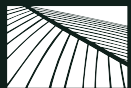


Response to Notice to Providers of Professional Services  
Fiscal Year 2024

# Computer Engineering (GIS Mapping/Programming Services)

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

Submitted by:



**PBR HAWAII**  
& ASSOCIATES, INC.

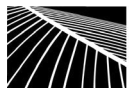
**June 2023**

Response to Notice to Providers of Professional Services  
Fiscal Year 2024

# **Computer Engineering (GIS Mapping/Programming Services)**

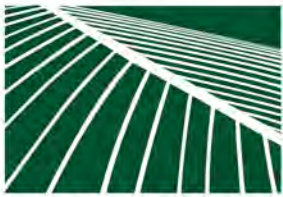
**Submitted to:**  
Department of Information Technology  
County of Hawai'i

**Submitted by:**



**PBR HAWAII**  
& ASSOCIATES, INC.

**June 2023**



**PBR HAWAII**  
& ASSOCIATES, INC.

June 29, 2023

Via Email: [lan.akau@hawaiiicounty.gov](mailto:lan.akau@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  
*Principal*

RAYMOND T. HIGA, ASLA  
*Associate Principal*

MARC SHIMATSU, 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*

MICAH McMILLEN, ASLA, LEED® AP  
*Senior Associate*

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*

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 2024**

Dear Mr. Ewbank:

In response to the "Notice to Providers of Professional Services for FY2024," PBR HAWAII is pleased to present the attached Letter of Interest for the following service:

**DS.1: 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

P321797-1 LTR

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

*printed on recycled paper*

# Firm Background

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

**PBR HAWAII & Associates, Inc.** is a multi-disciplinary firm based in Hawai'i for 53 years. We have a staff of 37 dedicated individuals, most of whom are accredited by professional organizations in their respective fields. PBR HAWAII has six licensed landscape architects, four certified planners (AICP), and five LEED® Accredited Professionals (LEED APs).

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](mailto: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 53 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 37 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

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## ***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 over 20 years 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, and educational facilities, and park master plans.

On Kaua‘i, Ms. Yuen worked closely with the County on the Līhu‘e Town Core Urban Design Plan, which won County Council approval in March 2010 and is the basis of a \$13 million TIGER grant awarded to the County to implement the plan. She also completed the update of the South Kaua‘i Community Plan in July 2015, which integrates long-range land use planning and transportation networks with a focus on creating sustainable, resilient communities. Her current projects include the Honolulu Harbor Master Plan, Maui Zoning Code (Title 19) Rewrite, and Waimea 400 Master Plan.

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. She is actively involved in several professional organizations including the American Planning Association Hawai‘i Chapter, for which she has been President, Vice President, and the APA/DURP Liaison. She is a member of the Urban Land Institute Management Committee, Lambda Alpha International Aloha Chapter Membership Chair, and a Board Member of the Hawai‘i Tourism Authority for the State of Hawai‘i for which she chaired the Strategic Plan Investigative Committee. She is also a member of the University of Hawai‘i Department of Urban and Regional Planning (DURP) Professional Council.



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#### **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,  
Hawai‘i Chapter Vice President, 2011-2015  
Hawai‘i Chapter APA/DURP Liaison  
Lambda Alpha International-Aloha Chapter  
Vice President; Past Membership Chair  
Urban Land Institute Hawai‘i District Council  
Management Committee  
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 Department of Urban and Regional  
Planning 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.



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**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 planning projects and land planning studies. Her planning and cartographic skills provides a valuable contribution to all levels of planning projects. In particular, her experience with GIS, including ArcGIS, aids the multi-disciplinary team in preparation of maps and planning documents. Current projects include support to the flood vulnerability assessment for Department of Land and Natural Resources (O'ahu completed, Maui and Hawai'i islands to start in last quarter of 2018) and GIS data development for Department of Hawaiian Home Lands land inventory and license inventory. Past projects of note include: the Statewide Inventory of Stream Channel Alterations for the Commission on Water Resource Management; and the State Civil Defense Emergency Warning Sirens Inventory.



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#### **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



## 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.



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#### 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 Beheshiti University

#### PROFESSIONAL AFFILIATIONS

American Planning Association  
Member

# Client References

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

Joseph Dane  
Chun Kerr LLP  
Hartung Brothers Hawaii  
Phone: (808) 528-8234

Jesse Colandrea  
Department of Land and Natural Resources  
Phone: (808) 587-0277

Jaime Nakao  
Kamehameha Schools  
Phone: (808) 541-5355

Scott Meidell  
Haleakalā Ranch Company  
Phone: (808) 572-7288

David Hinazumi  
Grove Farm Properties, Inc.  
Phone: (808) 245-3678



# Relevant Project Experience

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## ***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.

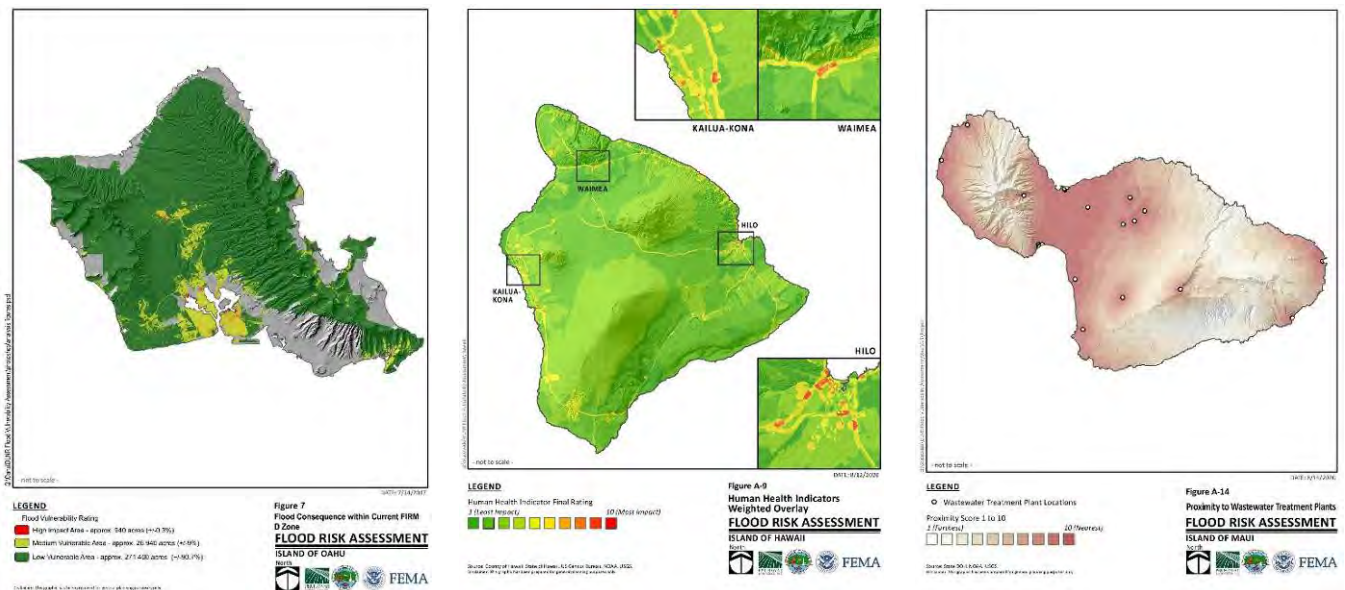
Deliverables were provided to DHHL in a geodatabase format, PDF/JPG maps, and Excel spreadsheets.

## Flood Vulnerability Assessment Report, Statewide

PBR HAWAII prepared the O'ahu, Hawai'i, and Maui Island Flood Vulnerability Assessment Reports and has been selected to prepare the 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 paired 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 are being done in GIS using publicly available GIS data, including a building footprint GIS layer for O'ahu and Maui.



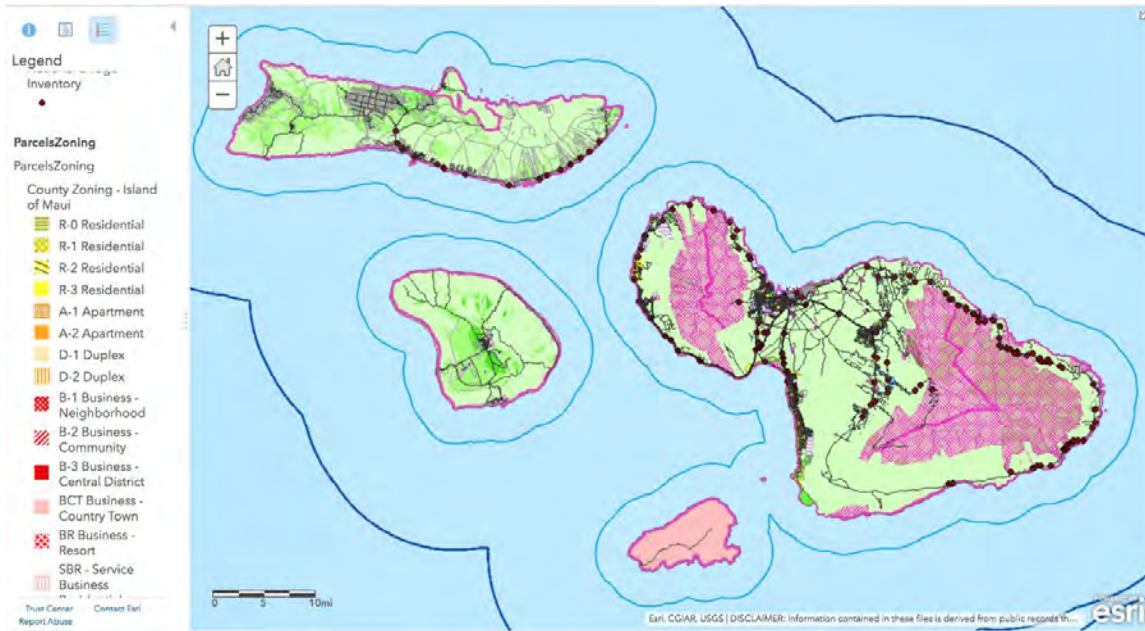
## Kamehameha Schools Statewide Internal GIS Datasets

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).

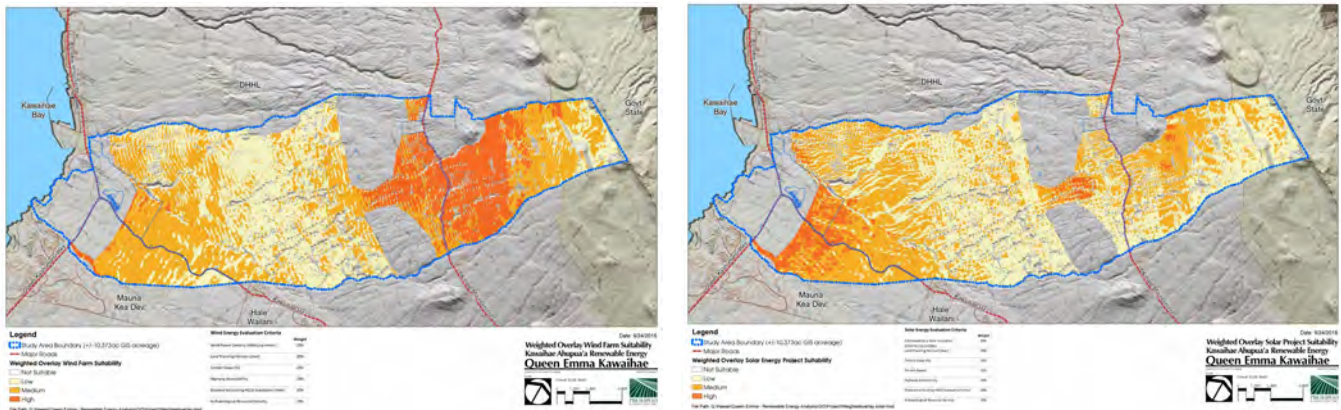
Using existing parcels of record/tax map key parcels information, PBR HAWAII: 1) inventoried existing agricultural infrastructure; and 2) prepared plans for the consolidation and re-subdivision of the parcels, which included allocations of allowable agricultural lots that could be subdivided within the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

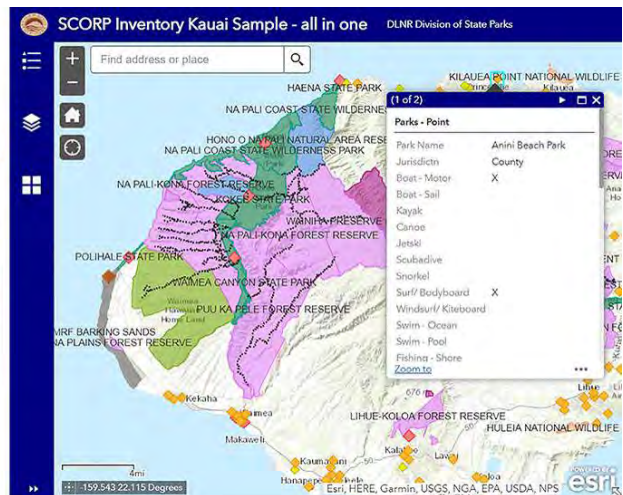
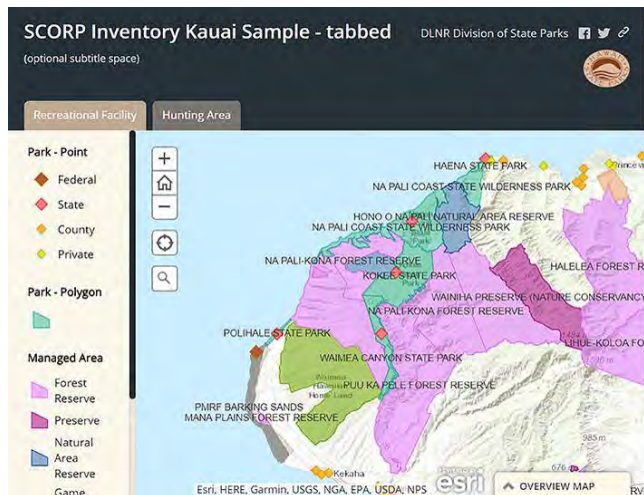
Under this planning effort, PBR HAWAII utilized the GIS advanced analyst tools to provide a more detailed site assessment related to renewable energy resources and land planning rationale to identify various alternatives for the interim or long-term use of portions of these lands for renewable energy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



## State Comprehensive Outdoor Recreation Plan Update, Statewide

PBR HAWAII is supporting the Department of Land and Natural Resources State Parks Division with an update to the State Comprehensive Outdoor Recreation Plan (SCORP). PBR HAWAII prepared the 2003, 2008, and 2015 updates. The work involves 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.

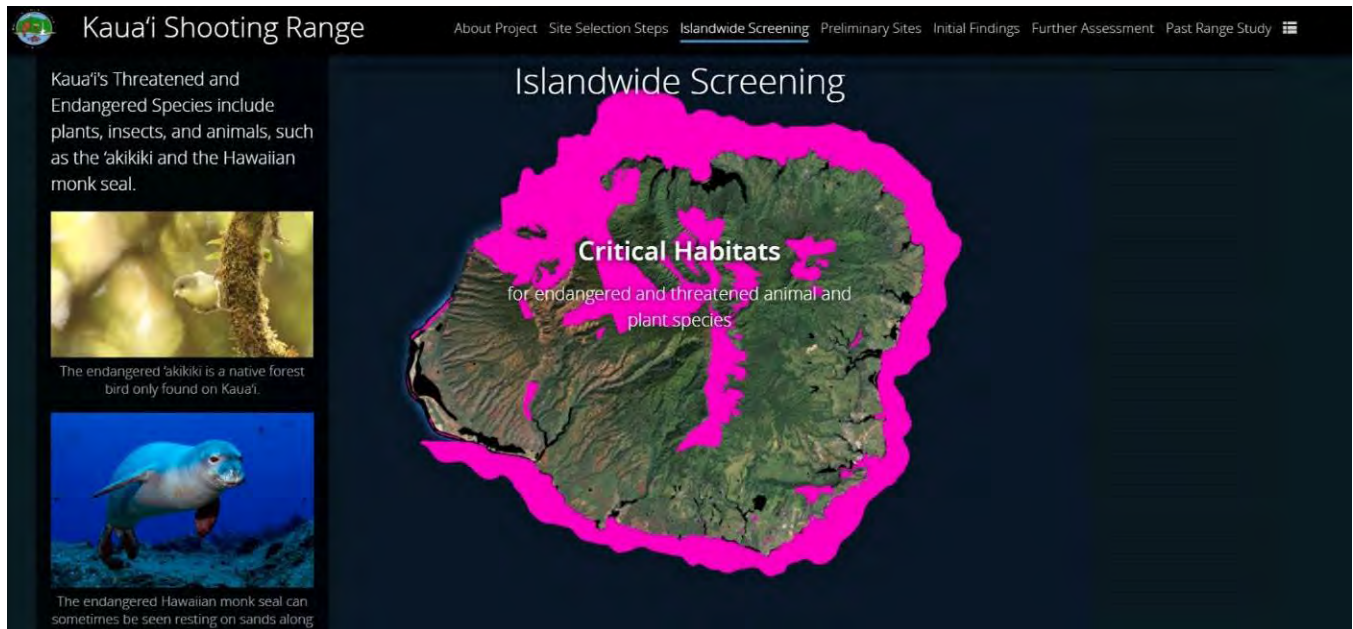
PBR HAWAII utilized ArcGIS and Excel to develop and update the recreational inventory database and GIS maps. For the 2021 update, in response to the population's growing use of technology for communications, PBR HAWAII is offering a web-based map format in addition to hard copy and PDF formats. Two types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

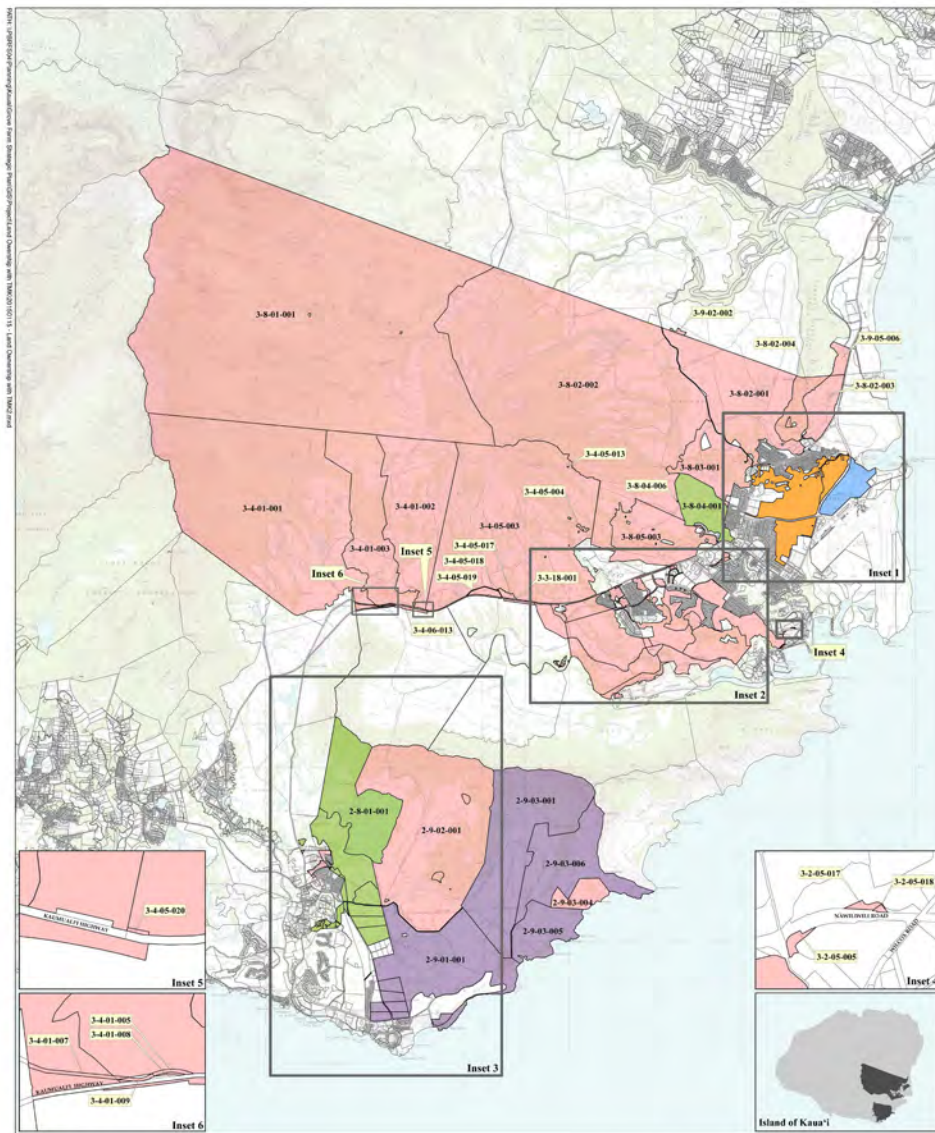
PBR HAWAII also assisted Haleakalā Ranch with the Ranch's on-going strategic land asset management plan focusing on a Water Resource Management Plan. The goal is to integrate the Ranch's land asset planning efforts and the long-term water resource management and development plan. In support of formulating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

# Grove Farm Strategic Land Plan, Kaua'i (geodatabase development and maintenance)

PBR HAWAII provides Grove Farm with a wide range of services to support the ongoing development and implementation of their strategic plan for their lands on Kaua'i.

To support Grove Farm's ongoing management of their lands, PBR HAWAII developed a GIS database for their land holdings and continues to update and maintain the database as new information becomes available, such as topo surveys, photographs, infrastructure related resources, and lease information.

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.



- LEGEND**
- Grove Farm
  - Visionary LLC
  - Haili Moe
  - Haupu
  - Mahā'ulepū Farm

**Land Ownership Map**  
 Grove Farm Land Company  
 Island of Kaua'i  
 5/15/2015

North  
 Linear Scale (feet)  
 0 1,000 2,000 4,000 10,000

## 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.

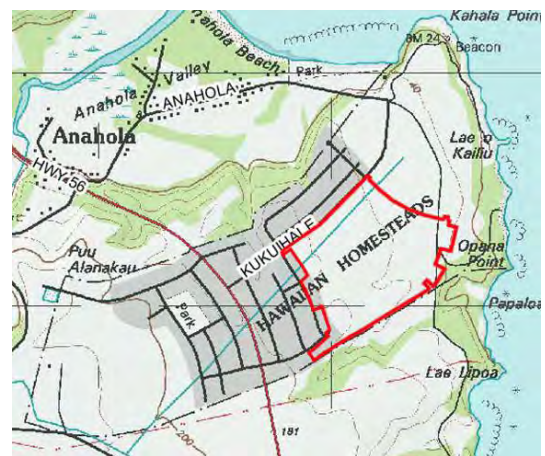
Working with Nā Kupa‘a o Kūhiō to further DHHL’s objectives, and in support of Nā Kupa‘a o Kūhiō’s submittal to United States Department of Agriculture-Rural Development (USDA-RD) for NEPA Compliance with 7 CFR 1794, PBR HAWAII prepared and consolidated environmental and engineering documentation for 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 Kupa‘a o Kūhiō in March 2009 and has since been submitted to USDA. As a result Nā Kupa‘a o Kūhiō funding has been awarded for several of the water system projects.

Descriptions of the individual water systems are included below:

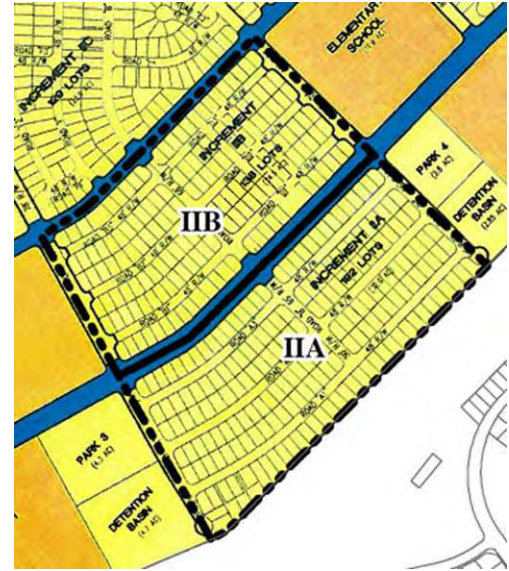
***Pi‘ilani Mai Ke Kai Water Distribution System.*** The proposed Pi‘ilani Mai Ke Kai Water Distribution System includes the construction of a potable water distribution system that would include 3,170 linear feet of distribution mains and laterals onsite as well as 518 linear feet of distribution mains offsite. To improve fire protection, five fire hydrants and ancillary piping is also required. Nā 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.



***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 Kupa‘a 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.

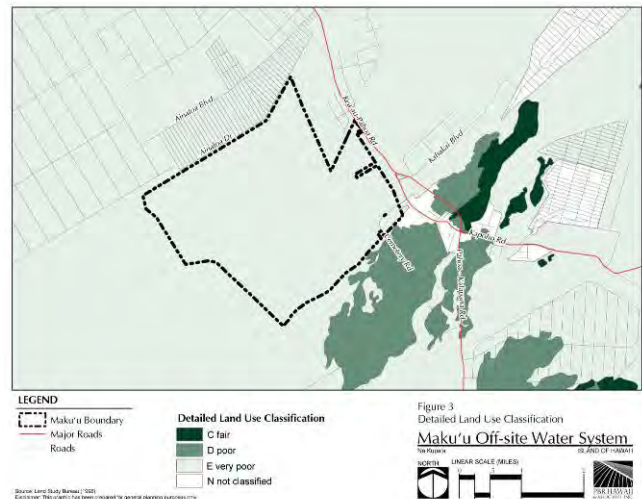


**East Kapolei IIA Water Distribution System.** The proposed East Kapolei IIA Water Distribution System includes the construction of a potable water distribution system that would include 7,192 linear feet of water mains as well as the installation of 89 water laterals. To improve fire protection, 23 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

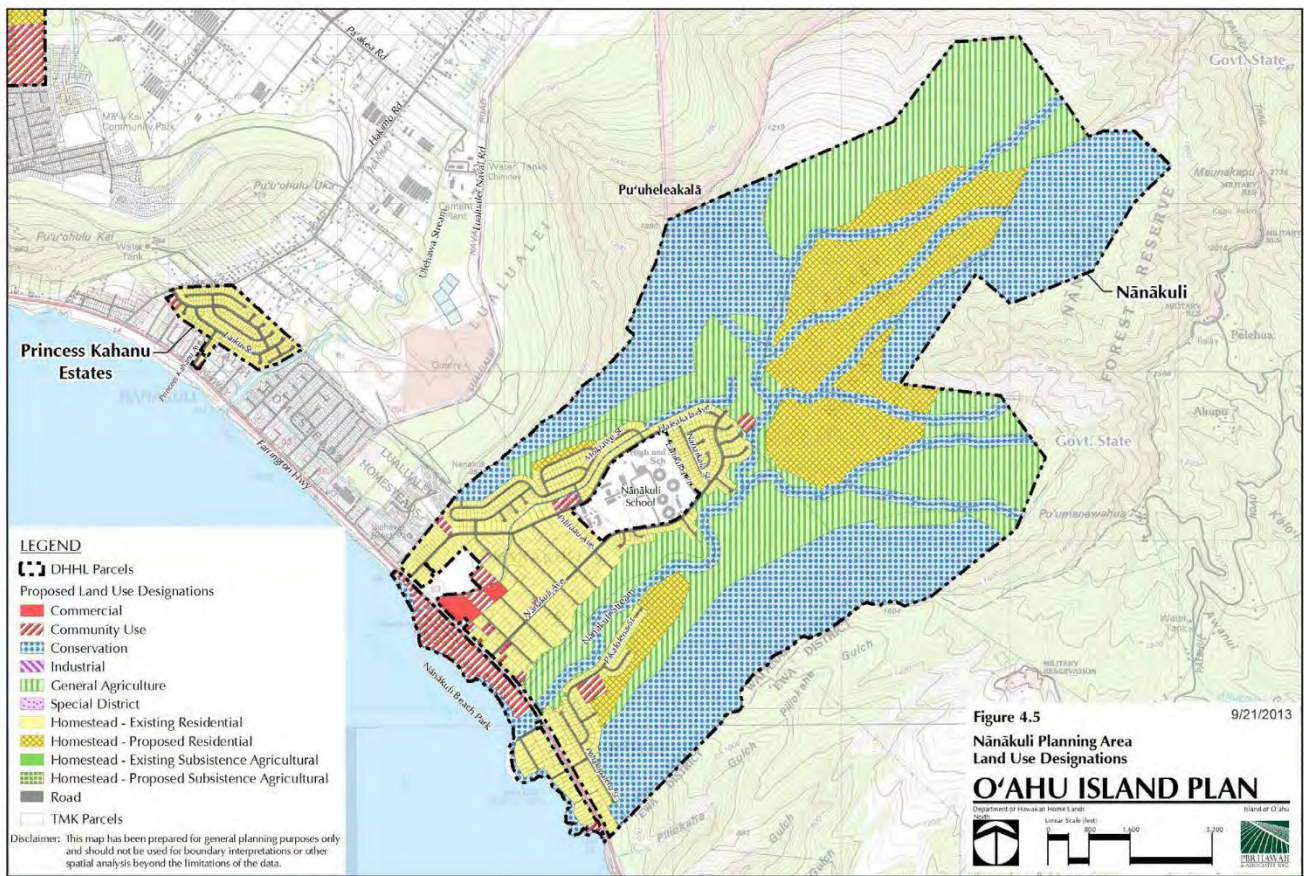


# O'ahu Island Plan

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.





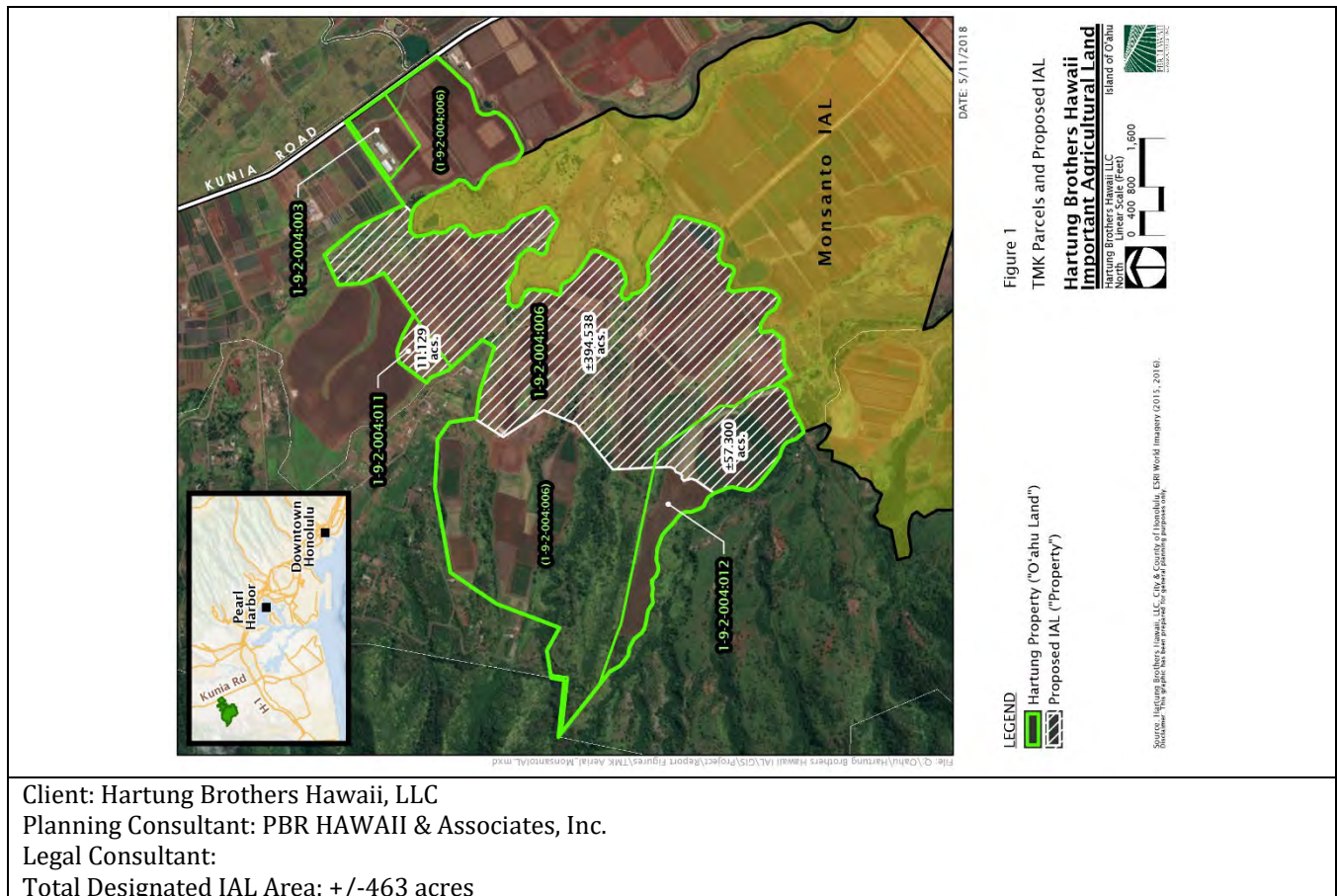
## Assessment and Designation of Important Agricultural Lands (IAL)

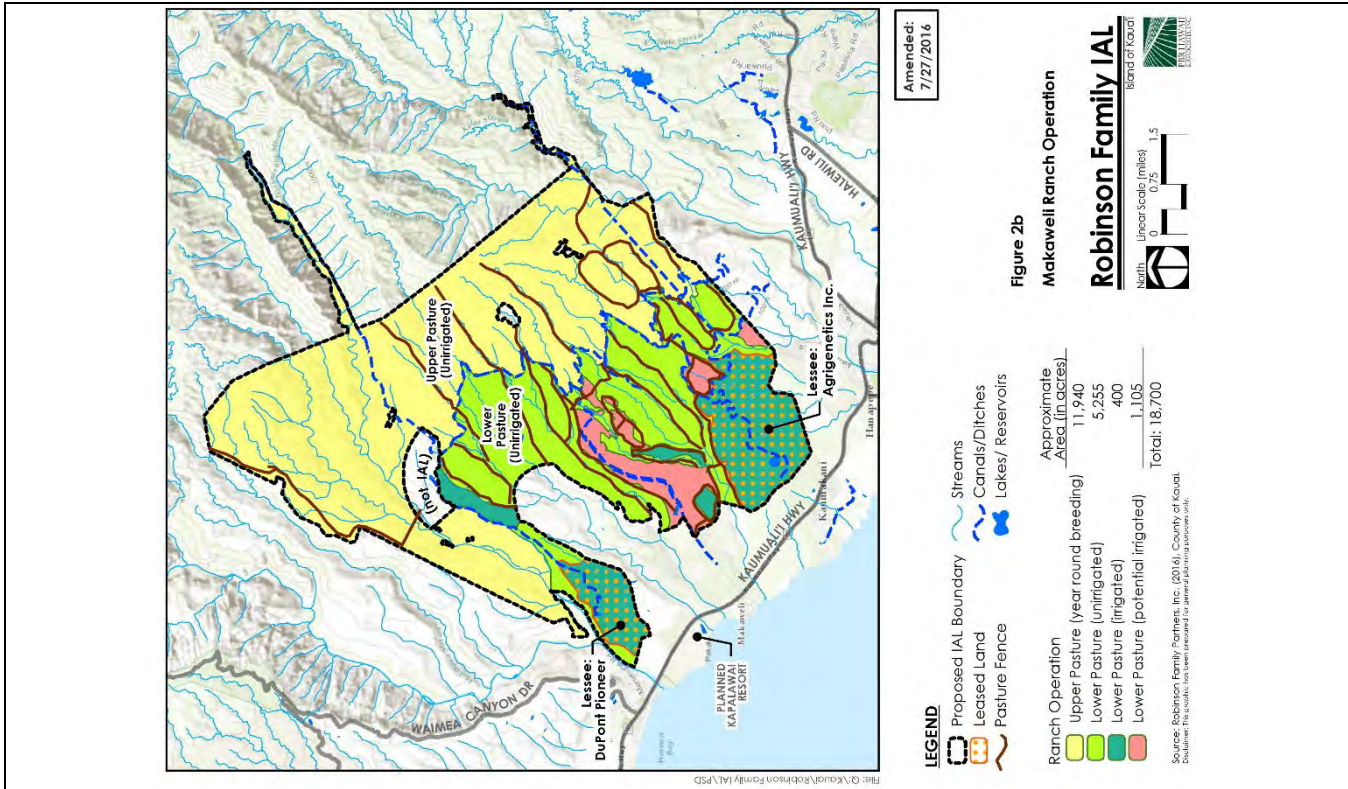
The Hawai'i Constitution (Article XI, Section 3) requires protection and preservation of agricultural lands, increasing agricultural self-sufficiency, and assuring the availability of agriculturally suitable lands. Two major pieces of legislation related to "Important Agricultural Land" (IAL) – Act 183 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.

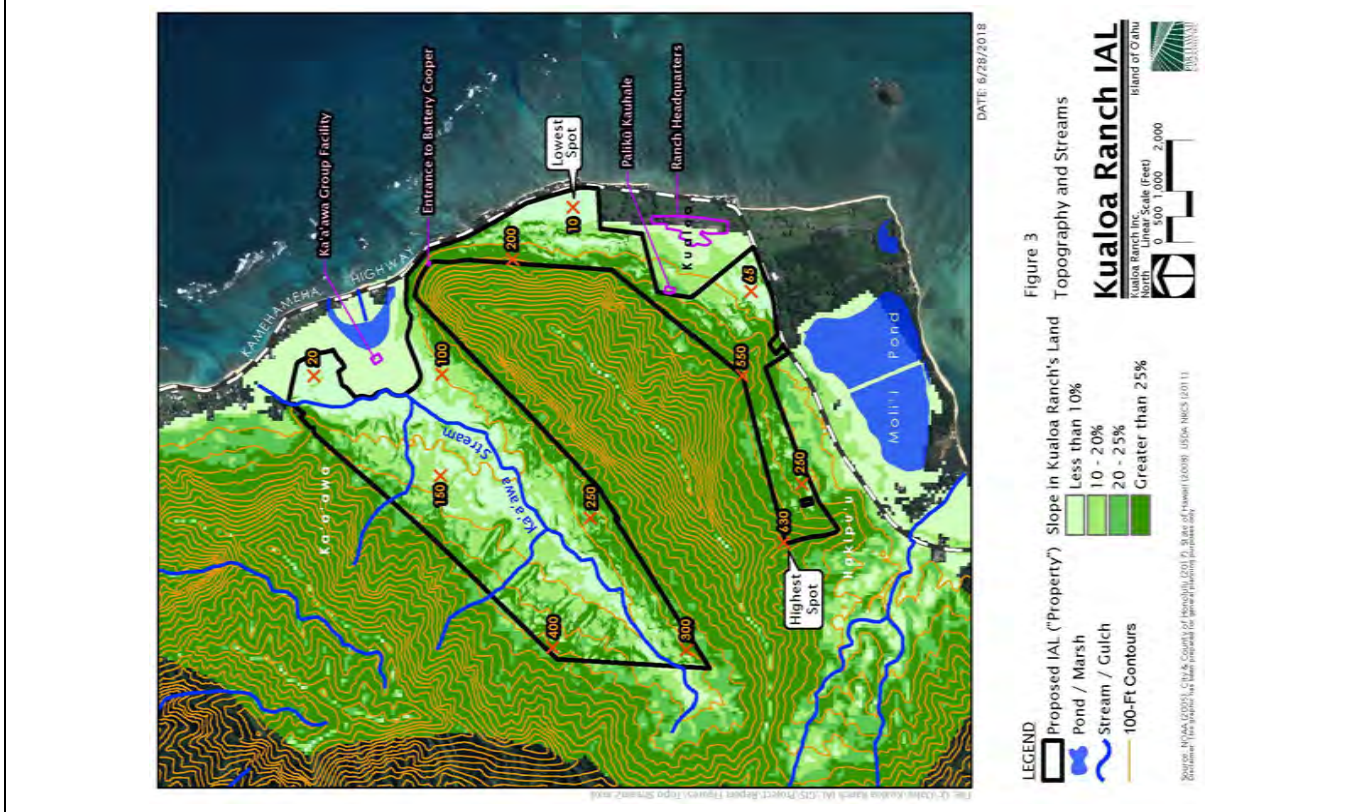
Landowners that PBR HAWAII has assisted in designing their land as IAL include: Parker Ranch Inc. (Hawai'i), Alexander & Baldwin, Inc. (Maui and Kaua'i), Māhā'ulepū Farm LLC (Kaua'i), Grove Farm Company, Inc.(Kaua'i), Hā'upu Land Company LLC (Kaua'i), Kamehameha Schools (O'ahu and Kaua'i), Robinson Family 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.

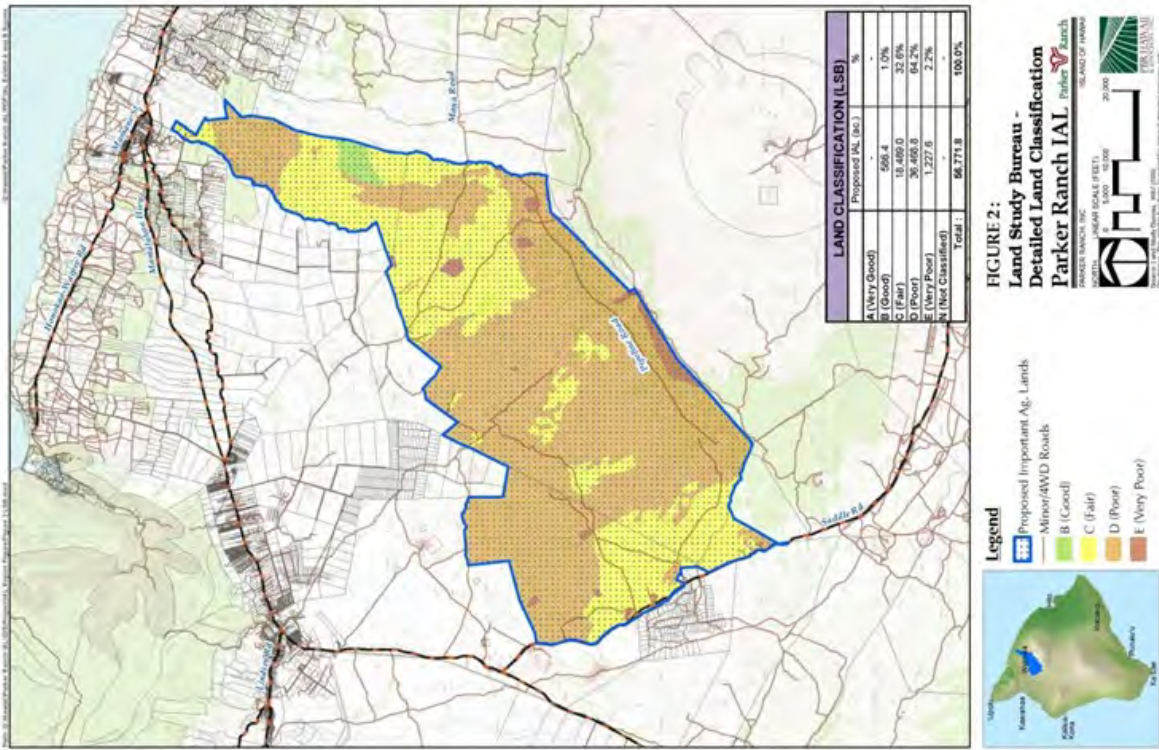




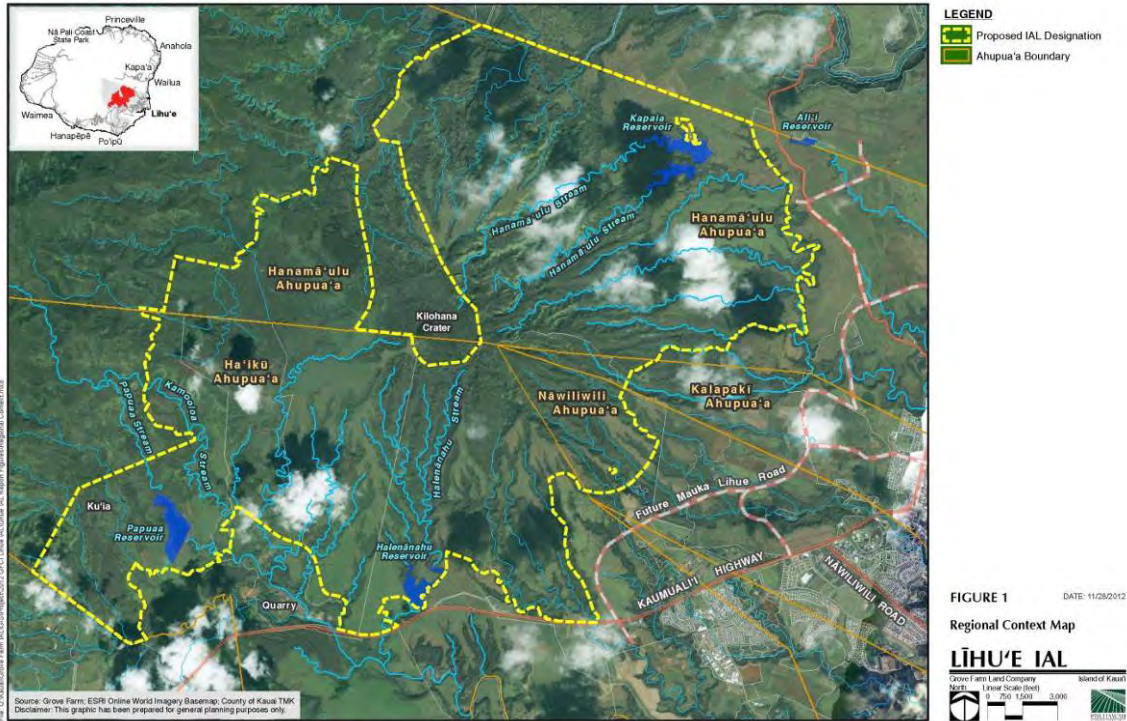
Client: Robinson Family Partners  
 Planning Consultant: PBR HAWAII & Associates, Inc.  
 Legal Consultant:  
 Total Designated IAL Area: +/-20,888 acres (Kauai)



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



Client: Parker Ranch Inc.  
 Planning Consultant: PBR HAWAII & Associates, Inc.  
 Legal Consultant:  
 Total Designated IAL Area: +/-56,771 acres



Client: Grove Farm Company, Inc.  
 Planning Consultant: PBR HAWAII & Associates, Inc.  
 Legal Consultant:  
 Total Designated IAL Area: +/-10,266 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'ohē, 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'ohē geographical region, the project also included an ACOE nationwide permit application and SMA exclusion prepared by PBR HAWAII.

