through this period, she was part of a wide variety of projects; She assisted in a GIS analysis project to investigate the impact of flight restriction relaxation on the number of COVID cases on the Island of Oahu in Spring 2020. She also helped with the preparation of COVID-19 contact tracing and social distancing surveys, and GIS analysis of the obtained data.

During her studies, Mahshid also contributed to conducting a research project for the State of Hawai'i Department of Land and Natural Resources – Division of Boating and Ocean Recreation (DOBOR) with the purpose of creating a conceptual development plan to guide the potential future development of the Ala Wai Small Boat Harbor. In this project she helped with conducting a site inventory and site analysis, conducting community and stakeholders' engagement surveys and interviews, and assessing prior stakeholder engagement results. She also developed resilient design guidelines including several strategies for addressing sea level rise and flooding in the Ala Wai Small Boat Harbor.

Some other projects that Mahshid assisted with are: 1) developing an infrastructure plan for Waipahu TOD area by analyzing various infrastructure considerations including multi-modal transportation, parking, stormwater and green infrastructure, 2) finding links between demography and resource dependency on Merizo residents' attitudes and perceptions towards coastal and marine resources in the Achang Reef Flat Marin Preserve, Guam by analyzing a survey data employing IBM SPSS Software, and 3) a SPSS analysis of a survey conducted one year after 2017 earthquake in middle east to investigate the relationship between people's awareness about their significant role in response and recovery activities after one year of a disaster, and the improvement of their quality of life in the post-disaster process.



EDUCATION

Master of Urban and Regional Planning,
2021

University of Hawai'i at Mānoa

Bachelor of Architecture Engineering, 2018
Iran University of Science and Technology

Bachelor of Physics, Atomic and Molecular
Physics, 2009
Shahid Beheshti University

PROFESSIONAL AFFILIATIONS

American Planning Association
Member

The background of the page is a dark, moody photograph of green foliage, possibly a plant with long, narrow leaves, creating a textured and organic feel.

Client References

***Names and Phone Numbers of up to
Five Clients Who May Be Contacted, Including Two for Whom Services
Were Rendered During the Preceding Year***

Cal Chipchase
Cades Schutte, LP
(808) 521-9220
cchipchase@cades.com

Jesse Colandrea
Department of Land and Natural Resources
(808) 587-0277
jesse.k.colandrea@hawaii.gov

Kathleen Aoki
County of Maui, Planning Department
(808) 270-7734
kathleen.aoki@mauicounty.gov

Jaime Nakao
Kamehameha Schools
(808) 541-5355
janakao@ksbe.edu

David Hinazumi
Grove Farm Properties, Inc.
(808) 245-3678
dhinazumi@grovefarm.com



Relevant Project Experiences

Any Promotional or Descriptive Literature Which the Individual or Firm Desires to Submit

Over the years, PBR HAWAII has been fortunate to have provided our services to federal agencies, State of Hawai'i agencies, county agencies on all islands, and most large land owners and developers throughout the state. The following projects provide an example of our diverse planning experience.

Department of Hawaiian Home Lands GIS Services, Statewide

PBR HAWAII is currently assisting the Department of Hawaiian Home Lands (DHHL) with geospatial mapping, data research, and spatial analysis in support of various GIS needs at DHHL Planning Office. As part of this effort, PBR HAWAII worked with DHHL staff to: 1) identify and quantify all DHHL TMK parcels on O'ahu which are entirely or partially within Special Management Areas; 2) list homestead lots by TMK number in specified homesteads that are approximately 40 acres or larger in Supplemental Agriculture and Subsistent Agriculture Land Use Designations; 3) geocode health facilities on each island by provided street addresses; and 4) analyze the state-owned TMK parcels within State Urban Land Use District and the county's residential zones in North Kona, South Kohala, and South Hilo on Hawai'i.

Depending on the user requests, deliverables have been provided to DHHL in a shapefile format, in a geodatabase format, in a KML format, PDF/JPG maps, or an Excel table.



Department of Hawaiian Home Lands GIS Land Inventory, Statewide

The Department of Hawaiian Home Lands (DHHL) contracted PBR HAWAII to assist with three types of land inventories using GIS: 1) DHHL Land Inventory; 2) DHHL License Inventory and 3) Native Hawaiian Rehabilitation (NHRF) Inventory.

As part of this work PBR HAWAII designed and developed a GIS database for each inventory based on the inventory's specific land management purpose. The data development process included: 1) reviewing hard copy reports and paper licenses; 2) scanning paper documents and maps; 3) spatially referencing scanned maps and digitizing property boundaries; 4) discussing and deciding with DHHL what land management information to input into GIS; and 5) following up with DHHL regarding any data discrepancies and challenges.

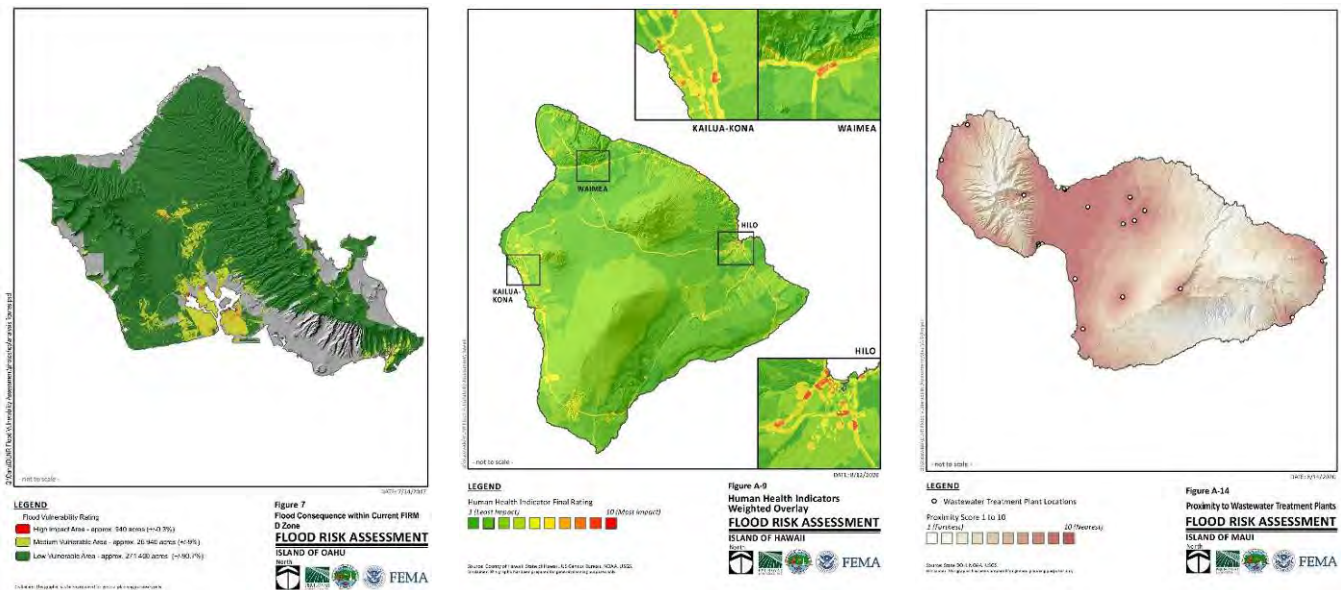
Deliverables were provided to DHHL in a geodatabase format, PDF/JPG maps, and Excel spreadsheets.

Flood Vulnerability Assessment Report, Statewide

PBR HAWAII prepared the O'ahu, Hawai'i, Maui, Moloka'i, Lāna'i, and Kaua'i Island Flood Vulnerability Assessment Reports. These reports satisfy a technical pilot project to: 1) assess flood risk vulnerability statewide; and 2) provide the Federal Emergency Management Agency with information identifying areas that need to be studied on the Flood Insurance Rate Maps.

The analysis included compiling GIS data to illustrate probable flood areas and pairing it with asset mapping to develop flood vulnerability maps. The resulting maps offer the State a direction in suggesting where FEMA should focus flood mapping resources.

For Hawai'i Island, PBR HAWAII prepared a building footprint layer in GIS. The flood vulnerability assessment for the islands of O'ahu and Maui was done in GIS using publicly available GIS data, including a building footprint GIS layer for O'ahu and Maui.



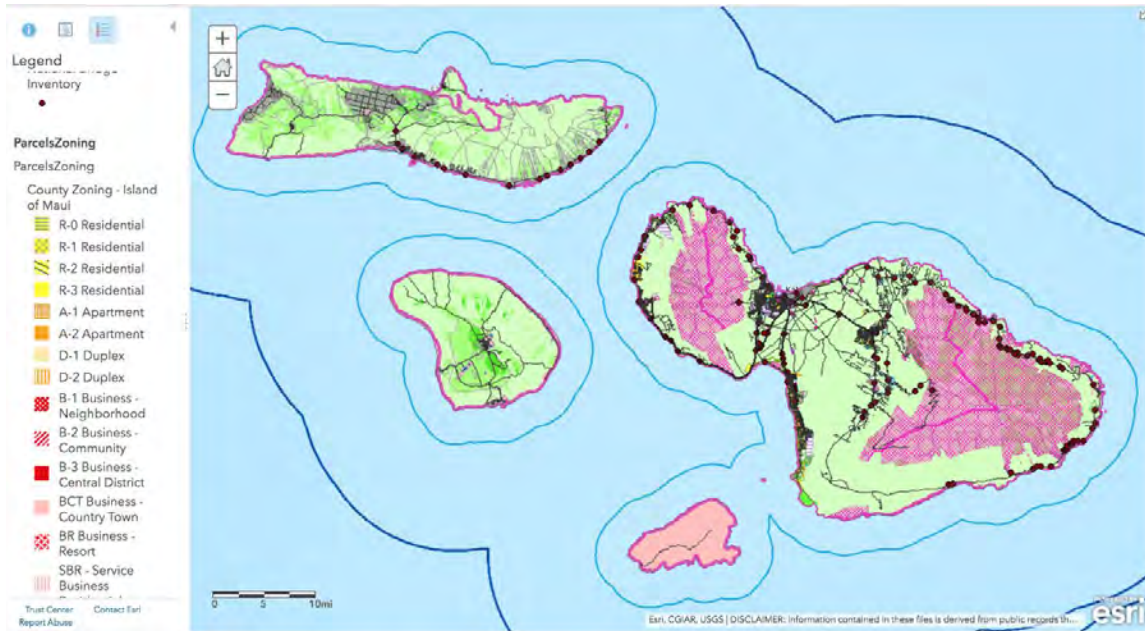
Kamehameha Schools Statewide Internal GIS Datasets

PBR HAWAII assisted Kamehameha Schools (KS) with geospatial mapping, data management, and analysis in support of KS's Strategic Plan 2020. As part of this effort PBR HAWAII worked with KS staff to: 1) update existing KS Programs and Services layers from pre-defined data sets and from databases provided by KS program managers; 2) create a base layer for Usable Acres from the latest Excel database developed by KS' land analyst; and 3) prepare base maps to show existing KS Preschool and Admissions boundaries in the relation to other administrative boundaries.

Depending on the user requests, deliverables were provided to KS in a shapefile format, in a geodatabase format, PDF/ JPGE maps, or an Excel table.

Maui County Code Title 19 Zoning Rewrite

PBR HAWAII is supporting Orion Planning + Design (Orion) with rewriting the County of Maui's zoning ordinance, Title 19. Initial stakeholder meetings have been held and the project team is currently working on drafting the updates. PBR HAWAII is responsible for GIS mapping and updates to the environmental and cultural/historic sections of the code rewrite. PBR HAWAII will also be creating a project website to support community outreach and public review of drafts of the Title 19 revisions. Once the adopted, PBR HAWAII will support the Orion team with Maui County Staff and public trainings to introduce elements of the newly adopted zoning code.



Maui Agricultural Park Master Plan

PBR HAWAII provided master planning services for A&B Properties, Inc for their Hawaii Commercial & Sugar (HC&S) lands on Maui. With HC&S closing in 2016, this master planning effort focused on approximately 8,000 acres previously under sugar cultivation (including approximately 300 acres that the County of Maui wanted to acquire for an agricultural park).

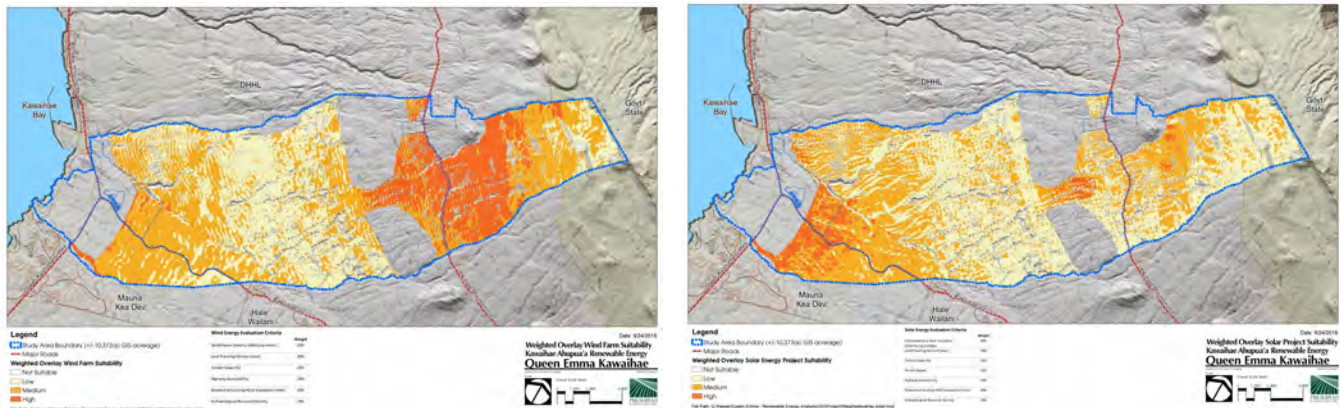
Using existing parcels of record/tax map key parcels information, PBR HAWAII: 1) inventoried existing agricultural infrastructure; and 2) prepared plans for the consolidation and re-subdivision of the parcels, which included allocations of allowable agricultural lots that could be subdivided within the larger parcels.

Kawaihae Renewable Energy Planning, Hawai'i

Queen Emma Land Company contracted PBR HAWAII to provide planning services to assess the potential of locating renewable energy projects (solar and wind) within the approximately 10,200 acre Kawaihae ahupua'a.

PBR HAWAII prepared the Kawaihae Ahupua'a Management Plan (2009) and updated the strategic planning in 2012, and is very familiar with the opportunities and constraints of the property and QEL's long range planning considerations.

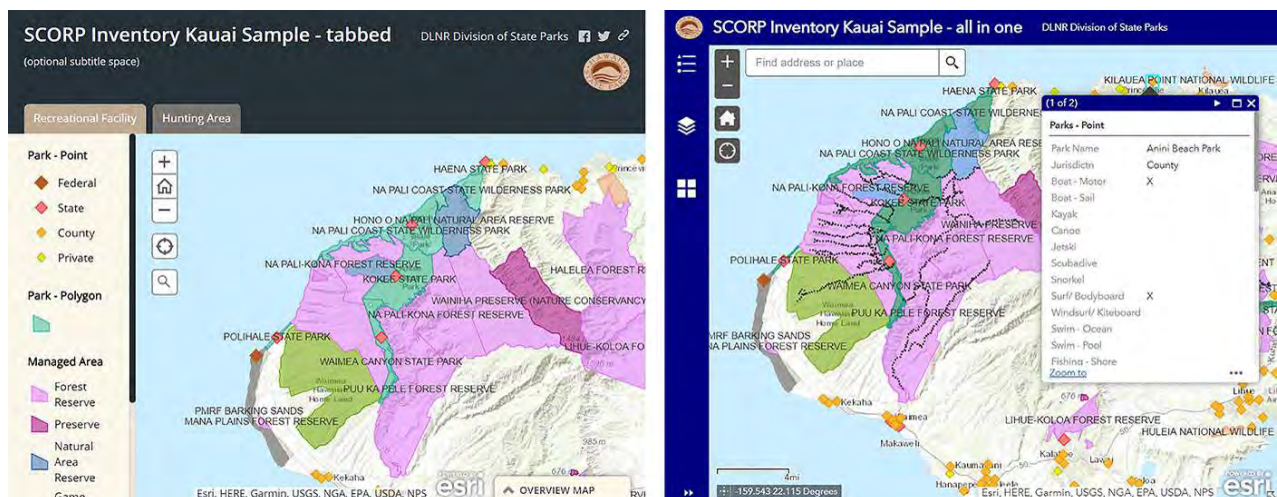
Under this planning effort, PBR HAWAII utilized the GIS advanced analyst tools to provide a more detailed site assessment related to renewable energy resources and land planning rationale to identify various alternatives for the interim or long-term use of portions of these lands for renewable energy projects.



State Comprehensive Outdoor Recreation Plan Update, Statewide

PBR HAWAII supported the Department of Land and Natural Resources State Parks Division with the 2021 update to the State Comprehensive Outdoor Recreation Plan (SCORP). PBR HAWAII also prepared the 2003, 2008, and 2015 updates. The work involved an update to the recreational inventory database and GIS maps through a consultative process with recreational providers, an update to the Wetlands Resource Plan, public engagement by workshops and survey, and an updated SCORP document preparation.

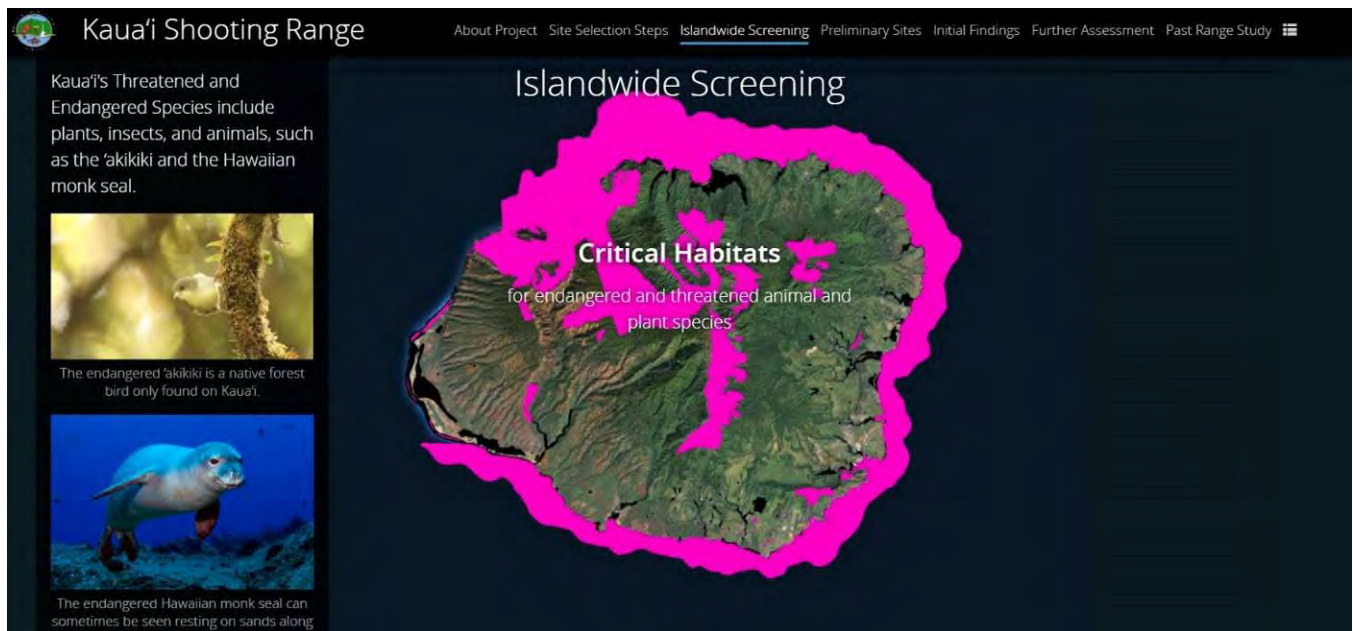
PBR HAWAII utilized ArcGIS and Excel to develop and update the recreational inventory database and GIS maps. For the 2021 update, in response to the population's growing use of technology for communications, PBR HAWAII offered a web-based map format in addition to hard copy and PDF formats. Two types of ArcGIS Online webmap samples were prepared for State Parks.



Kaua'i Shooting Range Site Selection Study, Kaua'i

PBR HAWAII is supporting the State Department of Land and Natural Resources, Division of Forestry and Wildlife, Engineering Division, and Hawai'i Hunter Education Program in conducting a site selection study and Environmental Assessment for a public shooting range on Kaua'i. The project includes an island-wide screening using GIS to locate suitable sites for a public shooting range, coordination with stakeholder groups, conducting a feasibility study for the preferred site, community engagement, and an environmental assessment to evaluate environmental impacts and establish mitigation measures.

PBR HAWAII used ArcGIS Online StoryMap to show each step of the site selection process, overlaying and describing primary site constraints, one at a time, and illustrating how the screening process resulted in three short-listed sites. The StoryMap became a useful educational tool to teach about the project and has been used by DLNR at various meetings with state agencies and stakeholders.



County of Kaua'i Land Use Build Out Technical Study, Kaua'i

The Kaua'i General Plan Land Use Build Out Analysis is one of a series of technical studies to support the update of the County of Kaua'i General Plan. PBR HAWAII used GIS to analyze attributes of parcel and zoning layers to: 1) identify "developable" parcels based on zoning and other criteria; 2) estimate the development capacity; 3) estimate the demand based on population and economic projections; and 4) model the build out based on an analysis of past trends. The results were analyzed by Planning Districts and Transportation Analysis Zones (TAZs) and summarized into a report.

Diamond Head State Monument Implementation Plan, O'ahu

DLNR State Parks contracted PBR HAWAII to assist in proposing improvements to the Diamond Head State Monument to enhance and diversify visitor experiences in and around the crater. As part of the project, PBR HAWAII prepared a public participation plan, which recommended social media to cost effectively increase public engagement. To inform the public about proposed improvements and to obtain input, PBR HAWAII used ArcGIS StoryMap to produce a webpage with narrative text, multimedia content, and a link to an on-line survey (SurveyMonkey). In total, more than 500 people responded to on-line survey, to provide both DLNR State Parks and legislators with feedback to support proposed improvements.



Haleakalā Ranch 2014-2015 Strategic Planning Support, Maui (geodatabase development)

For many years PBR HAWAII has assisted Haleakalā Ranch in the preparation of a geodatabase and computerized maps that the Ranch uses for long range planning of its approximately 29,000 acres on Maui. As part of this work PBR HAWAII used GIS to assemble a series of planning base maps and then compile the associated data files into a usable database. Using Arcview GIS software, Haleakalā Ranch is now able to assess the geodatabase and plan for its lands which stretch from the upper areas of Kīhei to the upper slopes of Haleakalā.

PBR HAWAII also assisted Haleakalā Ranch with the Ranch's on-going strategic land asset management plan focusing on a Water Resource Management Plan. The goal is to integrate the Ranch's land asset planning efforts and the long-term water resource management and development plan. In support of formulating the Water Resource Management Plan, PBR HAWAII is working closely with the Ranch and a water resource consultant to provide land planning and GIS mapping support.

The geodatabase was published into a user-friendly interface that allows those with little or no GIS technical training staff to access the database via ArcReader Program.



Water Distribution System USDA-RD Packets

In support of the development of DHHL trust lands, water distribution infrastructure often needs to be expanded or improved, particularly in rural areas. DHHL works to reduce development costs through partnerships, loans, grants, sweat equity, and other means.

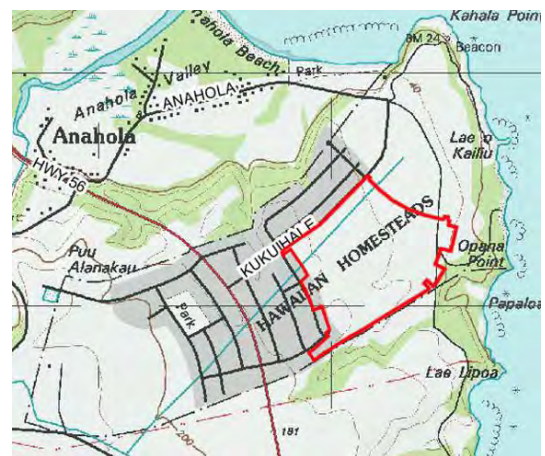
Working with Nā Kupaʻa o Kūhiō to further DHHL's objectives, and in support of Nā Kupaʻa o Kūhiō's submittal to United States Department of Agriculture-Rural Development (USDA-RD) for NEPA Compliance with 7 CFR 1794, PBR HAWAII prepared and consolidated environmental and engineering documentation for the:

- Pi'ilani Mai Ke Kai Water Distribution System
- Kakaina Water Distribution System
- East Kapolei IIA Water Distribution System
- East Kapolei IIB Water Distribution System, and
- Maku'u Offsite Water System

This work included analysis of GIS data, the preparation of GIS maps, and also: 1) review of previously prepared plans; 2) data collection; 3) revision of a Preliminary Engineering Report (PER) to meet USDA requirements; 4) preparation of FEMA Form 81-93; and 5) preparation of an environmental summary (ES). After the above work was completed, a packet with FEMA Form 81-93, the revised PER and the ES was reviewed approved by Nā Kupaʻa o Kūhiō in March 2009 and has since been submitted to USDA. As a result Nā Kupaʻa o Kūhiō funding has been awarded for several of the water system projects.

Descriptions of the individual water systems are included below:

Pi'ilani Mai Ke Kai Water Distribution System. The proposed Pi'ilani Mai Ke Kai Water Distribution System includes the construction of a potable water distribution system that would include 3,170 linear feet of distribution mains and laterals onsite as well as 518 linear feet of distribution mains offsite. To improve fire protection, five fire hydrants and ancillary piping is also required. Nā Kupaʻa o Kūhiō has requested funds in the form of loans and grants from the USDA-RD to develop these potable and fire protection water distribution systems, ultimately reducing development costs.

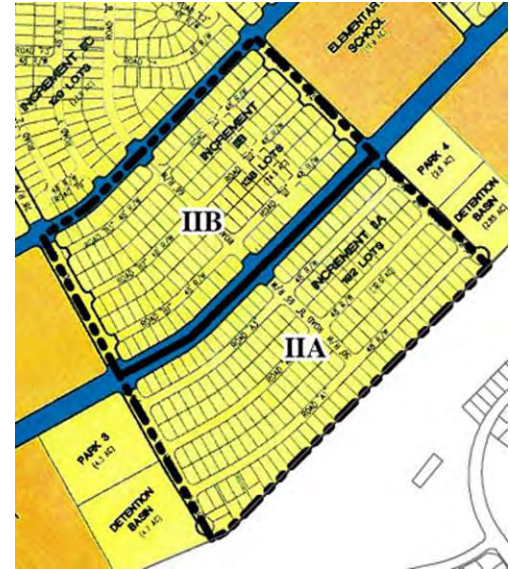


Kakaina Water Distribution System. The proposed Kakaina Water Distribution System included the construction of a potable water distribution system that would include 1,700 linear feet of water mains as well as connection to 50 individual water laterals. Nā Kupaʻa o Kūhiō has requested funds in the form of loans and grants from the USDA-RD to develop this distribution system, ultimately reducing development costs.

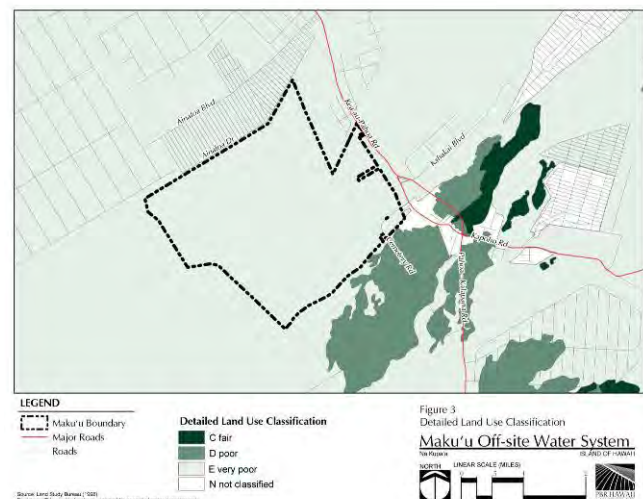


East Kapolei IIA Water Distribution System. The proposed East Kapolei IIA Water Distribution System includes the construction of a potable water distribution system that would include 7,192 linear feet of water mains as well as the installation of 89 water laterals. To improve fire protection, 23 fire hydrants and ancillary piping is also required. Nā Kupa'a o Kūhiō has requested funds in the form of loans and grants from the USDA-RD to develop these potable and fire protection water distribution systems, ultimately reducing development costs.

East Kapolei IIB Water Distribution System. The proposed East Kapolei IIB Water Distribution System includes the construction of a potable water distribution system that would include 8,840 linear feet of water mains as well as the installation of 809 water laterals. To improve fire protection, 24 fire hydrants and ancillary piping is also required. Nā Kupa'a o Kūhiō has requested funds in the form of loans and grants from the USDA-RD to develop these potable and fire protection water distribution systems, ultimately reducing development costs.



Maku'u Offsite Water System. To meet the needs of a community currently using rainwater catchment systems to collect drinking water, the proposed Maku'u Offsite Water System will include the construction and testing of an exploratory well. If tests indicate adequate capacity and quality, the project will also include conversion to a production well, construction of 1.0 million gallon reservoir, and installation of conveyance piping to existing distribution system. In support of this water system, the project will also require development of an access road, and appurtenant facilities such as booster pump, electrical transmission, electrical facilities, control building, chlorinator, drainage, fencing, etc. Nā Kupa'a o Kūhiō has requested funds in the form of loans and grants from the USDA-RD to develop these potable and fire protection water distribution systems, ultimately reducing development costs

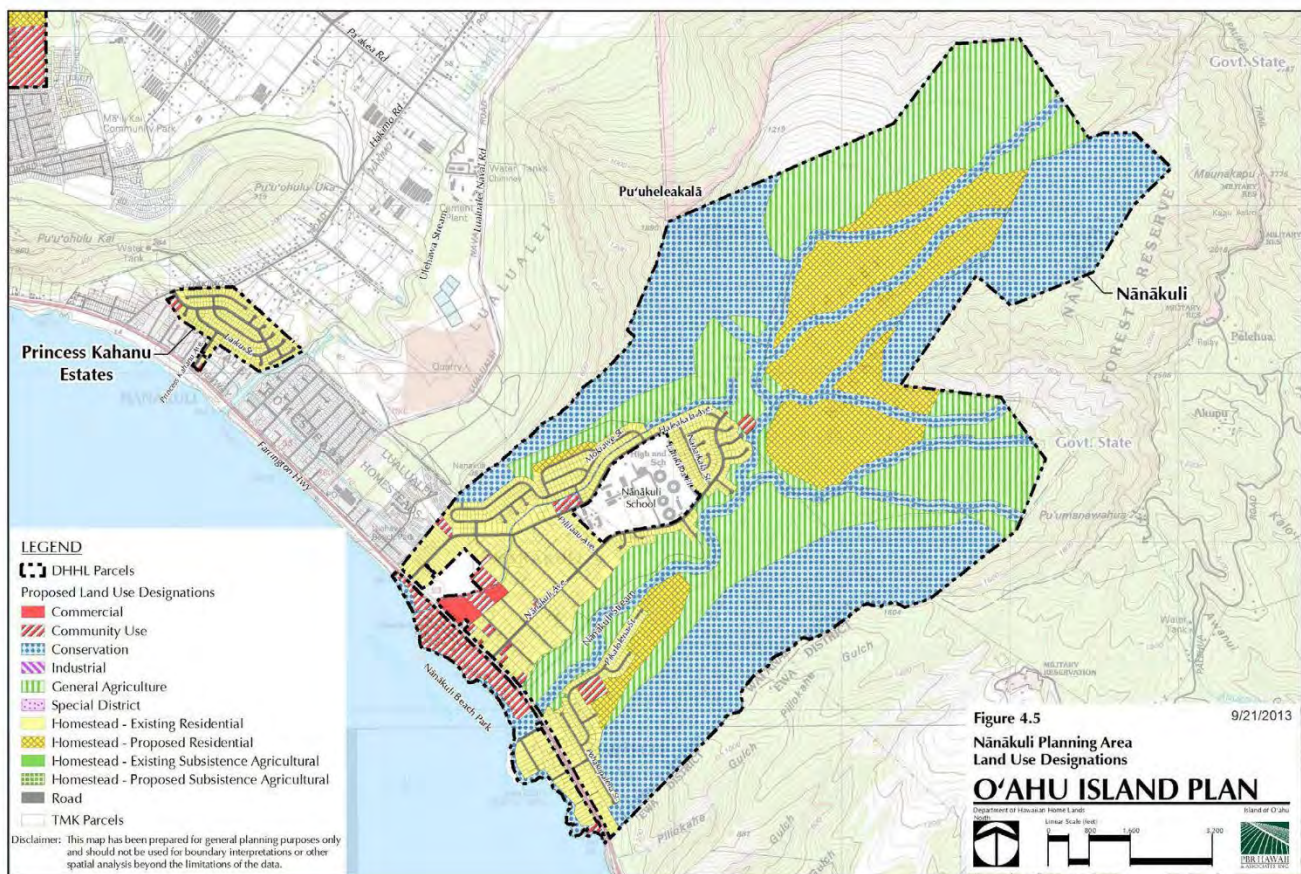


O'ahu Island Plan

PBR HAWAII prepared the O'ahu Island Plan (OIP) for the Department of Hawaiian Home Lands (DHHL). The goal of the OIP is to provide recommendations for the future uses of DHHL's lands on the island of O'ahu to: 1) meet beneficiary and department needs over the next 10 years; and 2) ensure coordinated, integrated, and orderly social, physical, cultural and economic growth and development.

In the development of the plan, PBR HAWAII used GIS as one of the tools for: 1) developing baseline data on demographics and preferences for the location of future homestead development; 2) determining land suitability and land use designations of DHHL parcels; and 3) identifying potential land acquisition areas.

DHHL's total land inventory on the island of O'ahu is approximately 7,000 acres, which is comparatively small compared to the other islands. Due to the limited land holdings and the large number of applicants looking for homesteading opportunities on O'ahu, the OIP synthesized the need for possible land acquisitions. This project was undertaken to meet Section 213(e) of the Hawaiian Homes Commission Act, authorizing planning studies to provide the basis for land use designations and appropriate land management strategies.

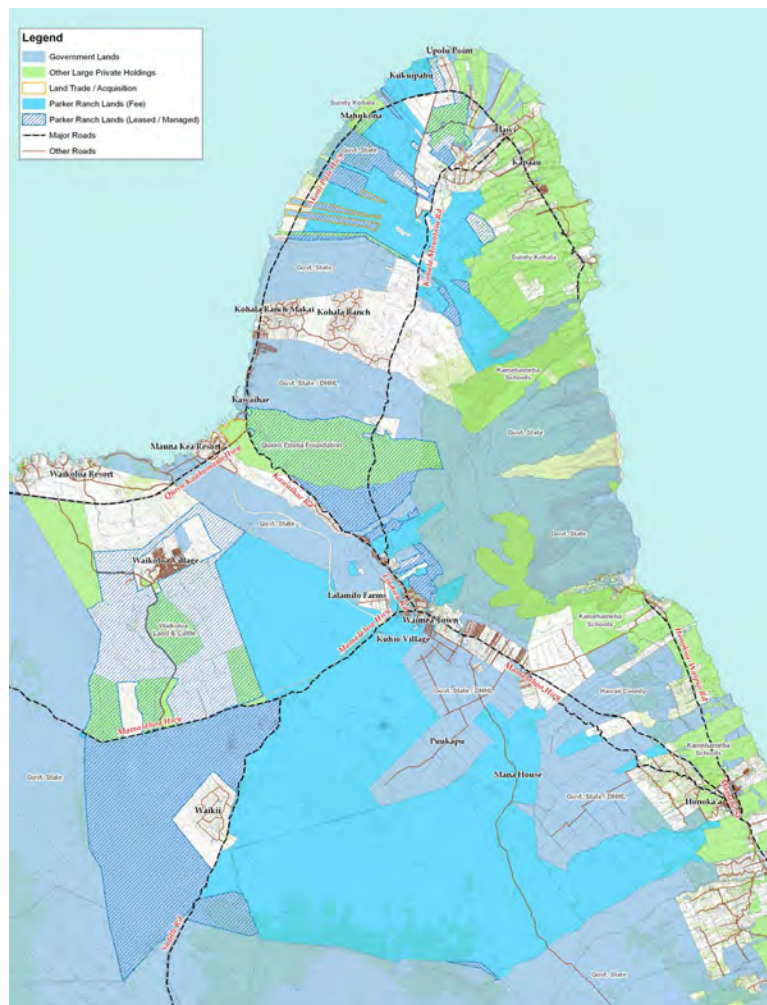


Parker Ranch Long Term Land Asset Management Plan, Hawai'i (geodatabase development and maintenance)

PBR HAWAII assisted Parker Ranch in preparing the long-term strategic management plan for its approximately 110,000 acres of land assets on the Island of Hawai'i. PBR HAWAII utilized the ESRI ArcView 10 to compile the resource information including public data and the client's private records into a private geodatabase. In this process, some of the paper-based data record/maps were verified and transferred into GIS compatible data format. A wide variety of planning data were ultimately converted into georeferenced GIS data layers and organized under the six categories: land ownership, regulatory, cultural and natural resources, infrastructure and topography, climate factors and ranching facilities.

The GIS database was created to support the planning team in conducting the land assessment based on Parker Ranch's land planning guiding principles and formulating an overall strategic plan to guide Parker Ranch in management of the Trust's assets.

PBR HAWAII also installed the geodatabase at Parker Ranch's headquarters, maintains the system, and updates the geodatabase periodically. The published Geodatabase is accessible enterprise-wide via the free ArcReader program. The geodatabase is used by Parker Ranch for its day-to-day land management decision making and strategic planning updates.



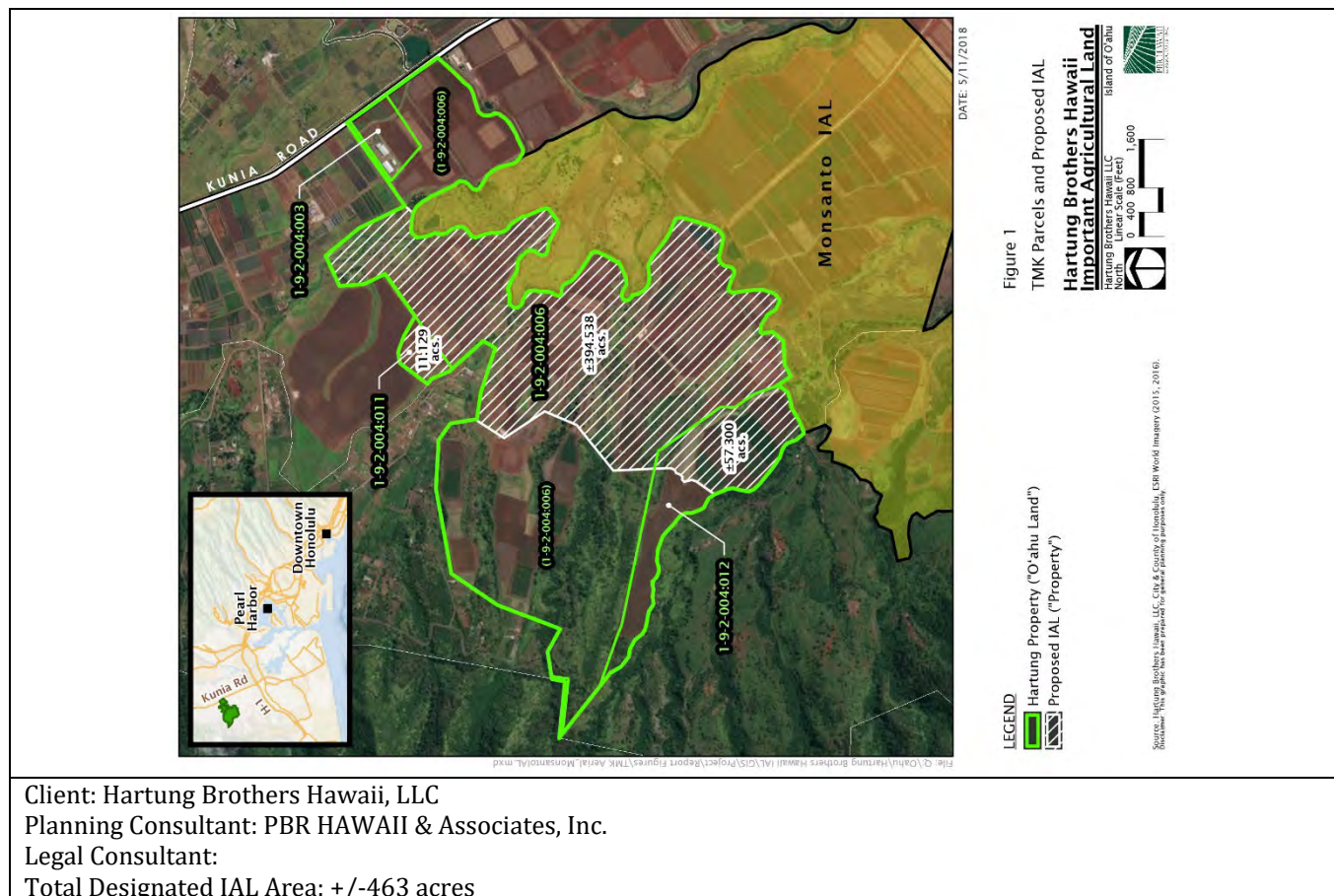
Assessment and Designation of Important Agricultural Lands (IAL)

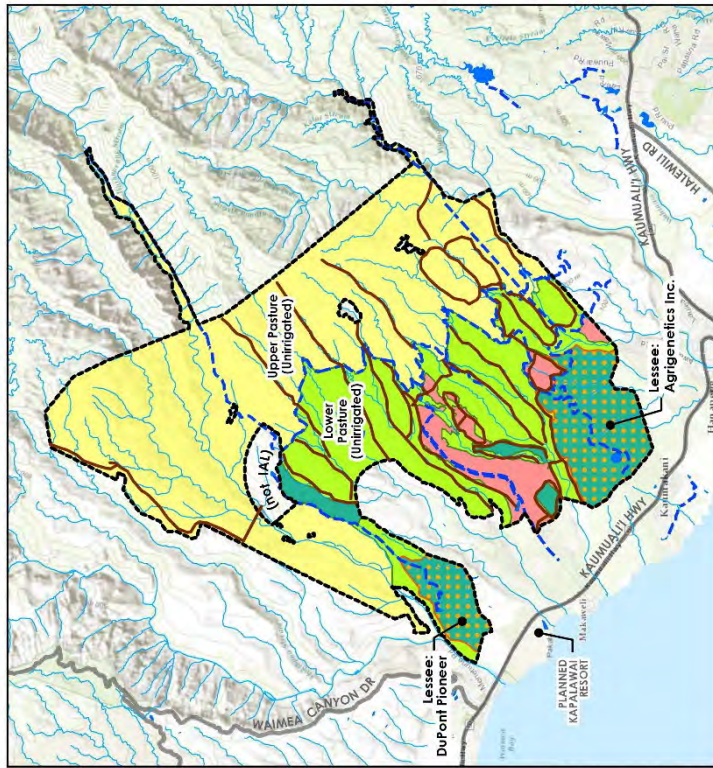
The Hawai'i Constitution (Article XI, Section 3) requires protection and preservation of agricultural lands, increasing agricultural self-sufficiency, and assuring the availability of agriculturally suitable lands. Two major pieces of legislation related to "Important Agricultural Land" (IAL) – Act 183 and Act 233 were passed in 2005 and 2008 which together set forth policies, guidelines and incentives regarding IAL.

PBR HAWAII uses GIS to assess and evaluate the designation of land as IAL for various large landowners throughout the State. As part of this process, PBR HAWAII creates GIS-based cartographic exhibits to evaluate various land attributes against the established criteria. These exhibits can then be used as part an "IAL petition" (prepared by an attorney) submitted to State Land Use Commission (LUC) to formally designate the lands as IAL.

Landowners that PBR HAWAII has assisted in designing their land as IAL include: Parker Ranch Inc. (Hawai'i), Alexander & Baldwin, Inc. (Maui and Kaua'i), Māhā'ulepū Farm LLC (Kaua'i), Grove Farm Company, Inc. (Kaua'i), Hā'upu Land Company LLC (Kaua'i), Kamehameha Schools (O'ahu and Kaua'i), Robinson Family Partners (Kaua'i), Monsanto Company (O'ahu), Hartung Brothers (O'ahu), and Kualoa Ranch (O'ahu). PBR HAWAII is currently assisting Kekaha Agriculture Association (Kaua'i). Using information prepared by PBR HAWAII, to date, the LUC has designated over 150,000 acres of these landowner's properties as IAL.

In addition, PBR HAWAII has prepared IAL assessments of other large and small land holdings throughout the State and assisted landowners with appropriate responses to ongoing or anticipated County planning for the designation of IAL.





Amended:
7/27/2016

Figure 2b

Makaweli Ranch Operation

Robinson Family IAL



LEGEND
 Proposed IAL Boundary
 Leased Land
 Pasture Fence
 Streams
 Canals/Ditches
 Lakes/Reservoirs

Ranch Operation	Approximate Area (in acres)
Upper Pasture (year round breeding)	11,940
Lower Pasture (unirrigated)	5,255
Lower Pasture (irrigated)	400
Lower Pasture (potential irrigated)	1,105
Total:	18,700

Source: Robinson Family Partners, Inc. (2014). County of Kauai. Boundaries. This map has been prepared by PBR Hawaii & Associates, Inc.

Client: Robinson Family Partners
 Planning Consultant: PBR HAWAII & Associates, Inc.
 Legal Consultant:
 Total Designated IAL Area: +/-20,888 acres (Kaua'i)

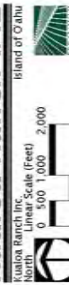


DATE: 6/26/2018

Figure 3

Topography and Streams

Kualoa Ranch IAL



LEGEND

Proposed IAL ("Property")	Slope in Kualoa Ranch's Land
Pond / Marsh	Less than 10%
Stream / Gulch	10 - 20%
100-Ft Contours	20 - 25%
	Greater than 25%

Source: N/A (2014). County of Honolulu (2014). State of Hawaii (2008). USGS (2011). Boundaries. This map has been prepared by PBR Hawaii & Associates, Inc.

Client: Kualoa Ranch
 Planning Consultant: PBR HAWAII & Associates, Inc.
 Legal Consultant:
 Total Designated IAL Area: +/-762 acres

NEPA Compliance Documentation for CCTV Projects, O'ahu

PBR HAWAII prepared National Environmental Policy Act (NEPA) Compliance Documentation for the City and County of Honolulu Department of Transportation Services as part of an ongoing federal-aid program designed to reduce traffic congestion on the island of O'ahu through the application of technology in the operations of the City and County of Honolulu's traffic signal system.

The federal aid program expanded the existing Closed Circuit Television (CCTV) traffic surveillance and traffic signal monitoring capabilities in the Honolulu Traffic Control Center to the Kāne'ohe, Kailua, Makakilo, Kapolei and 'Ewa areas. It also included the installation of back-up power system at the traffic control center.

The primary project deliverable prepared by PBR HAWAII was assessment, documentation, and consolidation of data as required for a categorical exclusion for each geographic region.

The documentation packets included coordination with various Federal, State, and County agencies. This included: 1) coordination with agencies such as the Department of Army-Corps of Engineers (ACOE), US Fish and Wildlife, State Historic Preservation Office, State Office of Planning, County Department of Planning and Permitting; and 2) development of GIS graphics to ensure the project met the federal requirements for a categorical exclusion. In the Kailua/Kāne'ohe geographical region, the project also included an ACOE nationwide permit application and SMA exclusion prepared by PBR HAWAII.

