BRIAN E. QUINN MS MIEEE

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Experienced and skilled manager, team leader, facilitator and professional adviser, who works closely with designers, architects, engineers, finance professionals, executives and clients to create successful projects and value. He brings international, technical management and marketing engineering experience and 25+ years industry, consulting and contracting experience with start-ups, corporations and commercial clients, in the fields of renewable energy projects and technology, sustainability strategy and master-planning, low carbon building design, and industrial power systems. Experience includes project planning, financial modeling, value engineering; innovation, pilot project implementation and rollout program management; marketing communications for multi-million dollar projects and sustainability initiatives. Expertise in energy conversion technologies, energy efficiency, carbon emissions abatement, product commercialization, and energy project engineering ranging from kilowatts to gigawatts, and from concept development, design management, systems engineering, product/project development and deployment, to marketing collateral and customer communications.

EXPERIENCE & RESULTS

Senior Director of Engineering, 174 Power Global

Apr. 2020 - present

Utility Energy Project Development & Asset Management

- Leadership and development of in-house project engineering capability, team, tools and processes.
- Technical oversight of solar PV and energy storage projects to 1000 MW / 1000 MWh.
- Support operations and asset management functions on technical issues and plant performance.

Director of Engineering & Quality, Exyte Energy Inc., Chandler, AZ

Jan. 2017 - Apr. 2020

EPC Contractor - Utility Distributed Generation, Community Solar, Energy Storage Projects

- Design, development, project engineering for portfolios of community solar projects each of 250 1000 kW
- Design, development, project engineering for utility and distributed generation projects 1 100 MW
- Evaluation of energy technologies, especially solar photovoltaic, power conversion, battery energy storage
- Development of process/tool for major equipment evaluation and selection of preferred products and vendors.
- Final completion and close out of 150 MW of utility DG & community solar projects

Director Development Engineering, NRG Inc., Scottsdale, AZ

2013 - 2016

Commercial & Utility Renewable Energy Project Development & Acquisition

- Responsible for development engineering for distributed and utility solar project opportunities, solar-wind-diesel hybrid and mini-grid energy projects, and project acquisition due diligence.
- Leadership and management of functional group responsible for project engineering activities from initial site review through conceptual engineering and independent engineering review for project financing;
- Oversee distributed generation projects, including building integrated, commercial rooftop, elevated structures, and ground mounted systems, and moving them from conception through completion; developing optimum site layouts, system designs, and selecting equipment to maximize performance and minimize construction and operational costs;
- Managing and evaluating project generation expectations through solar resource assessment and performance modeling
 of plant capacity and long term degradation;
- Developing detailed project procurement and construction estimates and providing technical inputs for financial modeling and tax evaluation; negotiating engineering, procurement, and construction contracts and development of technical exhibits and other project documents;
- Leading technical due diligence reviews of project acquisition opportunities; managing and reviewing independent
 engineering reports and other technical information to support project financing; supporting due diligence on emerging
 energy conversion and conservation technologies;
- Representing NRG Energy in investment and procurement negotiations with clients, project developers, suppliers, consultants, utilities and regulatory authorities. Providing technical management of multi-site solar programs.
- Recruiting, managing, developing a team of engineers, analysts and architects providing design, production forecasts, development support and acquisition diligence for commercial and utility PV projects, from <1 MW to >100 MW.
- Collaborating with Asset Management, O&M, Procurement, Contracting teams to achieve life cycle cost savings thro' standardization across applications / market segments, enabling focused spending & improved leverage in negotiations.

Vice-President Business Development, CPV start-up/University technology spin-out, Tucson, AZ

Technology start-up – 1000x concentration solar PV generator for industrial/utility applications

2011–2012

Developed plan for product commercialization, market entry, product performance validation; reference plant designs;
 project/product cost models; carried out competitor/market analyses, value engineering, contract document reviews.

BRIAN QUINN PAGE 2

Defined market requirements and attributes for a novel 1200x CPV system with large primary mirror optics, and multijunction cells in a dense array receiver; developed project and product financial models; carried out competitor and market analyses, value engineering, PPA and lease reviews.

Supported successful Series A funding to take proof of concept to full-scale prototype, initiate design for manufacture.

Technical Operations Director, Stirling Energy Systems Inc., London, UK, and Scottsdale, AZ

Solar thermal technology (CSP) & Utility-scale project development

- Technology leadership and marketing engineering role reporting to VP Business Development, transferred to Scottsdale HQ (from UK) to reinforce project finance campaign via independent engineer, investor and regulatory engagement.
- Became the 'go to' person and represented SES for all critical technology issues and external technical and marketing communications; managed virtual data room and technical DD information exchange with IE's, insurers, investors, etc.
- Steered technology validation through multiple IE reviews for project / corporate financing; supported permitting of 1.5 GW of projects in CA, TX, & overseas; provided 'Voice of the Customer' for international product development.

Head of Energy & Sustainability, Hilson Moran Partnership, London, UK

2003-2008

Engineering & environmental consultancy for investment quality real estate development

- Management team member; Established, hired, and developed a multi-national specialist team of subject matter experts; established company credentials and built reputation; increased annual revenue by >\$2M from new and existing clients.
- Facilitated executive-level workshops; presented at green building events; supported permitting applications.
- Directed energy / emission reduction strategies for 20,000,000 sq.ft. of prestige, high-rise commercial developments.

Various project & technical management roles, <u>BP Solar</u>, London, UK and Madrid, Spain Renewable energy business unit of BP Plc.

1997-2003

- Technical lead for BP's strategic brand repositioning program: led development and design for three generations of commercial rooftop and building integrated PV, realizing an 80% reduction in non-panel installed costs over four years.
- Developed a cost effective, building integrated PV overhead glazing system, deployed on 200+ sites worldwide.
- Researched, developed and produced design guides and training films; established safety management framework.
- Exceeded ambitious cost savings targets, with 100% safety record, by diverse teams with no previous experience.
- Enabled rapid program rollout: 5 MW on 400 sites across 5 continents; cut emissions by 5 million kg CO2/year.

 $\textbf{Electrical Engineer} - \underline{\textbf{Raytheon E\&C}}; \underline{\textbf{Single Buoy Moorings}}; \underline{\textbf{Humphreys \& Glasgow}}; \underline{\textbf{Stone \& Webster}}. \underline{\textbf{Early career}}$

■ Industrial power systems engineering, plant design and protection for offshore / energy / process / bio-tech facilities

QUALIFICATIONS

MS Energy & Built Environment, Cranfield University. Energy engineering, architecture, policy. Thesis: Fuel Cell CHP BS Electrical Engineering Science, University of Salford. (Power & Machines specialization)

IEEE Member Power Engineering Society & Industry Applications Society; US Permanent Resident; UK/EU passport; clean driving license; rusty/conversational Spanish, French, German.

JON WALLENSTROM ALAKA'I DEVELOPMENT

linkedin.com/in/jon-wallenstrom

Jon Wallenstrom is a principal with Alaka'i Development (AD) where he and his partner, Cayenne Pe'a, are focused on creating a better and smarter Hawaii through innovative development. AD is advancing a 318-unit apartment community at Ho'opili in a partnership with the Reinsurance Group of America (ReCap), a Fortune 250 company. The community will be Jon's second, class-A apartment community on Oahu. Alaka'i is also advancing a mixed-use apartment community in Kakaako, 690 Pohukaina, on the Island of Oahu. 690 Pohukaina is a mixed-use project that will implement rental housing with a significant non-residential use. In addition to developing 690 Pohukaina, AD has built Manawalea Road for the State of Hawaii a much-needed connector road which is providing significantly improved access to the people of Kona.

Prior to forming AD, Jon Wallenstrom was the President of Forest City Hawaii and lead the company's efforts on several fronts. Forest City developed a 499-unit apartment project on the island of Oahu in Kapolei. The \$147M apartment community, Kapolei Lofts, is the first class-A apartment project that has been built in the State and provides sorely needed affordable and market-rate housing. Kapolei Lofts integrates a 2.8 Megawatt photovoltaic system that generates more than half of the energy used by residents. Kapolei Lofts recently sold to Blackstone for approximately \$197M. In addition to traditional development, Forest City placed in service six of the largest solar energy projects in the State. The first photovoltaic facility is an adaptive reuse of a brownfield which is providing clean renewable energy to the people of Hawaii.

Jon served as managing member in Forest City's Hawaii-based partnership with the Department of the Navy. Three of the four phases closed under Jon's tenure and the project's size quadrupled to approximately One Billion Seven Hundred Million (\$1,700,000,000) under development. The now-complete development was conducted on a portfolio of 6500 homes, with the majority being demolished and replaced. In addition to the new construction, hundreds of millions of dollars were spent on historic renovations and other improvements.

Under Jon's tenure on the Navy project, Forest City rolled out a sustainability program that resulted in a number of different awards from the Department of Energy, hundreds of thousands of dollars in estimated annual savings, and wide recognition from the Department of Energy as an industry leading builder/developer. Completed projects on the Navy and Marine Projects include two neighborhoods built to LEED standards, nine LEED gold homes, one LEED platinum home, a LEED silver office building, a 218 home community of individual homes built to LEED standards, and three net-zero energy homes.

Prior to working with Forest City, Jon founded A&E Real Estate, LLC. The company was involved in a number of projects in the greater Washington D.C. area. Prior to owning his own business, Wallenstrom led Archstone Communities Trust's development efforts in the mid-Atlantic region. As Archstone's regional Vice President, Jon developed over \$650 million in luxury apartment communities and has developed over \$870 million in the course of his career. Jon started Archstone's Washington, DC office in late 1997 and by 1999 had one of the deepest development pipelines in Washington, DC. Jon's experience extends to all of Washington's submarkets, as well as the Boston, Philadelphia, and Richmond markets. Jon has developed over 4,000 multi-family homes in the Mid-Atlantic region. Prior to joining Archstone, Jon was with JPI Development where he helped open their Washington DC office.

Under Jon's leadership Forest City has won a number of awards including the 2016 NAIOP Hawaii Project of the Year, 2016 NAIOP Hawaii Green Building Award, and 2016 Professional Builder Magazine Golden Nugget award for Kapolei Lofts. The "Navy Installation Housing Team of the Year" award for two consecutive years (2006 and 2007) and a 2007 "Project of the Year" merit award from Multifamily Executive. The Navy project has also received numerous awards recognizing historic renovation efforts. Jon's projects on the mainland have won awards for design and performance and have been recognized by the Maryland Office of Smart Growth as positive contributors to the communities in which they were built. Awards include: "Building Industry Association Best Mid-Rise, 2002;" "Fastest Lease-Up Pace Suburban Maryland, 2000 and 2002;" "Excellence in Landscaping, 2000 and 2002;" "Landmark Mid-Atlantic Apartment Sale, 1999;" "Landmark Apartment Sale, 1998;" "Landmark Apartment Sale, 1997." Jon also received the "2000 Archstone Award for Development" offered to the developer who makes the most significant contribution to the company.

Jon holds an AB from Princeton University, advanced his Princeton degree by studying at Oxford.

Jon C. Wallenstrom

1110 Nu'uanu Avenue, Honolulu, HI 96817 Cellular: 808.223.9767 Email: jonw@alaka-i.com

PROFESIONAL EXPERIENCE

July 2017 to present

Principal, Alaka'i Development

- Developer of a 318-unit apartment community at Ho'opili. The community will be Oahu's second class-A apartment community.
 - West Oahu
- Selected developer of 690 Pohukaina a 600-unit two-phase apartment community that
 will be developed in a public-private venture with the State of Hawaii. Alaka'i is also
 the intended fee developer of a 400-student public elementary school that will be
 developed in concert with the apartment towers.
 - o Downtown Honolulu

September 2006 to July 2017

President and Chief Operating Office, Forest City Hawaii and Forest City Military Communities

- Developer of Kapolei Lofts, Hawaii's first class-A apartment community consisting of 499 units in West Oahu. The community was completed in 2016.
 - Kapolei, Oahu
- Developed approximately 5 MW of energy projects making Forest City, at the time, the largest solar energy developer in the State of Hawaii.
 - Various locations on Oahu.
- Developer of State of Hawaii's largest public private venture. The partnership with the State will consist of 6 villages, containing 2,206 homes and 200,000 square feet of commercial on 272 acres.
 - o Kailua Kona, Island of Hawaii

September 2006 to October 2010

Forest City Military Communities Hawaii - Development Complete

- Managing member for Forest City Military Communities Hawaii partnership with the Department of the Navy. Developed \$1.7 billion dollars in improvements on a portfolio of 6500 homes.
- Oversaw and developed two hundred million dollars in historic renovations.
- Rolled out a sustainability effort program that resulted in four awards from the Department of Energy and annual savings to the partnership exceeding \$2 million.

July 2003 to September 2006

Founder, A&E Real Estate, LLC

 A&E most notably led the acquisition and development of a condominium conversion for a Carr and Carlyle Group Venture. Project revenues of \$78 million more than doubled the partner's money in less than one year.

August 1997 to July 2003

Vice President, Archstone Communities

- Responsible for development activities from Richmond to Baltimore
- Winner Year 2000 Archstone Award for Development; offered to the developer who
 makes the most significant contributions to the company.

October 1994 to August 1997

Development Associate, JPI Mid-Atlantic Region

Managed development activities from land acquisition through construction oversight.

Jon C. Wallenstrom

1110 Nu'uanu Avenue, Honolulu, HI 96817 Cellular: 808.223.9767 Email: jonw@alaka-i.com

PROFESSIONAL AFFILIATIONS

- Current ULI Chair for Urban Plan, Honolulu District Council (2018-Present)
- Board Member Hawaii Clean Power Alliance (2019 Present)
- Advisory Panel Trees for Honolulu's Future (2019 Present)
- Past District Council Chair of the Honolulu Urban Land Institute District Council (2013-2015).
- Member of Urban Land Institute Hawaii Chapter (2006-current)
- Board Member Trust for Public Land (2014-2017)
- Member Lambda Alpha International honorary society for land economics (2014-current)
- Member of Urban Land Institute Product Council, Sustainable Development (2008-current)
- Board Member Hawaii Strategic Development Corporation, the State of Hawaii's venture fund (2012-current)
- Board Member Catholic Charities Hawaii Housing subcommittee (2012-2018)
- Board Member Hawaii Business Roundtable (2006-2015)
- Member of the Urban Land Institute's Washington DC Council (1999-2006)
- Member of the Johns Hopkins University Real Estate Institute (2004–2005)
- Board of Directors Landowners Economic Alliance for the Dulles Extension of Rail (2002-2004)
- Member of the Virginia and Maryland Building Industry Association Multifamily Councils (1994-2003)

AWARDS

· Market housing awards:

- National Association of Industrial and Office Properties (NAIOP) 2016 Kukulu Hale New Project of the Year Award and Green Building Award,
- National Association of Industrial and Office Properties (NAIOP) 2016 Kukulu Hale New Green Building Award,
- Professional Builders 2016 Golden Nugget Merit Award in the affordable category
- American Planning Association, Hawaii Chapter, 2011 project of the year for Kamakana Villages,
- Suburban Maryland Building Industry Association Best Mid-Rise, 2002,
- Suburban Maryland Building Industry Association Fastest Lease-Up Pace, 2000 and 2002,
- Northern Virginia Building Industry Association Excellence in Landscaping, 2000 and 2002,
- Landmark Mid-Atlantic Apartment Sale, 1997, 1998, 1999,

Military housing awards:

- Professional Housing Management Association Navy Installation Housing Team of the Year 2006 & 2007,
- 2007 "Project of the Year" merit award from Multifamily Executive,
- Professional Housing Management Association Marine Installation Housing Team of the Year 2007,
- 2009 Historic Preservation Honor Award Pearl City Peninsula housing,
- 2007 Department of Energy, Solar America Showcase Award used to facilitate the integration of solar thermal and solar PV systems on Navy and Marine Corps family housing on Oahu and Kauai,
- 2009 A Department of Energy Solar America Showcase Award to facilitate the implementation of smart grid technology and photovoltaic installations on the Navy portfolio of homes,

EDUCATION

1984 - 1988

Princeton University. Bachelor of Arts in History

 Captain of the Princeton Lacrosse Team and recipient of the Albert F. Howard Award –most improved player

PERSONAL

I have run at least one marathon every decade of my adult life.

JEFFREY H. OVERTON

AICP LEED AP Principal Planner



As Principal Planner, Mr. Overton leads the preparation of Master Plans, environmental impact documents, land use permitting, and community involvement for private developments, military installations, and government projects. His experience spans over 35 years of Environmental Impact Statements and permitting for residential communities, infrastructure and utilities, renewable energy projects, government facilities, scientific installations, schools, resorts, commercial/mixed-use centers, and recreational facilities. Mr. Overton directs community and area-wide Master Plans, site selection studies and urban design plans, and provides expert testimony before State and County land use authorities.

SELECTED PROJECTS:

Aloha Solar Energy Farm II -EA. HCDA Permit Kalaeloa O'ahu

East Kapolei Solar (5 Mw) -Environmental Studies, Permits East Kapolei, O'ahu

Coconut Plantation Village -SMA, PDU, Zone Change Kapa'a, Kaua'i

City & County of Honolulu - Emergency Operation Center Honolulu, O'ahu

Clearway Waiawa 36 MW Solar Farm Wajawa, O'ahu

Clearway Mililani 12.1 MW Solar Farm

Mililani, O'ahu Clearway Kawailoa 47.6MW Solar Farm

Kawailoa, O'ahu DTS Pearl Ridge Bus Terminal/

TOD Master Plan, EA, Permits Aiea. Oahu

Department of Education - Pu'u Kukui Elementary School - Master Plan, EA. Project District Application Wailuku, Maui

East Kapolei Solar (5MW) -Environmental Studies, Permits Kapolei, O'ahu

Hale'iwa Commercial Redevelopment -Master Plan, Zone Change, EA Hale'iwa, O'ahu

Hawai'i BioEnergy Kauai Algae Farm -Permitting Strategy

Līhu'e, Kaua'i

Hawai'i State Judiciary -Statewide Facilities Master Plan State of Hawai'i

Halekulani Hotel - Landscape. Hardscape, Pool Area SMA-m Honolulu, O'ahu

Hawea Point Residence - EA, SMA, CDUA Kapalua, Maui

Hilo Judiciary Complex -Site Selection Study, EIS Hilo, Hawai'i

Hilton Hawaiian Village Expansion -Master Plan EIS, SMA Permit, PDR, WSD Honolulu, O'ahu

Ho'opili Community - Master Plan, Zone Change, Urban Design Plan Kapolei, O'ahu

Ho'ohana 52 MW Solar Farm Kunia, O'ahu

Hunt Development - OCCC Kalihi Residential and Mixed-Use Redevelopment Honolulu, O'ahu

Kahala Ave. (4607) Residential - EA, SMA Kahala, O'ahu

Kalaeloa Barbers Point Harbor -2040 Master Plan, Fuel Pier Design, EIS Kalaeloa, O'ahu

PROFESSIONAL REGISTRATIONS & ASSOCIATIONS:

American Institute of Certified Planners (AICP), Member

Urban Land Institute (ULI), Member

O'ahu Economic Development Board,

U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

EDUCATION:

M. S. Marine Environmental Science State University of New York, NY

B. S. Zoology/Biology Oceanography Duke University, NC

PROJECT HONORS & AWARDS:

Hale'iwa Store Lots - APA Hawai'i Environment/Preservation Award, 2015

Kamakana Villages at Keahoulu - APA Hawai'i Chapter Outstanding Planning Award, 2011

Kamehameha Schools North Shore Plan -APA National Planning Excellence Award,

Waialua Town Master Plan - APA Hawai'i Chapter Community-based Planning Award,

Mauna Kea Science Reserve Master Plan -APA Hawai'i Chapter Outstanding Planning Award, 2000

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JEFFREY H. OVERTON

AICP, LEED AP Principal Planner

SELECTED PROEJCTS:

Kamakana Villages at Keahuolu -Master Plan, EA, Permits Kona, Hawai'i

Kamehameha Schools - Kapālama Strategic Implementation Plan & Master Plan

Kapālama, Oʻahu

Kamehameha Schools - Kohou TOD Residential Development

Honolulu, O'ahu

Kamehameha Schools -North Shore Lands Master Plan

North Shore, O'ahu

Kalaeloa ASEF 2 Solar -EA. HCDA. Dev. Permit

Kalaeloa, O'ahu

Kalia Fort DeRussy Wastewater Improvements - EA (NEPA), Permits

Honolulu, O'ahu

Kapolei West Community - Master Plan, State Land Use, Zone Change

Kapolei, O'ahu

Kapolei Harborside Center - Master Plan, EIS, State Land Use, Zone Change

Kalaeloa, O'ahu

Kaua'i Technology Center -EA, Phases I & II

Waimea, Kaua'i

Kawailoa Beach Park (Chun's Reef) -Master Plan, EA

Hale'iwa. O'ahu

Keauhou Bay Management Master Plan Keauhou, Hawai'i

Koko Head District Park & Hanauma Bay Preserve - Master Plan, EIS, SMA, CDUP Honolulu, O'ahu

Kualoa Ranch - Master Plan, EA, Permits Kualoa, O'ahu

Kualoa Regional Park Wastewater Systems - EA, SMA Permit

Kualoa, O'ahu

Lahaina Cannery Redevlopment EA, SMA

Lahaina, Maui

Lā'ie Development Plan & Wastewater Facility - EIS, Facility Plan, Permits Lā'ie, O'ahu

Lä'ie Inn Redevelopment -EA. SMA. Permits Lā'ie. O'ahu

Lanihau Shopping Center/Henry Street -

Kona, Hawai'i

Le Jardin Academy New Campus -Master Plan, EA, DP, Zone Change, SMA

Kailua, O'ahu

Makaïwa Hills Residential Community -Master Plan, EIS, State Land Use, Zone Change

Ewa, O'ahu

Maluhia at Wailea - Master Plan, EA, SMA Wailea, Maui

Manini'Öwali Residential Community -Master Plan, EIS, State Land Use Kona, Hawai'i

Marriott Waikīkī Beach Hotel - Planning & Permitting Studies

Honolulu, O'ahu

Mauna Kea Science Reserve Complex -Master Plan, EIS

Maunakea, Hawai'i

Moku'ula/Mokuhinea Historic Fishpond -Ecosystem Restoration Plan

Lahaina, Maui

Pan-STARRS Observatory -EIS (NEPA), CDUP

Maunakea, Hawai'i

Pelekane Bay & Watershed - Ecosystem Restoration Plan (NEPA)

Kohala Hawai'i

Pupukea Rural Community Commercial -EIS & Permits

Pupukea, O'ahu

Phycal Algae Biofuel Pilot Project -EA NEPA, Permit

Wahiawa, O'ahu

Sunset Beach Recreation Center -Master Plan, EA, SUP, SMA Permit

Pūpūkea, O'ahu

TopGolf Hawai'i

EA, Special District Permit

Honolulu, Oahu

University of Hawai'i at Mānoa - Stan Sheriff Center Siting Study, EA Honolulu, O'ahu

Upcountry Town Center - Master Plan, EIS, State Land Use, Permits Pukalani Maui

U.S. Garrison Hawai'i - Pohakuloa Training Area, NEPA/HEPA, EIS Pohakuloa, Hawai'i

USARHAW North - End State Development Plan Schofield Barracks, O'ahu

Waiawa Solar 50MW -CUP, Zoning Waiver Waiawa, O'ahu

Westin Maui Resort & Spa - SMA Lahaina, Maui



PAUL T. MATSUDA

P.E., LEED AP Principal Director of Civil Engineering



Paul Matsuda, P.E., LEED AP is a principal and the Director of Civil Engineering of G70. Paul has more than 20 years of civil engineering experience in a wide variety of site development, transportation and utility infrastructure projects throughout Hawai'i and the Pacific Northwest. He is responsible for management and delivery of the firm's engineering projects and is actively involved in design and project management for many of them. Paul received a Bachelor of Science degree in civil engineering from the University of Washington and is a licensed professional in Hawai'i, Oregon, and Washington.

SELECTED PROJECTS:

Innergex Paeahu 15MW Solar Farm Ulupalakua Ranch, Maui

Innergex Hale Kuawhi 30MW Solar Farm Parker Ranch, Hawai'i Island

Longroad Mahi 120MW Solar Farm Kunia, O'ahu

Longroad Pulehu 40MW Solar Farm Pulehu, Maui

Clearway Mililani 12.1MW Solar Farm Phase 1

Mililani, O'ahu

Clearway Mililani 12.1MW Solar Farm Phase 2

Mililani, O'ahu

Clearway Waipio 47.6MW Solar Farm Waipio, O'ahu

Clearway Kawailoa 47.6MW Solar Farm Kawailoa, O'ahu

Clearway Waiawa I 36MW Solar Farm Waiawa, O'ahu

Ho'ohana 52MW Solar Farm

Kunia, O'ahu

Waipio 11MW Solar Farm Waipio, O'ahu

ASEF Kalaeloa Solar Farm

Kalaeloa, O'ahu

East Kapolei Solar Farm

Kapolei, O'ahu

Sunetric Wai'anae Two 5MW Solar Farms Phases I & II (FIT & PPA)

Wai'anae, O'ahu

Sunetric Residential Solar, Farrington -Permitting

Wai'anae, O'ahu

Sunetric Residential Solar, Mahinaau -Permitting

Wai'anae, O'ahu

Hawai'i BioEnergy - HECO Biofuels Program Development

Kaua'i and Hawai'i

University of Hawai'i at Mānoa -Photovoltaic Power Plant Master Plan Honolulu O'ahu

University of Hawai'i at Mānoa - Metcalf Water System Improvements

Honolulu, O'ahu

University of Hawai'i at Mānoa - Student Housing Study

Honolulu, O'ahu

University of Hawai'i at Mānoa -College of Education Master Plan

Honolulu O'ahu

University of Hawai'i at Mānoa -Richardson School of Law Outreach Center Honolulu O'ahu

University of Hawai'i at Mānoa -Webster Hall

Honolulu O'ahu

Office of Hawaiian Affairs - 4531 Kuamo'o Road Civil Infrastructure Assessment Kapa'a, O'ahu

Office of Hawaiian Affairs - Kaka'ako Makai Master Plan

Honolulu, O'ahu

PROFESSIONAL REGISTRATIONS & ASSOCIATIONS:

State of Hawai'i - Professional Engineer (P.E.) Civil #10901

State of Oregon - Professional Engineer (P.E.) Civil #19,250

State of Washington - Professional Engineer (P.E.) Civil #35,943

U.S. Green Building Council (USGBC) -Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

U.S. Green Building Council, Hawai'i Chapter

American Society of Civil Engineers (ASCEH), Member

American Council of Engineering Companies Hawai'i (ACECH), Member

American Water Works Association (AWWA), Member

EDUCATION:

B.S. Civil Engineering University of Washington, WA

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FEHR PEERS



EDUCATION

B.S. Mechanical Engineering, San Jose State University, 1988

REGISTRATIONS

Licensed Traffic Engineer, State of California (TR1845)

AFFILIATIONS

Institute of Transportation Engineers (ITE) American Planning Association (APA) Women's Transportation Seminar (WTS)

AWARDS

- Sustainable Transportation and Land Use Planning in a Changing Environment, Nanning, China, December 2010
- Estimating Trip Generation for Transit-Oriented Developments (TODs), ITE Technical Conference, 2007
- Guest Lecturer (Transportation):
 San Diego State University (2019)
 San Jose State University (2004-09)

EXPERTISE

- Campus and Site Access Planning
- Long-range Multimodal Transportation Planning
- Parking Studies
- Traffic Operations Analysis
- · Bicycle and Pedestrian Planning
- · Multimodal Corridor Planning
- Transportation Demand Management
- Travel Demand Forecasting

Sohrab Rashid, TE

ABOUT

Sohrab is a registered Traffic Engineer in California with 32 years of experience in transportation planning and engineering. He has served as Principal in Charge or Project Manager for numerous high-profile transportation projects throughout California, Hawaii, and internationally. Sohrab strengths include a broad knowledge of mobility planning and engineering that he applies to maximize benefits to all travel modes, and an ability to communicate complex technical approaches and findings in an easy-to-understand way to decision-makers and the public. He is currently a Senior Market Leader in the firm's San Diego office, and oversees projects across Hawaii, in San Diego County, and in other western states. He also has experience working in the Pacific Rim, including in China, Singapore, and Guam.

REGIONAL AND LARGE-AREA PLANNING

Central Oahu Transportation Study (Oahu, HI)

Sohrab is the Project Manager for this OahuMPO-led study, where Fehr & Peers served as the lead technical subconsultant. The purpose of the study is to identify a program of multi-modal improvements to enhance circulation and access within and to/from the Central Oahu area including Mililani and Waipio, as well portions of Wahiawa, Waikele and Waipahu. Fehr & Peers used the OahuMPO regional model to evaluate selected roadway projects on HDOT facilities including H-1, H-2, and Kamehameha Highway. The study also focused on a series of transit, bicycle and pedestrian improvements that would contribute to reducing reliance on the automobile. A feasibility evaluation and cost estimate were prepared for each of a screened group of projects that will be used in the Oahu Regional Transportation Plan update.

Envision 2040 General Plan Update (San Jose, CA)

Fehr & Peers completed the technical analysis, background report, and policy development for the Envision San José 2040 General Plan (GP) Circulation Element update with Sohrab serving as Project Manager. This process involved a comprehensive evaluation of existing transportation conditions for 100 roadway segments, validation and enhancement of the city's travel demand model, analysis of five land use alternatives, and input into policies for all travel modes. A primary focus of the update was to promote a balanced policy approach to all modes and evaluating changes to the City of San Jose's level of service and parking policies. The result was a state of the practice, multimodal blueprint for a thriving City in the heart of Silicon Valley.

Mobility Modeling Tool (San Diego, CA)

Fehr & Peers and City of San Diego Planning Department staff collaborated to develop a quick-response planning tool to estimate mode share and the potential change in Vehicle Miles Traveled (VMT) for development in the City. The tool informs land use, infrastructure, and policy strategies that can be implemented to meet aggressive commute mode share targets within Transit Priority Areas (TPAs), but more importantly to reduce VMT, which is the goal of the City's Climate Action Plan. The Excel-based tool was developed to provide a means for City planners to quickly test scenarios by community planning area (CPA) and view results at the community plan and citywide level. It is calibrated to local San Diego conditions using Census American Community Survey (ACS) journey-to-work data and incorporates data and output from the SANDAG regional travel demand model.

TRANSIT-ORIENTED DEVELOPMENT (TOD)

Ala Moana and Halawa Area Transit-Oriented Development (TOD) Studies (Oahu, HI)

Fehr & Peers assisted the City & County of Honolulu Department of Planning and Permitting with TOD planning studies for two stations on the rail transit corridor. Sohrab led the transportation planning effort that involved a constraints and opportunities evaluation and trip generation analysis of three land use alternatives around both stations. The studies included recommendations to enhance multi-modal access and improve mobility to support the preferred plans. Specific improvements included new street connectivity, higher quality bicycle/pedestrian facilities, and transit access enhancements.

State Transit-Oriented Development (TOD) Planning and Implementation for Oahu (Oahu, Hawaii)

Fehr & Peers served as the transportation consultant on the PBR Hawaii team (under the direction of the State Office of Planning) to study the infrastructure and policy needs for implementing TOD in three priority areas on the island of Oahu: East Kapolei, Halawa Stadium, and Iwilei-Kapalama. A detailed review of planned and proposed development and infrastructure was conducted to establish the study context and needs. Within each area, improvements were recommended to enhance multimodal access to future rail stations, increase street connectivity, enhance resiliency, and provide opportunities for land redevelopment. This information was used to generate range of magnitude cost estimates to inform future capital improvement programs.

Transit Station Area Plan and EIR (Milpitas, CA)

Fehr & Peers assisted with the development of the specific plan and the subsequent EIR transportation section for the Transit Area Plan surrounding the future BART station. Sohrab directed the analysis of the plan area that is expected to include 5,000 dwelling units and 2,000,000 square feet of

commercial, retail and industrial development. Impacts were analyzed based on future traffic projections from the Santa Clara Valley Transportation Authority (VTA) model. Trip internalization, impacts to bicycle, pedestrian and transit facility design, and a GHG assessment were also key elements of the study.

TRAFFIC OPERATIONS AND ENGINEERING

H-1 Corridor Planning Study (Honolulu, HI)

Fehr & Peers was a key subconsultant for this effort, and Sohrab, as Project Manager, helped to identify near-, mid-, and long-term projects to improve corridor operations and minimize congestion within the H-1 freeway corridor. Projects included capacity enhancements, safety improvements, modified and modernized interchanges, new ramp connections, ITS strategies, TDM strategies, and replacement of structures. A list of screened candidate projects was developed, and specific projects were analyzed using forecasts from the OahuMPO travel demand model and GPS and travel time data to address expected congestion benefits and project refinement. The final work product for HDOT was a list of projects with cost estimates and a feasibility evaluation to help inform future road projects.

City Center Utility Relocation - Transportation Management Plan (TMP)/Signal Design (Honolulu, HI)

Fehr & Peers prepared the TMP for a portion of the Center City Utility Relocation project that was part of the construction the planned Honolulu rail transit system. Utilities are being relocated along sections of Dillingham Street and the TMP was prepared to analyze the potential impacts of various proposed lane closures under multiple construction scenarios at 88 intersections in the Primary Urban Center. The analysis included anticipated diversion due to congestion, and strategies were developed to minimize impacts to the construction corridor and on major parallel and intersecting roadways. Fehr & Peers is also designing up 15 temporary traffic signals under multiple study phases and coordinating with various agencies to address comments and finalize plans to meet a highly expedited schedule.

COMPLETE STREETS/MULTIMODAL PLANNING & DESIGN

North-Park Mid-City Bikeway Corridors (San Diego, California)

Sohrab served as Principal-in-Charge, for the planning and conceptual design of the North-Park Mid-City Bikeway Corridor in the City of San Diego for the San Diego Association of Governments (SANDAG). He assisted an interdisciplinary team of planners, urban designers, traffic and civil engineers, and environmental specialists to develop a preferred set of design interventions for four priority corridors connecting downtown San Diego with neighborhoods to the north and east. Treatments include innovative designs and traffic calming measures, and Sohrab led the operations analysis to support project

implementation and to determine potential impacts and mitigation measures.

Urban Core Complete Streets Study (Honolulu, HI)

Sohrab served as Principal-in-Charge for the planning and design plans of complete streets improvements on 16 miles of roadway within the primary urban center of Honolulu. For a subset of these roadways, our team prepared 100% plans suitable for construction of interim improvements that can be integrated with on-going re-paving and re-striping projects. The purpose of the project was to significantly enhance the bicycle and pedestrian network, as well as to improve transit stop access and vehicular safety. Proposed improvements include new protected and standard bikeways, curb extensions, crosswalk safety features, modified signal phasing, bus queue jump and dedicated lanes, and traffic calming devices; all through a reallocation of street space to better balance facilities and enhance safety for all users. The potential effects of these improvements were evaluated in a comprehensive mobility assessment, which includes extensive data collection and multi-modal performance metrics.

PARKING

Integrated Parking and Shuttle Master Plan (Unified Port of San Diego, CA)

Sohrab led the study identifying existing parking demand in the Port tidelands area ranging from Harbor Island to the South Embarcadero area including the San Diego Convention Center. The overall project goal was to summarize the parking needs, develop potential solutions for anticipated parking shortfalls, and identify opportunities for the expansion of the Port's current shuttle program. An additional key component of the project was to identify potential surface parking lot locations that would better serve the Port District as alternative active land uses (hotels, retail, restaurants) and to identify locations where the lost parking supply could be relocated. A follow up focused study included evaluation of the North Embarcadero parking needs and potential solutions as part of the Phase II North Embarcadero Vision Plan.

UC San Diego La Jolla Campus Parking Operations Study (San Diego, CA)

Fehr & Peers assisted the University of California San Diego with providing a comprehensive parking study for the main campus in La Jolla. This study detailed overall parking operations of all facilities (including lots, structures, and on-street spaces) serving a variety of users. The study included development of a set of management strategies, which made use of historic trends and technology to optimize use of existing and future parking resources. This study also included a series of policy recommendations to help better manage the parking supply and provide flexibility for existing and future student, faculty, staff, and visitor users.

Viejas (SDSU) Arena Circulation and Parking Study (San Diego, CA)

Fehr & Peers conducted a parking circulation and access study for Viejas Arena located on the San Diego State University (SDSU) Campus. As project manager, Sohrab evaluated the existing parking operations and occupancy at SDSU parking facilities during typical school days and with multiple evening events. Fehr & Peers conducted field observations to acquire a comprehensive understanding of event ingress and egress traffic flows, as well as key circulation parking issues associated with all the major parking structures. Parking strategies were recommended in the form of physical and policy changes that would improve traffic flow around the Viejas Arena area, result in less traffic congestion, and enhance the arena visitor experience. A follow up study evaluated potential mobility and parking improvements within the greater College Area to improve arena traffic and to provide an overall community benefit. Detailed operations analyses were conducted where applicable as part of evaluating the effectiveness of each improvement, and the highest priority projects were identified to help facilitate implementation.

CAMPUS PLANNING

San Diego State University Mission Valley Campus (San Diego, CA)

Sohrab served as Principal-in-Charge for the transportation planning analysis and design services for the planned SDSU Mission Valley campus at the SDCCU Stadium site. This included preparing the Transportation Impact Analysis (TIA) for CEQA environmental documentation. Sohrab oversaw the traffic operations analysis, including level of service at intersections, on roadways, on freeway segments, and on freeway ramps. Sohrab also oversaw the VMT analysis, which included performing SANDAG model runs in house.

UC San Diego Mesa Housing and Thurgood Marshall Neighborhood Planning Studies (La Jolla, CA)

Sohrab was the Project Manager and Principal-in-Charge for Fehr & Peers to assist SOM with the development of Neighborhood Planning Studies at the University of California San Diego campus for both the Mesa Housing Area and for Thurgood Marshall College. The studies involved establishing the vision for redevelopment of each neighborhood based on set of planning principles and providing a road map for development of new and upgraded facilities. Fehr & Peers' role was to provide input on modifications to the mobility infrastructure and help the team enhance pedestrian, bicycle, and transit/shuttle options, while reducing dependence on the automobile. We recommended new pedestrian and sidewalk connections, locations of new parking facilities to replace spaces on redeveloped parcels, as well as the realignment of internal streets and driveways to maintain access but minimize on-campus conflicts.

CHRISTOPHER M. MONAHAN, PH.D. PRESIDENT, FOUNDER TCP HAWAI'I, LLC

150 Hamakua Dr., #810, Kailua, Hawai'i 96734 (808) 754-0304 mookahan@gmail.com

EDUCATION

Ph.D. & M.A. in Anthropology (Archaeology Section), University of Wisconsin-Madison (1991, 1996) B.A. in Anthropology (Archaeology Concentration), St. Lawrence University, Canton, New York (1986)

WORK HISTORY (SELECTED)

Sole Proprietor, TCP Hawai'i, LLC, Kailua, Hawai'i (2006-present)

I founded a research/consulting company based in Hawai'i dedicated to conducting cultural resource and historic preservation studies including work on Hawaiian Archaeology, History and Culture.

- TCP Hawai'i specializes in community relations and consultation with Native Hawaiian organizations and individuals, government agencies, large landowners, developers, and trusts.
- We have completed over 100 projects for public and private clients.
- We conduct all types of Archaeological and Burial Treatment studies for regulatory & nonregulatory undertakings; we also conduct Cultural Impact Assessments & Ethno-historical studies.
- I have appeared before island burials councils on O'ahu, Maui and Hawai'i; I have testified as an expert witness before the Land Use Commission (LUC) in Honolulu and the County of Kaua'i Planning Department (SMA hearings).

Principal Investigator/Project Manager, Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i (2009-2012)

I managed cultural resource projects in Hawai'i, including a \$5 million contract for the U.S. Army Corps of Engineers consisting of 25 individual projects, and for other public agencies and private clients.

- I authored dozens of reports on historic preservation, archaeological and cultural resource issues.
- I managed staff of 6–8 individuals, including professionals, administrators and support staff.
- One of my primary roles and responsibilities was to maintain Quality Assurance/ Quality Control and oversee all aspects of project management.

Principal Investigator/Project Manager, SWCA, Inc., Portland, OR (2008-2009)

I worked as a Principal Investigator/Project Manager for SWCA—my roles and responsibilities were essentially the same as those described above for CSH.

 A major project completed at SWCA, in cooperation with OHA and the U.S. Army, was a critical re-analysis of archaeological surveys conducted by previous firms on Stryker-related projects.

O'ahu Island Lead Archaeologist and Acting Branch Chief, SHPD/DLNR, Honolulu (2006)

- Conducted site visits and investigations on O'ahu Island—including burial sites and inadvertent discoveries—to ensure compliance with historic preservation laws and rules
- Served as liaison between Native Hawaiians and other concerned parties, developers, archaeological firms, government agencies, politicians, activists, and others
- Advocated for the rights of locals, including Native Hawaiians, in the historic preservation process, to the extent that the laws and rules allow
- Consulted with archaeological contractors, developers, government agencies, and private landowners on O'ahu, regarding their historic preservation obligations and responsibilities
- Authored approximately 450 historic-preservation project reviews, mostly for O'ahu Island

[WORK HISTORY (SELECTED), continued]

Archaeologist, Project Director, Scientific Consultant Services, Inc., Honolulu (2003–2005)

- Authored dozens of archaeological reports on O'ahu, Maui, Kaua'i, and Hawai'i islands
- Appeared before the Island Burial Councils on several occasions
- Conducted docent training (pro bono work), Kaua'i Museum, Līhu'e

Lecturer, University of Hawaii-Mānoa, Department of Anthropology (2002-2003)

Courses included "Humanity Emerging" (an introduction to Physical Anthropology and Archaeology), "Introduction to Physical Anthropology," "Introduction to Archaeology," "Seminar in Lithic Analysis"

Forensic Archaeologist, U.S. Army Central Identification Laboratory, Honolulu, HI (2001–2002)

- Conducted recovery/excavation of human skeletal remains of U.S. military servicemen from Vietnam- and World War II-era sites in Laos, Vietnam, Papua New Guinea, and Kiribati
- Case work (osteological examination) in U.S. military forensic studies
- · Conducted public presentations and trainings

OTHER RELEVANT WORK AND TEACHING EXPERIENCE (SELECTED)

Adjunct Assistant Professor (2004–2006), University of Maine, Machias, ME (Anthropology)

• Taught "Introduction to Physical Anthropology" (on-line classroom)

High School Teacher (2000–2001), Perspectives Charter School, Chicago, IL, Social Studies

- Designed and implemented a Social Studies curriculum for 9-12 graders in Chicago
- Focused on issues of self-empowerment, civil and human rights, and alternative histories

Lecturer (1998–2000), Loyola University, Chicago, IL, Department of Anthropology

• Taught "Human Origins" (an introduction to Physical Anthropology and Archaeology)

Instructor (1997–1999, summers), Rutgers University, Koobi Fora Field School, Kenya, East Africa

Taught Field Methods in Paleolithic Archaeology and Physical Anthropology

Visiting Assistant Professor (1996–1997), The George Washington Univ., Department of Anthropology

• Courses: "Introduction to Biological Anthropology," "Paleolithic Archaeology," Graduate Seminar "Biological Anthropology," Seminar "Archaeology of Human Origins"

Visiting Student (Pre-Doctoral) Internship (1994–1996); Smithsonian Institution, Anthropology

- Conducted experimental archaeology
- Research included Scanning Electron Microscopy

Dissertation (1993–1994); National Museum of Kenya, Paleontology & Archaeology Divisions

- Fieldwork included ethnoarchaeology (living with various ethnic groups) in Kenya
- Laboratory analyses of million-year-old fossils from Olduvai Gorge and Koobi Fora

Assistant Field Supervisor (1991); excavations at Gilman Falls, ME, University of Maine

• Fieldwork included work with the Passamaquoddy tribe of Maine

Teaching Assistant (1990–1991), University of Wisconsin-Madison (Department of Anthropology)

Assistant Field Supervisor (1990); excavations at Neolithic Cave, Fontbreguoua, Provence, France

Field Technician (1987–1989); excavation and survey, various companies and agencies, Maine

Field Technician (1984–1985); survey in southwestern Kenya on Neolithic-Age sites

PEER-REVIEW PUBLICATIONS

- Monahan, C.M. (1999a). Comparing apples and oranges in the Plio-Pleistocene. *Journal of Human Evolution* 37: 789–792.
- Monahan, C.M. (1999b). Quantifying bone modification by African wild dogs and spotted hyenas. *Journal of Human Evolution* 36: A14.
- Monahan, C.M. (1998). The Hadza carcass transport debate revisited and its archaeological implications. *Journal of Archaeological Science* 25: 405–424.
- Monahan, C.M. (1996). New zooarchaeological data from Bed II, Olduvai Gorge, Tanzania: implications for hominid behavior in the Early Pleistocene. *Journal of Human Evolution* 31: 91–128.
- Pobiner, B.L., Rogers, M.J., Monahan, C.M. & Harris, J.W.K. (2008). New evidence for Hominin carcass processing strategies at 1.5 Ma, Koobi Fora, Kenya. *Journal of Human Evolution* 55: 103–130.
- Rogers, M., Monahan, C.M. *et al.* (1999). New discoveries of hominid-modified bones from the Koobi Fora Formation, Kenya. *Journal of Human Evolution* 36: A18.
- Byrd, B. & Monahan, C.M. (1995). Death, mortuary ritual, and Natufian social structure. *Journal of Anthropological Archaeology* 14: 251–287.

PROFESSIONAL PRESENTATIONS (SELECTED)

- "Variability in Traditional Planting Strategies as Illustrated by the Kona (Kahalu'u) Field System" (October 2015), Society for Hawaiian Archaeology annual meeting, Līhu'e, Kaua'i (w. Rose Runyon Thurman & Doug Thurman).
- "Continuity and Change at a Pu'uone Fishpond: New Archaeological Data from Lokoea, Kawailoa, O'ahu" (October 2013), Society for Hawaiian Archaeology annual meeting, Honolulu (with Doug Thurman).
- "A Functional and Temporal Interpretation of Excavated Pits in the Mauna 'Āina (Pōhakuloa Training Area) and Their Significance in Hawaiian Prehistory" (October 2012), Society for Hawaiian Archaeology annual meeting, Keauhou, Hawai'i.
- "New Archaeological and Experimental Data on Functional Interpretations of Excavated Pits at Pohakuloa Training Area, Hawai'i Island" (October 2010), Society for Hawaiian Archaeology annual meeting, Kaua'i.
- "Stemming the Tide in the Hawaiian Islands: Impacts of Sea-level Rise on Cultural Resources" (July 2008), 6th World Archaeological Conference, Dublin, Ireland (with co-author Dr. Michael Kimball).
- "New Directions in Historic Preservation in Hawai'i: The Traditional Cultural Properties Paradigm" (July 2006), Queen Emma Hawaiian Civic Club, Honolulu.
- "Traditional Cultural Properties in Hawai'i" (June 2006), University of Hawai'i-Mānoa, East-West Center, for an audience comprised of U.S. Fish and Wildlife biologists and land managers.
- "Archaeological Issues in Section 106 Compliance in Hawai'i" (May 2006), Federal Office Building, Honolulu, for an audience comprised of Federal Housing and Urban Development (HUD) contractors.
- "Treatment of Human Remains on Non-Federal Lands: Laws, Rules, and Practice" (April 2006), JPAC/CIL, Hickam Air Force Base, to an audience of forensic anthropologists.
- "A View from Both Sides of the Fence: Why a Graduate Degree *Does* Matter in CRM, and Why CRM *Should* Matter in Academia" (Fall 2004), Society for Hawaiian Archaeology annual meeting Kailua-Kona.
- "Variability in the Foraging Behavior of *Homo Erectus*" (Fall 2003), Society for Hawaiian Archaeology annual meeting, Kāne'ohe, O'ahu.
- "Forensic Anthropology at the USA-CILHI" (March 2002), to ROTC Cadets, UH-Mānoa, Honolulu.
- From 1994 and 2000, I delivered approximately a dozen scientific papers at annual meetings of the Society for American Archaeology, American Association of Physical Anthropology, and Paleoanthropology Society.

INVITED PUBLIC LECTURES (HONORARIA)

St. Lawrence University, Canton, New York (March 2000), "Two Million Years of African Prehistory." Rutgers University, New Jersey (March 2000), "New Perspectives in the Archaeology of Human Origins." Tulane University, New Orleans (May 2000), "Human Origins."

Facing History and Ourselves (Educational Non-Profit Organization), "Integrating the Principles of a Disciplined Life into High School Teaching," Chicago (March 2001).

AWARDS AND GRANTS

- Dissertation Improvement Grant, National Science Foundation (1992–1993)
- Visiting Student Internship, Department of Anthropology, National Museum of Natural History, Smithsonian Institution (1994–1995)
- Travel Awards to present papers at national conferences, University of Wisconsin, George Washington University, and Loyola University (1995–2000)

ORGANIZED CONFERENCE

While a Pre-doctoral Intern at the Smithsonian (see above), I organized a 5-week public lecture series on New Directions in Neanderthal Research; invited speakers: Dan Lieberman (Harvard University), Curtis Marean (Arizona State University), John Shea (SUNY-Stony Brook), Steve Churchill (Duke), and Jamie Shreeve (National Geographic Society).

HISTORIC PRESERVATION TRAINING (SELECTED)

- Introduction to Section 106: National Preservation Institute Workshop (3/02), Honolulu; instructor: Tom King
- *NEPA Compliance*: National Preservation Institute Workshop (9/04), Honolulu; instructor: Claudia Nissley
- *Historic Structures Reports*: National Preservation Institute Workshop (3/05), Phoenix; instructor: Alfonso Narvaez
- Consultation with Native American Tribes, a 2-day workshop/conference (11/08), Suquamish Indian Tribe's Clearwater Casino Resort, Washington state
- Hawai'i Department of Transportation NEPA training (3/11), UH East-West Center, Honolulu
- Advisory Council on Historic Preservation, Section 106 intensive/advanced training (10/11), Waikīkī

OTHER RELEVANT EXPERIENCE AND INTERESTS

- From 1984–1999, I traveled to East Africa on several occasions, staying from several months up
 to a year, conducting research, living with native people in Kenya (Maasai, Samburu, Abaluyha,
 Swahili). I was fluent in Kiswahili at this time. I climbed (the 17,000 ft.) Mount Kenya in 1985.
- In 1984, I traveled to Alaska to work on a fishing boat for the summer, at which time I worked and traveled with native (Inuit) people I met along the way.
- From 2000-present, I have conducted several solo camping excursions lasting from 1-2 weeks into the wild, mountain outbacks of New Mexico, Arizona, and Maui.
- Most recently, I have become interested and active in describing and documenting Traditional Cultural Properties (TCP) as a means of preserving landscapes and natural resources.
- I am currently studying the Hawaiian language with Associate Professor Kahikāhealani Wight, Kapi'olani Community College, Honolulu.

SUCCESSOR PETITIONER (AS TO PARCEL 52) HO'OHANA SOLAR 1, LLC – MOTION FOR MODIFICATION AND TIME EXTENSION LUC DOCKET NO. A92-683

WRITTEN DIRECT TESTIMONY OF LAURENCE ROBERT GREENE

I, Laurence Robert Greene, have personal knowledge of the matters set forth herein and am qualified and competent to make these statements:

1. Please state your name and business address for the record.

Laurence Greene, 300 Spectrum Center Drive, Suite 1020, Irvine, CA 92618.

2. What is your current occupation?

I am the Project Manager for Ho'ohana Solar 1, LLC ("Ho'ohana"), and the Vice President of Development (U.S. West) for 174 Power Global, the North American solar energy and battery storage subsidiary of the Fortune Global 500 Hanwha Group.

When I was last before this Commission in 2014/2015 I was the Project Manager for Ho'ohana and also Principal of Greene Renewable Energy Inc., a renewable energy development consulting firm and worked as a consultant for Hanwha Q CELLS. In that capacity I was responsible for utility scale solar PV development in the Western US and also for public policy. I started in that role in 2011.

3. Did you provide a copy of your resume for these proceedings?

Yes, my resume was provided as Successor Petitioner's Exhibit ("Pet. Ex.") 36.

4. Please summarize your educational background.

I have a Bachelor's degree in Geology from the University of California, Los Angeles, a Master's degree in Geology from U.C. Davis, and an MBA from the UCLA Anderson School of Management, where I specialized in international market development strategy and business management. I am a Registered Professional Geologist in the State of California (#5447).

To what professional organizations do you belong?

Since 2010 I have been a member of the Leadership Council of the American Council on Renewable Energy (ACORE). I have been the President and served on the Board of Directors of the California Wind Energy Association (CalWEA), from 2007 to 2015. I have also been a Legislative Committee Member for the American Wind Energy Association, and served as the Vice President of the Coast Geological Society.

6. Do you specialize in any particular areas?

Yes, for over 30 years I have worked in the international energy industry, the last 19 of

which has been exclusively in renewable energy project development (solar, wind, biomass, biodiesel), including the development totaling 805-megawatts of utility-scale wind and solar energy projects now operating in the United States and Canada. I have also specialized in energy development projects in Thailand and Indonesia.

7. <u>Have you been involved in the development of any other Hawai'i solar farm projects?</u>

Yes. I was involved in the development of the Kalaeloa Renewable Energy Park, a 6.17 megawatt ("MW") solar farm site on 20 acres located in 'Ewa, which opened on in December 2013. I remain involved in the operation of the Kalaeloa Renewable Energy Park.

I was involved in the 20 MW solar farm project that this Commission approved under the its January 28, 2015 Order Granting Successor Petitioner (To Parcel 52), Ho'ohana Solar 1, LLC's Motion for Order Amending the Amended Findings of Fact, Conclusions of Law, and Decision and Order filed on October 1, 1996 ("2015 Order") (Pet. Ex. 16), and I testified before this Commission in those proceedings.

8. <u>Is the development of renewable energy important in Hawaii?</u>

I would say it is important everywhere. However, as an island state with an otherwise great reliance on imported fuel, I think renewable energy is especially important in Hawaii.

Hawaii spends roughly \$6 billion a year to import oil. Hawaii relies on imported fossil fuels for nearly 70% of its electrical power. On average, Hawaii residents pay an average of 37 cents per kilowatt hour, which is almost triple the national average. Renewable energy development will help to reduce and stabilize these costs. Renewable energy development is also consistent with the Hawaii Clean Energy Initiative which aims to achieve 70 percent clean energy by 2030, 40 percent of which is meant to come from locally generated renewable sources. Additionally, Governor Ige signed Act 97 into law on June 8, 2015, which requires Hawaii to reach the goal of achieving 100% renewable energy by 2045. (Pet. Ex. 14). As of 2017, current estimates place renewable energy sources as comprising only approximately 27.6% (per the Public Utilities Commission ("PUC") Report to the 2019 Legislature on Hawaii's Renewable Portfolio Standards) of the electricity generated in Hawaii. That was only a 1% increase from the 2016 figures.

9. Are you familiar with the proposed development of a solar farm as an interim use of Parcel 52 under Docket A92-683?

Yes. The currently proposed solar farm project consists of a 52 MW photovoltaic system, paired with a 52 MW/208 megawatt-hours battery energy storage system with a four-hour duration at full capacity, and includes related electrical improvements and structures and utility tie-ins (the "Project" or the "2020 Solar Project").

The Project is proposed to be installed within the 161.02-acre parcel owned by Robinson

Kunia Land, LLC ("Robinson") (and subject to Ho'ohana's ground lease), located at TMK No. (1) 9-4-002:053 ("Parcel 52"), in the Kunia area. Parcel 52 is the same property that this Commission approved for solar farm development under the 2015 Order.

Parcel 52 is within a larger, approximately 503 acre (the "Petition Area"), area that the Commission reclassified to the Urban District by Findings of Fact, Conclusions of Law, and Decision and Order dated December 9, 1993 ("1993 Order") in Docket A92-683. The Petition Area is shown on Pet. Ex. 1.

10. Does Robinson own all of the property under Docket A92-683?

No. HRT Realty, LLC owns the parcel listed on Pet. Ex. 1 as Parcel 01 and has informed us and the Commission that it is under contract to sell that property to Jupiter Investors II, LLC.

Haseko Royal Kunia, LLC ("Haseko") now owns the parcels listed on Pet. Ex. 1 as Parcel 71, Parcel 70, and Parcel 78. Haseko acquired Parcel 71 from RP2 Ventures LLC, who I understand was before this Commission on May 24, 2018 to provide a status report on its delinquency in developing any of the off-site infrastructure needed for the State Department of Agriculture ("DOA") Agriculture Park.

The Agriculture Park is not called out on Pet. Ex. 1, but it is depicted on Pet. Ex. 50, which is a graphic that DOA and/or the Office of Planning ("**OP**") prepared for that status hearing; this graphic is posted on the Commission's website.

The parcel noted as Parcel 79 on Pet. Ex. 1 is owned by RKES LLC.

11. What are the primary differences in renewable energy capacity between the approved 2015 Solar Project and the proposed 2020 Solar Project?

The Ho'ohana 2020 Solar Project, by providing 52-megawatts of clean, renewable energy, is a prime example of development in support of the State's policies and goals.

We are honored to have been selected by Hawaii Electric Company ("HECO") to develop this Project. And we are grateful for the support of the Hawaii State Energy Office, which urges a timely decision on approval of this Project, which is part of HECO's plans to retire the AES Hawaii coal plant. (See OP. Ex. 3).

The 208 megawatt hours battery energy storage system (with a four-hour duration at full capacity) that is part of the 2020 Solar Project will enable HECO to dispatch energy from the Project as needed to off-set evening and nighttime customer demand, assist in grid stabilization, and decrease the future dispatch of oil fueled generating units.

The 2020 Solar Project makes more efficient use of Parcel 52, and will generate substantially more renewable energy than the 2015 Solar Project. The 2015 Solar Project was to use approximately 124 acres within Parcel 52, and was designed to generate 20 MW of power. Whereas, the 2020 Solar Project will use only 33 additional acres, which

is a 27% increase in land use, but will result in a 160% increase in renewable energy generation capacity. That is a result of a few things. First, improved technology, and second Ho'ohana's strong commitment to make a more efficient design. See Pet. Ex. 28, which is a graphic prepared by G70 showing the land areas of the two projects. The overall footprint of the 2020 Solar Project, which is outlined in blue, is larger than that of the 2015 Solar Project, but it will also generate more than twice as much renewable energy.

Furthermore, the 2015 Project was anticipated to avoid the use of 4.7 million gallons of imported oil and 46,000 tons of carbon dioxide emissions annually. As a result of the improved renewable energy generation capacity, the improved 2020 Project will result in a significantly higher corresponding avoidance of imported fuel and emissions. The 2020 Project is expected to avoid the use of 10.6 million gallons of imported oil and 95,400 tons of carbon dioxide emissions annually.

Overall, the 2020 Project represents the equivalent to the power used by approximately 19,100 homes, as compared to only 7,000 homes for the 2015 Project. The improved carbon reduction is equivalent to removing approximately 17,400 cars per year, or 524,400 cars over a 30-year period, from O'ahu's roadways, as compared to removing only 243,000 cars (8,100 cars per year) with the previously contemplated scale of the 2015 Project.

The improved 2020 Project represents Ho'ohana's steadfast effort to provide renewable energy to Hawai'i at a lower cost than by traditional means. The current price of the energy to be sold to HECO is 10 cents per kilowatt hour, a marked improvement that will help reduce the need for expensive imported fuel and thereby help stabilize the energy prices in Hawaii.

12. Please explain how the 2020 Solar Project will connect to the HECO grid and whether that connection is different from the 2015 Solar Project.

The 2020 Solar Project will connect to the HECO grid through an existing 138 kV transmission system that runs just outside of Parcel 52's northern boundary. The location of the 138 kV lines is clearly shown in the photograph provided as Pet. Ex. 25. That photo was taken within the past month. The vantage point is from the closest boundary of the Haseko-owned Parcel 71 looking across Parcel 52. The lines and poles for the HECO 138 kV system and HECO's 46 kV system are clearly visible in the distance.

G70 prepared several graphics to show the Commission how the 2015 Solar Project, had it gone forward, would have connected to the HECO grid, and how the 2020 Solar Project will connect to the HECO grid. Pet. Ex. 24 shows how the 2020 Solar Project will tie into the existing HECO 138 kV system (the tie-in is depicted in green). I note that the distance between Haseko's Parcel 71 and Ho'ohana's point of interconnection is approximately 80 feet further from the distance between Parcel 71 and the existing HECO 138 kV line.

13. <u>Is the HECO interconnection for the 2020 Solar Project different from the interconnection for the approved 2015 Solar Project?</u>

Yes, in several ways. First of all, as depicted on Pet. Ex. 27, the location of the 2020 Solar Project substation is even further away from the other Petition Area properties than the substation that was planned for the 2015 Solar Project. Current distance is approximately 1,320 feet to the nearest Petition Area property (Parcel 71), while the substation for the 2015 Solar Project was approximately 1,057 feet from Parcel 71.

Another key difference is that the 2015 Solar Project was approved to connect to HECO's grid through an existing 46 kV transmission line that currently crosses Parcel 52. That transmission line is the pink line shown on Pet. Ex. 26 and 27. However, for the 2020 Solar Project, as discussed above, the point of interconnection will be further back into Parcel 52 and will connect to the existing 138 kV line. Moreover, part of the 2020 Solar Project involves relocating the existing (shown in pink) 46 kV line even further to the north and away from the Petition Area. The route of the relocated line is shown in blue on Pet. Ex. 26. In other words, the portion of the pink line within Parcel 52 will be removed and the line will be rerouted in approximately the alignment shown in blue.

14. <u>Is the solar array itself different in the 2020 Solar Project than it was for the 2015 Solar Project?</u>

Yes, but both projects were entirely within Parcel 52 and entirely within Urban District property, so in certain key respects the differences in land use are not significant.

As noted by the State Energy Office, the 2020 Solar Project has a dense land use ratio of 3 acres per MW (the project is within approximately 157 acres within Parcel 52 and will generate 52 MW of energy). (OP. Ex. 3). In contrast, the 2015 Solar Project was sited within 124 acres within Parcel 52 and would have generated 20 MW of energy, resulting in a land use ratio of 6 acres per MW. See 2015 Order at FOF 104.

G70 prepared a graphic showing the land areas of the two projects. Pet. Ex. 28. The overall footprint of the 2020 Solar Project, which is outlined in blue, is larger than that of the 2015 Solar Project, but it will also generate more than twice as much renewable energy.

15. What happened to the development of a solar farm that the Commission previously approved in 2015?

In 2015, the Commission issued the 2015 Order authorizing the development of the 20 MW Project. At that time, the Commission determined that development of a solar farm within Parcel 52 was an appropriate use of the land. It would allow the Robinsons and Ho'ohana make use of the land in a manner that was low-impact and environmentally friendly. 2015 Order, FOF 143.

The Commission determined that development of solar on Parcel 52 was supportive of the Hawaii State plan, and that it would not affect or impair the preservation or maintenance of natural systems and habitats, or the valued cultural, historical,

agricultural, and natural resources of the area. This is all documented in the 2015 Order.

Unfortunately, after this Commission approved the 2015 Solar Project, the PUC rejected the power purchase agreement ("PPA") between HECO and Ho'ohana, and that made it impossible for us to move forward with the 2015 Solar Project.

16. What has changed with the Project approvals this time around?

Besides the larger scale and substantially increased generation of clean, renewable energy I previously discussed, the PUC has already approved the PPA between HECO and Ho'ohana.

17. <u>If the Commission grants Ho'ohana's Motion, when will the 2020 Solar Project be operational?</u>

Because the PUC has already approved the PPA between Ho'ohana and HECO as of 2019, I estimate that, assuming timely receipt of all necessary permits and approvals, and the finalization of the HECO interconnection design, we could have the 2020 Solar Project substantially constructed within two years.

18. For how long will the solar farm be operational?

The previous 2015 Project approval authorized the Project to be in operation for 35 years, followed by an unspecified period for decommissioning. For this 2020 Project, Ho'ohana proposes a 40-year operational period, wherein Parcel 52 would be used as a solar farm, consistent with the design life of modern solar photovoltaic equipment.

19. How long will it take to decommission the 2020 Solar Project?

After the Project's proposed 40-year operational period, we estimate that decommissioning the Project will take approximately one year.

20. Is Ho'ohana responsible for decommissioning?

Yes. We have a contractual obligation to our landlord to properly decommission the Project. As a matter of good business practice, we set aside funds in our operation budget that grow over the last 5 years of the Project to cover the cost of decommissioning.

21. How many jobs will be created during construction of the Project, and will these jobs be filled by local residents?

The 2020 Solar Project is anticipated to generate approximately 50 jobs during majority of the two-year construction period. However, for an estimated period of seven months during peak construction activity it is anticipated that approximately 175 workers will be needed on site. Once the project is completed, it is estimated to require approximately five full-time employees. We anticipate that 100% of the jobs associated with the 2020 Solar Project will be filled by local labor.

By way of comparison, the 2015 Solar Project would have created 50 jobs during construction and employed only three full-time employees during the Project operational period.

Regarding labor, Ho'ohana is fully committed to strengthening and furthering their partnerships and contractual relationships with general contractors who have collective bargaining agreements with Hawaii's construction unions and Ho'ohana itself is happy to continue existing, friendly, conversations that it is currently having with Hawaii's construction unions themselves. Ho'ohana is committed to developing the Project safely and efficiently with a labor force that is highly skilled and trained in construction methods and project safety. We have been working with general contractors who have collective bargaining agreements and are speaking with a number of unions to create a project where all participants create renewable energy for the State of Hawaii and good jobs for union members.

We are working cooperatively with the Unions to create a project which provides great union jobs and a number of unions have committed to provide assistance to Ho'ohana to promote quality construction on the Project, as follows:

- a. Promote the employment of local workers on the Project and provide sufficient qualified workers to complete the Project within its specified timelines.
- b. Eliminate strikes and lockouts on the Project pursuant to the Unions' collective bargaining agreements.
- c. Resolve all grievances and disputes among the Unions.
- d. Promote and encourage a safe work site.
- e. Ensure uniform area rates or wages, hours, and conditions of employment.
- f. If there is a jurisdictional dispute between the Unions, and other unions involved in the project, with the goal of resolving any such disputes amicably and the commitment to maintain the work without any work stoppages, the following dispute resolution system shall be used:
 - a. All jurisdictional disputes on this Project, between or among the Unions signatory to this Agreement and the employers on the Project, shall be settled and adjusted using local industry standards. An arbitrator shall be chosen from a list composed of Keith Hunter, Judge Walter Kirimitsu, Judge Michael Town, Judge Riki May Amano, and Chief Justice Ronald Moon (if none of these arbitrators are available, then an arbitrator for a jurisdictional dispute shall be mutually agreed upon). The arbitrator's hearing on the dispute shall be held at a mutually acceptable location within the State of Hawaii. Such award or resolution shall not constitute a precedent for any other construction work covered by this agreement.

All of these commitments are inherent in the collective barging agreement that our selected contractor has executed with the Unions and is a commitment that Ho'ohana is happy to enforce and maintain for the 2020 Solar Project.

22. Are you familiar with the filing that Haseko made with the Commission on August 25, 2020? And that Jupiter and HRT joined in?

Yes, and I am very disappointed that these neighbors who have known, or should have known, that Parcel 52 was approved for a solar farm, and to whom we reached out in advance of filing our Motion to initiate dialog, rebuffed those efforts. Instead, without any discussion, they filed papers that raise spurious claims against the Project.

23. Have you looked at the letter from the Department of Planning and Permitting dated September 18, 2020, that was posted on the LUC website (it was not sent to Ho'ohana)?

Yes. I disagree with DPP's recommendation. DPP should not dictate that neighbors resolve their separate disagreements as a condition to acquiring a building permit; such an obligation would severely chill development based on whatever whims or desires a neighbor may have to stall, delay or potentially kill a project by unknown delays to satisfy such an unrealistic requirement.

24. Are you familiar with the filing made by OP in this matter on September 18, 2020 (the "OP Response")?

Yes, and although I wholeheartedly appreciate OP's support for the 2020 Solar Project, some of the conditions that OP wants this Commission to impose on the Project are extremely damaging in terms of massively inflated costs and unrealistic timeframes.

Moreover, OP appears to have wrongly conflated the obligations of the Parcel 71 landowner with the more limited separate obligations that the Commission imposed on Ho'ohana, as the lessee solar developer for Parcel 52.

Furthermore, to me it is inexplicable why or how OP can want this Commission to disregard the legally binding contract between Haseko (as assignee of RP2) and the DOA. The Fourth Amendment to Amendment and Restatement of Memorandum of Understanding, dated March 16, 2020, by and between RP2 and DOA ("2020 DOA MOU") (Pet. Ex. 19f) contains the requirements to satisfy the obligations to the DOA (which obligations have been outstanding for decades), and requires Haseko to have all of the infrastructure completed by June 30, 2021. Ho'ohana does not have any obligations under that agreement.

25. Are there any other parties to the 2020 DOA MOU?

No, it is a two party agreement between the owner of parcel 71 and the DOA. Ho'ohana was never a party to that agreement (or the prior versions of that agreement), nor, to my understanding, was our lessor, the Robinsons. The first of those MOUs was executed in March 1993 and has been amended five times (See Pet. Ex. 19A - 19f) since then, most recently in March of this year. Each time it was amended it remained a two-party agreement.

26. To be clear, which of the conditions in the OP Response are you concerned with?

I will refer to the conditions listed on OP Ex. 1.

Regarding OP's proposed amendments to Conditions A.1 through A.4, because those conditions cannot and do not apply to Ho'ohana's development of the 2020 Solar Project, Ho'ohana does not have to take a position on them. However, Ho'ohana strenuously disagrees with OP's interpretation, which is not at all evident in OP's Ex. 1, but is argued in the OP Response, that Conditions A.1 through A.5 should in fact apply to Ho'ohana as the interim use solar farm lessee for Parcel 52. The Commission recognized that the A.1 - A.4 Conditions under the 2015 Order applied only to Petition Area landowners; the Commission never encumbered the limited term solar farm lessee with those conditions. Yet now, OP, which was a party to the 2014/2015 Commission proceedings, seems to want to burden lessee Ho'ohana with those extensive additional obligations that always applied solely to landowners. We cannot agree to that.

Regarding OP's proposed amendments to Condition B.2, to impose several additional conditions related to wildlife protection, Ho'ohana does not object to those numerous additional requirements. They seem somewhat excessive - biological consultants determined that Parcel 52, as former sugarcane land, does not have any threatened or endangered species, or federally-declared critical habitat. No botanical resources of interest or concern were located on Parcel 52, and no animal species of interest or concern were located on Parcel 52. The biological study for the Ho'ohana project is filed as Pet. Ex. 13. Nevertheless, Ho'ohana is willing to comply with OP's new Condition B.2 (a) through (h).

As for OP's proposed amendment to Condition B.4, Ho'ohana does not object to those additions. Ho'ohana will undertake an updated glint and glare study (we had such work prepared in 2014 for the 2015 Solar Project).

OP's proposed change to Condition A.6 seems misguided. Although Ho'ohana remains committed to supporting the DOA and the Agriculture Park at a level commensurate with its obligations under Condition B.1. of the 2015 Order (and not to the standards now being proposed by OP), particularly because Haseko is now contractually obligated to complete all of the DOA infrastructure and to get it all done by June 30, 2021, it may be more practical and useful for Ho'ohana to provide funding toward Haseko's waterline construction in an amount commensurate with the costs Ho'ohana and DOA negotiated in 2015. For that reason, OP's additional language to Condition B.6 is unrealistically restricting.

OP's proposed changes to Condition B.1 are problematic for several reasons. However, I stand by the statement above. Ho'ohana remains committed to supporting the DOA and the Agriculture Park at a level commensurate with its obligations under Condition B.1. of the 2015 Order and consistent with the negotiations we had with DOA after issuance of the 2015 Order, as described in Pet. Exs. 21a, 21b, and 22.

The waterline as proposed by RP2, as the landowner of Parcel 71, is significantly more expensive than what we had negotiated with DOA in 2015. At that time, Ho'ohana procured an engineering study from ITC Water Management that identified two options for satisfying Condition B.1: (i) retrofitting an existing 24" waterline that crosses land owned by Robinson at a cost of approximately \$16,000; or (ii) installing a new 12"

waterline along Kunia Road at a cost of approximately \$300,000. See Pet. Ex. 21a (graphic depicting options); Pet. Ex. 21b (email from ITC Water Management providing estimate of \$275,000 to \$300,000).

We presented those two options to the staff at DOA. Staff expressed a preference for option (ii). In follow up, Joanne (Nonie) Toledo Hamm, who was (and remains) part of the Ho'ohana team working on community outreach, emailed then-Chair Scott Enright, on July 18, 2015, documenting the discussions with DOA staff and requesting Chair Enright's final decision on the matter. (See Pet. Ex. 22). However, shortly thereafter the PUC made its final decision rejecting the PPA between HECO and Ho'ohana, putting an end to the 2020 Solar Project.

Based on the construction plans we reviewed for the waterline that RP2 agreed to build (see Pet. Ex. 23), and which obligation Haseko assumed, I estimate their construction will cost more than \$1 Million and possibly up to \$2.2 Million.

An added cost of that magnitude would be a massive blow to the 2020 Solar Project. The 2020 Solar Project will generate more energy than the 2015 Solar Project would have, but that does not mean that Ho'ohana is getting paid any more money under our PPA with HECO. In fact, the PPA price for the 2020 Solar Project is over 1/3 lower despite the higher initial cost of a much large solar farm, with the addition of costly battery storage, and additional costs incurred to redesign the project to fit entirely within Parcel 52 in order to completely avoid impacts to agricultural lands, which DPP and DOA preferred.

Moreover, the timing for the construction of the waterline (OP wants it built before Ho'ohana obtains a building permit for the 2020 Solar Project), jeopardizes Ho'ohana's ability to meet its deadlines under the HECO PPA, and it also places an unrealistic new condition on Ho'ohana which previously had to build the waterline in conjunction with our solar Project development, but now OP wants us to do in advance. The feasibility of Ho'ohana undertaking the construction previously planned relied on us building the water pipeline when we already had construction crews mobilized nearby for the construction of the solar project, for the associated economies, ability to flex our workforce, and to lessen-impact our neighbors by integrating the construction of the water pipeline during the construction of the solar farm.

DATED: Carlsbad, California, September 25, 2020.

Respectfully submitted,

LAURENCE ROBERT GREENE

SUCCESSOR PETITIONER (AS TO PARCEL 52) HO'OHANA SOLAR 1, LLC – MOTION FOR MODIFICATION AND TIME EXTENSION LUC DOCKET NO. A92-683

WRITTEN DIRECT TESTIMONY OF JON WALLENSTROM

I, Jon Wallenstrom, have personal knowledge of the matters set forth herein and am qualified and competent to make these statements.

1. Please state your name and business address for the record.

Jon Wallenstrom, Alaka'i Development, 1110 Nu'uanu Avenue, Honolulu, Hawai'i 96817

2. Was your resume submitted as part of these proceedings?

Yes, my resume was filed as Petitioner's Exhibit ("Pet. Ex.") 38.

3. What is your current occupation?

I am a principal with Alaka'i Development, a Hawaii-based development firm. I also work to advance solar farms with Ho'ohana Solar 1, LLC ("**Ho'ohana**"), a Hanwha Energy USA Holdings Corporation d/b/a 174 Power Global company. In that capacity I am responsible for sharing development oversight of Ho'ohana's solar farms in Hawaii.

Prior to forming Alaka'i, I was the President of Forest City Hawai'i, and led that company's efforts on several fronts by developing residential housing and solar energy projects, and also served as the managing member and Chief Operating Officer for Forest City's Hawaii-based partnership with the Department of the Navy.

4. How long have you worked in that capacity?

I have been with Alaka'i for over four-and-a-half years, since March 2016. I have been working with Ho'ohana since 2012. I was involved in the 20 megawatt ("MW") solar farm project that this Commission approved under the its January 28, 2015 Order Granting Successor Petitioner (To Parcel 52), Ho'ohana Solar 1, LLC's Motion for Order Amending the Amended Findings of Fact, Conclusions of Law, and Decision and Order filed on October 1, 1996 ("2015 Order") (Pet. Ex. 16), and I testified before this Commission in those proceedings.

Please briefly describe your educational background.

I have a Bachelor's degree in History from Princeton University and a Certificate in Medieval History from Oxford University. I have also completed coursework in Urban and Regional Planning at the University of Hawai'i.

6. To what professional organizations do you belong?

I am the former District Council Chair of the Urban Land Institute Honolulu District Council, the current chair of the Honolulu District Council UrbanPlan Subcommittee, and a member of the Urban Land Institute Sustainable Development Product Council, and a past member of the Urban Land Institute Residential Neighborhood Development Council. I am on the board of the Hawaii Clean Power Alliance, and on the advisory council for Trees for Hawaii's future. I also have sat on Boards of the Hawaii Strategic Development Corporation, the Catholic Charities Hawaiii Housing Subcommittee, the Hawaiii Business Roundtable, and the Hawaiii Chapter Trust for Public Land.

7. Have you been involved in the development of any Hawai'i solar farm projects?

Yes. When I was with Forest City, we were one of the earliest entrants into the field. We placed in service six of the largest solar energy projects in the State, totaling approximately 5 MW. These projects include the: Kapolei Sustainable Energy Park (1.18 MW), Pearl City Peninsula Renewable Energy Park (1.28 MW), Twelker Solar Farm (Wai'anae; 0.60 MW), Olsen Solar Farm (Wai'anae; 0.60 MW), Arthurs Solar (Wai'anae; 0.60 MW), and Phan Solar (Wai'anae; 0.57 MW). Forest City was also involved in the installation of approximately 30 MW of photovoltaic panels on the roofs of our portfolio of military housing here in the State of Hawai'i.

8. Have you been involved in any other types of development projects in Hawai'i?

Yes. In my role with Alaka'i, we are developing a 318-unit workforce rental apartment community in West Oahu called The Element, which is leasing now. Alaka'i is also advancing a mixed-use apartment community in Kakaako, which is a mixed-use project that will implement rental housing with a public elementary school.

With Forest City I worked to redevelop a portfolio of approximately 6,500 homes in a partnership with the Navy and Marine Corps, most of which had to be completely rebuilt, in additional to historic renovations and other improvements. I also oversaw the development of the Kapolei Lofts, a 499-unit market-rate rental housing development in Kapolei, which integrates a 2.8 MW photovoltaic system that generates more than half of the energy used by residents.

9. You have considerable experience in real estate and solar farm development in Hawaii. Based on your experience, does proximity to a solar farm affect real estate values?

My passions have moved to sustainable workforce housing where I integrate solar with affordable housing but I have also sat on Urban Land Institute's Residential Neighborhood Development Council and have developed master-planned communities and developed within master-planned communities, many of which have receive national recognition. There is no evidence that a solar farm decreases land values.

A buyer within a typical suburban residential neighborhood wants to be surrounded by more housing, schools, parks, and service retail. From that perspective, a solar farm will not be on the wish-list of a prospective purchaser, but all knowledgeable land use professionals know that a low-impact solar farm makes for a great neighbor. Arguably, better neighbors than industrial uses.

10. Are you familiar with the proposed development of a solar farm as an interim use of Parcel 52 under Docket A92-683?

Yes. The currently proposed solar farm project consists of a 52 MW photovoltaic system, paired with a 52 MW/208 megawatt-hours battery energy storage system with a four-hour duration at full capacity, and includes related electrical improvements and structures and utility tie-ins (the "**Project**" or the "**2020 Solar Project**"). The Project is proposed to be installed within the 161.02-acre parcel owned by Robinson Kunia Land, LLC ("**Robinson**") (and subject to Ho'ohana's ground lease), located at TMK No. (1) 9-4-002:053 ("**Parcel 52**"), in the Kunia area. Parcel 52 is the same property that this Commission approved for solar farm development under the 2015 Order.

11. <u>Is the 2020 Project different from the project the Commission approved under the 2015 Order?</u>

Yes, it is different in terms of amount of renewable energy to be produced, the efficiency of the use of the Parcel 52 land, and the project timeframes.

The project the Commission approved under the 2015 Order was a 20 MW project (the "2015 Solar Project"). For that project, the Commission authorized an operational period, excluding decommissioning, not to exceed 35 years from the date of the 2015 D&O (i.e. operational period to end January 2050).

For the 2020 Solar Project, in addition to increase the renewable energy generation from 20 to 50 MW, Ho'ohana is requesting a 40 year operational period. Taking construction and decommissioning into account, Ho'ohana is requesting Commission approval to use Parcel 52 for the 2020 Solar Project for a total of 43 years.

In comparison to the 20 MW 2015 Solar Project, the 50 MW 2020 Solar Project will provide a 160% increase in renewable energy generation capacity at a lower price, due to improved technology and more efficient design.

12. <u>In what way is Ho'ohana requesting Commission approval of the 2020 Solar Project?</u>

Ho'ohana filed a Motion for Modification and Time Extension with the Commission on August 17, 2020 ("**Motion**"), requesting Commission approval for some modifications to what the Commission had approved under the 2015 Order. I am familiar with that Motion and filings thereunder.

13. How did you decide that Parcel 52 is feasible for development of the Project?

We determined Parcel 52 was a good location for a utility-scale solar energy project for a number of reasons. Parcel 52 is ideal for solar energy generation development because the area receives a lot of natural sunlight and is relatively level. We could site the Project in a low-impact, environmentally friendly location which will still allow Parcel 52 to be developed as the residential community for which it was intended in the future, and would be a good low-impact "neighbor" should any of the surrounding and vacant properties that are also planned for residential development get developed in the future.

Additionally, Parcel 52 is very close to good points of interconnection with the Hawaiian Electric Company, Inc. ("**HECO**") grid. HECO has a 138 kV transmission system that runs just outside of Parcel 52's northern boundary, and HECO has a 46 kV line that runs through Parcel 52. Those existing lines can be seen in various graphics and photos that G70 prepared for Ho'ohana. See Pet. Ex. 25, 24, 26, 27.

HECO also seems to think that Parcel 52 is a good place for solar development. HECO had selected Ho'ohana and Parcel 52 for development of the 2015 Solar Project. Unfortunately (at least, at the time we thought it was unfortunate) after this Commission approved the requested land use for the 2015 Solar Project, the Hawaii Public Utilities Commission ("PUC") rejected HECO's request for approval of numerous Power Purchase Agreements ("PPA"), including HECO's PPA with Ho'ohana. For that reason alone the 2015 Solar Project was not built.

The good news, however, is that in 2018 the PUC approved HECO's request to engage in another round of competitive procurement for renewable energy projects. Thereafter HECO issued requests for proposals and selected Ho'ohana to be one of the developers of new renewable energy projects in Hawaii. The PUC approved the PPA between Ho'ohana and HECO in 2019.

14. <u>Describe Ho'ohana's relationship with Robinson Kunia Land, LLC, and Ho'ohana's interest in Parcel 52.</u>

Robinson is the fee owner of Parcel 52. At the time of the 2015 Order, Ho'ohana did not have any lease or easement over Parcel 52. Robinson had executed an Option Agreement with Forest City, giving Forest City an exclusive and irrevocable option to lease Parcel 52 for the development, construction and operation of a solar power electricity generating project. Because the 2015 Solar Project could not go forward, the option was not exercised.

Now, however, Ho'ohana has a long-term ground lease for Parcel 52 for the purpose of developing a utility-scale solar farm. A Memorandum of Lease and Easements was recorded in the Bureau of Conveyances of the State of Hawai'i on March 23, 2020, as Regular System Document No. A73870244. Ho'ohana's term under the lease totals 37 years. There is an initial term that runs for 22 years from the operations commencement date (meaning the date that the 2020 Solar Project is operational and selling power), followed by Ho'ohana's option to extend the lease through three five-year extensions. Robinson also provided fee owner authorization permitting Ho'ohana to file the pending Motion. (Pet. Ex. 2).

15. Was the 2015 Solar Project a matter of public record?

Absolutely, in several respects. First of all, my understanding is that all Commission proceedings are matters of public record. I know that the 2015 Order and related filings are all available on the Commission's website. Moreover, all of the landowners within this Commission Docket were notified of the proceedings in 2014/2015 and several of them participated.

Secondly, the conditions of the 2015 Order were recorded against all of the properties in this Docket under a Declaration of Conditions Imposed by the State Land Use Commission, recorded on March 30, 2015. See Pet. Ex. 15. That Declaration was signed by Ho'ohana, Robinson, HRT Realty, LLC, 300 Corporation, and Honolulu Limited. After HECO awarded Ho'ohana the current Project, that was reported by the Honolulu Star Advertiser on March 27, 2019 (Pet. Ex. 33).

I personally also made efforts to make contact with all of the owners of land subject to this Commission Docket.

16. Are those the same entities that own the Petition Area land now?

Some yes, some no. Below is the ownership of the Petition Area land from 2015 to present.

TMK Parcel	2015 Ownership	Interim Ownership	Ownership as of August 2020
9-4-002: 001 ("Parcel 1")	HRT Realty, LLC ("HRT"); 300 Corporation; Honolulu Limited	HRT	HRT (under contract to sell to Jupiter Investors II, LLC ("Jupiter"))
9-4-002: 070 ("Parcel 70")	HRT; 300 Corporation; Honolulu Limited	HRT	Haseko Royal Kunia, LLC (" Haseko "), 8/12/2020
9-4-002: 078 ("Parcel 78")	HRT; 300 Corporation; Honolulu Limited	HRT	Haseko, 8/12/2020
9-4-002: 071 ("Parcel 71")	Canpartners IV Royal Kunia Property LLC	RP2 Ventures, LLC ("RP2"), 9/29/2017	Haseko, 8/12/2020
9-4-002: 079 ("Parcel 79")	RKES LLC	RKES LLC	RKES LLC
Parcel 52	Robinson	Robinson	Robinson

17. Who among those past and current landowners have you been in touch with about the 2020 Solar Project?

All of them, including Jupiter, which is not a landowner but who apparently is under contract to purchase the approximately 123 acre Industrial zoned property at TMK Parcel 1 from HRT.

In January 2020, I reached out to RP2 to discuss matters of importance for both Parcel 52 and Parcel 71 and to establish a working relationship. Parcel 71 is adjacent to the southern boundary of Parcel 52. See Pet. Ex. 1. It was then that I learned that RP2 was under contract to sell Parcel 71 to Haseko. On numerous occasions I tried to engage with Haseko, but was ignored.

In late July of this year, I had counsel for Ho'ohana send me a draft of the Motion and exhibits, and I emailed that draft to representatives of HRT (Giorgio Caldarone), RP2 (David Tanoue), attorney for Robinson, Stephen Mau. David Tanoue asked me to have the draft Motion sent to Haseko (Sharene Tam), Jupiter (Norman Tatch and Ed St. Gene), and that was done on or around August 4. (Pet. Ex. 18). I did this so that those landowners and buyers would have an opportunity to review our Motion prior to filing and ask any questions that they might have.

At my direction, counsel for Ho'ohana also sent an advance draft of the Motion and exhibits to the Hawaii State Energy Office and the State Department of Agriculture ("DOA") a few weeks prior to filing the Motion, so that those agencies would have the opportunity to review the 2020 Solar Project and ask questions before Ho'ohana actually filed the Motion.

18. Have you met with any governmental agencies about the 2020 Solar Project?

Yes, several, going back over the past couple of years. However, I will mention just a few of our more recent agency meetings.

I and others on the Ho'ohana team met with a large team of planners and directors of the Department of Planning and Permitting ("**DPP**") in April 2020 to discuss the changes between the 2015 Solar Project and the 2020 Solar Project. In fact, based on feedback from DPP, Ho'ohana redesigned the 2020 Solar Project to make it more dense and entirely within Parcel 52.

On July 27, 2020, I and others on the Ho'ohana team meet with the Office of Planning ("OP") to discuss the 2020 Solar Project. At that meeting, OP staff said that Ho'ohana's Motion for the 2020 Project should not be heard by the Commission before the motion OP anticipated RP2 would be filing in cooperation with the DOA to have the Commission incorporate the terms of the Fourth Amendment to Amendment and Restatement of Memorandum of Understanding, dated March 16, 2020, by and between RP2 and DOA ("2020 DOA MOU") (Pet. Ex. 19f) into the Commission's orders in this Docket.

On August 26th, 2020 members of the Ho'ohana development team also had a meeting with the DOA. The purpose of this meeting was to attempt to clear up confusion associated with the non-potable water-line that was agreed to in 2015. At that time, after the Commission's approval of the 2015 Solar Project, there were a series of meetings

and correspondences with the DOA and many members of the Ho'ohana development team. We had advanced plans with the DOA to create a non-potable waterline solution that would meet the DOA needs for a cost of approximately \$300K. We had also noticed that RP2 had taken on the obligations to build the water-line and were therefore very confused. We were not provided with the plans that RM Towill had prepared (or was preparing) for RP2 and Haseko. Therefore, one of the first orders of business with the DOA last month was to ask DOA for support and try to unwind the confusion about the waterline that RP2/Haseko were planning to construct..

19. Did RP2 or the DOA file a motion with the Commission?

No. Oddly, though, in late August, after Haseko closed on Parcel 71, David Tanoue forwarded me, counsel for Ho'ohana, and others, an email from Janice Fujimoto of DOA. See Pet. Ex. 34. We had been led to expect that a motion would be filed to get the 2020 DOA MOU incorporated into the conditions under this Docket, so the fact that a motion had been prepared was not especially strange, but the nature of the filing and the plan of action described by Ms. Fujimoto was surprising.

The motion was prepared as if it were to be filed by Haseko. Yet, the draft was provided by Ms. Fujimoto of DOA and her email transmittal indicated that it was being sent to RP2 and Haseko for review, thereby suggesting that the package of documents had been prepared by DOA. Ms. Fujimoto's email to Mr. Tanoue states:

Hi David -

Attached is the draft LUC motion for RP2 and Haseko to review. Could you please forward to Haseko, and any other pertinent parties? Thank you so much.

Please note that there may be minor tweaks to the document(s). Office of Planning and HDOA will be reviewing these documents simultaneously with you and Haseko. An advance copy will also go to LUC staff later.

The motion does two things:

- 1. Recognizes Haseko as the new owner.
- 2. Incorporates the 4th MOU into the Orders so the deadlines are incorporated.

The way it's been explained to me is that Haseko will file as the new owner and RP2 will file a Statement of Support. HDOA can file a similar statement and will sign off on the Verification of the Exhibits. The package is currently missing Exhibit "E" which is the deed coming from RP2.

LUC is holding September 24, 2020 as our Zoom hearing date. Our AG is targeting September 4, 2020 for submission to LUC. As such, please provide any comments from RP2 and Haseko by Tuesday, September 1, 2020.

-Janice

The motion attached to Ms. Fujimoto's email embodied a request by Haseko, as the "Successor Petitioner (to Parcel 71)", asking the Commission to "incorporate the terms of the 2020 [DOA] MOU entered into between RP2 and the State with regard to the design and construction of the off-site improvements to the State Ag Park." See Pet. Ex. 34.

20. What does the 2020 DOA MOU require and of whom?

The 2020 DOA MOU (Pet. Ex. 19f) requires the owner of Parcel 71 to complete significant off-site infrastructure to support the DOA Agriculture Park. Section E of the 2020 DOA MOU provides in relevant part:

RP2 shall design and construct off-site infrastructure improvements for the State Agricultural Park including roadway, potable and irrigation lines (exclusive of water commitment), and sewer lines and utility connections, up to the property boundary of the State Agricultural Park at no cost to the DOA. These off-site infrastructure improvements shall be sufficient to service the agricultural uses contemplated by the DOA for the State Agricultural Park and shall be sufficient to service the maximum of fifty (50) agricultural farm dwellings or farm employee housing units (if the DOA determines that the same shall be part of the State Agricultural Park). . .

After the DOA approves the offsite infrastructure plans, RP2 shall, at its sole cost and expense, (i) obtain all necessary governmental permits and approvals for construction of such off-site infrastructure, (ii) arrange for and complete the construction and installation of the irrigation infrastructure no later than February 28, 2021, and (iii) arrange for and complete the construction and installation of the remainder of the off-site infrastructure to service the State Agricultural Park no later than June 30, 2020, June 30, 2021, unless approved by DOA.

(emphases added; strikethrough in original).

In return, DOA promised to "assist and support RP2 in its efforts to obtain and maintain the necessary land use approvals for the Royal Kunia Phase II project, as well as in RP2's efforts to obtain the necessary off-site infrastructure permit approvals." See 2020 DOA MOU (Pet. Ex. 19f) at p. 4.

21. <u>Is it your understanding that Haseko, as the owner of Parcel 71, is responsible for all of the infrastructure needed for the DOA Agriculture Park?</u>

Obviously that is the case. And the draft motion that Ms. Fujimoto circulated confirmed that to be Haseko's understanding as well as DOA's understanding. DOA had also confirmed that obligation in its transmittal letter to Haseko and RP2 of May 12, 2020, and copied to the Commission and OP (see Pet. Ex. 19f), wherein Mr. Brian Kau of DOA

wrote "We understand that RP2 is in the process of selling property in Royal Kunia to Haseko, including their obligations under the LUC Amended Order and the Fourth MOU. . . . The DOA expects RP2's successor to comply with the previously agreed upon terms."

Moreover, in Haseko's August 25, 2020 filing against the 2020 Solar Project, Haseko confirmed that all of the obligations that belonged to RP2 as party to the 2020 DOA MOU and as the owner of Parcel 71, were assigned to and assumed by Haseko under an "Assignment and Assumption of Amendment and Restatement of Memorandum of Understanding."

22. <u>Did Ho'ohana have any obligations to the DOA?</u>

Yes. Under the 2015 Order, Condition B.1., the Commission mandated that if the 2015 Solar Project got built, Ho'ohana would have to, concurrent with the construction of the 2015 Solar Project, design and provide an offsite, non-potable waterline from Reservoir 225 to the boundary of the Royal Kunia Agricultural Park to specifications mutually acceptable to Ho'ohana and the Department of Agriculture. Before providing the non-potable waterline, Ho'ohana was required, at its sole cost and expense, to cause Robinson to grant any required non-exclusive, perpetual utility easement(s) to the State of Hawaii for the alignment of the non-potable waterline. Ho' ohana was also required to provide contracted maintenance on the installed non-potable waterline and maintain the non-potable waterline in an operable condition for the duration of the operation of the solar farm at no cost to the State. DOA was solely responsible for obtaining the non-potable water allocation to service the Royal Kunia Agricultural Park. See 2015 Order (Pet. Ex. 16), at p. 54.

23. What happened with that waterline?

Ho'ohana procured an engineering study from ITC Water Management that identified two options for satisfying Condition B.1: (i) retrofitting an existing 24" waterline that crosses land owned by Robinson at a cost of approximately \$16,000; or (ii) installing a new 12" waterline along Kunia Road at a cost of approximately \$300,000. See Pet. Ex. 21a (graphic depicting options); Pet. Ex. 21b (email from ITC Water Management providing estimate of \$275,000 to \$300,000).

We presented those two options to the staff at DOA. Staff expressed a preference for option (ii). In follow up, Joanne (Nonie) Toledo Hamm, who was (and remains) part of the Ho'ohana team working on community outreach, emailed then-Chair Scott Enright, on July 18, 2015, documenting the discussions with DOA staff and requesting Chair Enright's final decision on the matter. (See Pet. Ex. 22). However, shortly thereafter the PUC made its final decision rejecting the Power Purchase Agreement between HECO and Ho'ohana, putting an end to the 2020 Solar Project.

24. Do you have any information about the manner in which RP2 (and now Haseko) as committed to providing off-site infrastructure in compliance with the 2002 DOA MOU?

Based on my preliminary review of a copy of some construction plans that I obtained

from a third party (see Pet. Ex. 23), the waterline that RP2 agreed to build (and which obligation Haseko assumed), I estimate will cost at least \$1,000,000 to construct. A waterline of the nature designed by RP2 cost between \$300 and \$500 per linear foot. This large range is largely a function of the regulatory requirements.

However, it has been communicated to me by the Robinson Trust that the engineers' estimate for the RP2/Haseko designed waterline is estimated to cost \$2,200,000. Generally speaking, engineer's estimates are higher than estimates from contractors. When we received the plans for the RM Towill-designed waterline (not from the DOA, Haseko, RP2, or RM Towill, but from the Robinson Trust), we provided them to Goodfellow for contractor and subcontractor pricing and are awaiting those estimates.

25. <u>Could Ho'ohana construct the waterline as proposed by RP2, and now assigned to Haseko?</u>

An added cost of that magnitude would kill the 2020 Solar Project. Larry Greene can explain this better than I can, but it is important for the Commission to understand that just because the 2020 Solar Project generates more MW than the 2015 Solar Project, that does not mean that Ho'ohana will get paid more money under its Power Purchase Agreement (PPA) with HECO. In fact, the PPA price for the new project over 1/3 lower despite the higher initial cost of a much large solar farm, with the addition of costly battery storage, and additional costs incurred to redesign the project to fit entirely within Parcel 52 in order to completely avoid impacts to agricultural lands, which DPP and DOA preferred.

Ho'ohana remains committed to supporting the DOA and the Ag Park at a level commensurate with its obligations under Condition B.1. of the 2015 Order. This means providing a non-potable waterline at "specifications mutually agreeable to Ho'ohana and the [DOA]" concurrently with the development of the 2020 Solar Project, or providing funding toward the waterline construction in an amount commensurate with the costs Ho'ohana and DOA negotiated in 2015. However, Ho'ohana cannot (and should not) fulfill the significantly greater and more expansive obligations that RP2 (and its predecessors) made to the DOA, and that Haseko assumed with its purchase of Parcel 71.

Ho'ohana also cannot agree to fulfill such obligations before even breaking ground on the 2020 Solar Project, which is what OP proposes. Frankly, we cannot understand why OP is urging this Commission to force Ho'ohana to take on an obligation that is so clearly legally binding on Haseko. It is confounding how OP and DOA, two important State agencies, suddenly seem perfectly comfortable to let Haseko out of its contractual obligations under the 2020 DOA MOU. Only a month ago DOA was circulating a draft Haseko motion requesting that the Commission incorporate the 2020 DOA MOU into this Docket.

26. <u>Does the waterline in the RP2 construction plans require an easement from the Robinsons?</u>

Yes.

DATED: Honolulu, Hawaiʻi, September 25, 2020

Respectfully submitted,

JON WALLENSTROM

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