Appendix 25

2020 Annual Compliance Report prepared by A&B

ALEXANDER & BALDWIN
PARTNERS FOR HAWAI'I

July 6, 2021

Mr. Daniel E. Orodenker
Executive Officer
Land Use Commission
State of Hawaii
P.O. Box 2359
Honolulu, HI 96804-2359

Subject: 2021 Annual Report to the State Land Use Commission
Docket Nos. A03-739 and A88-634
Maui Business Park Phase II

Dear Mr. Orodenker:

This letter constitutes A&B Properties Hawaii, LLC's ("A&B" or "Petitioner") 2021 annual report to the State Land Use Commission ("SLUC") pursuant to Condition No. 22 under Docket No. A03-739 and Condition No. 23 under Docket No. A88-634. Inasmuch as both land use dockets involve the reclassification of land comprising the proposed 179-acre Maui Business Park Phase II project ("Project"), the annual report requirements under both dockets are being addressed in this report.

Project Background and Status

By its Decision and Order dated March 25, 2004, under Docket No. A03-739, the SLUC granted approval of A&B's petition to reclassify approximately 138.158 acres from the "Agricultural" to the "Urban" land use district at Kahului, Maui, Hawaii. Subsequently, by its Decision and Order dated June 13, 2005, under Docket No. A88-634, the SLUC granted approval of A&B's application for incremental approval of 33.53 acres to the "Urban" land use district at Kahului, Maui, Hawaii. The lands which comprise these two dockets, along with an additional approximately 7.3 acres that were already designated within the Urban District, make up the 179-acre Project site. The Project is a continuation of the existing Maui Business Park situated in Kahului, Maui, Hawaii.

A change in zoning application was filed in April 2004 with the County of Maui to attain the light industrial zoning necessary for the Project to proceed. In May 2005, the Maui Planning Commission voted to recommend approval of the zoning application to

the Maui County Council. Subsequently, in April 2008 the County Council approved the zoning bill and it was enacted as Ordinance No. 3559 in May 2008.

Construction of an offsite private water system that will serve the Project commenced in February 2011 and has been completed. Construction of other infrastructure improvements including drainage, sewer, and water systems, and roadways were substantially completed in March 2013. Offsite improvements to Hana Highway commenced in April 2013 and have been completed.

Sales and marketing of the Project commenced in June 2012, following the issuance of a Preliminary Order of Subdivision Registration (included in 2012 annual report). On October 31, 2014, a Final Order of Registration for Maui Business Park, Phase II, South Project Increment IB, was issued by the State Department of Commerce and Consumer Affairs. Lots are being marketed to various prospective buyers and where warranted, lots are being modified to suit buyers' needs.

Status of Activities Relating to Imposed Conditions

Listed below are each of the conditions imposed by the SLUC and the status of activities pertaining to each respective condition. Note that the listed conditions are applicable to both Docket A03-739 and Docket A88-634 unless otherwise indicated.

Dockets A03-739 & A88-634

1a. ***Housing Study.*** *Within one hundred eighty days (180) of this decision and order, the Petitioner shall complete and submit to and for the approval of the Commission, with copies to the Department of Planning, the Department of Housing and Human Concerns and the Office of Planning, a housing study that addresses the following:*

i. The impact the Project will have on the current labor force;

ii. The type of employee/affordable housing demands that will be created by the Project;

iii. Any employee/affordable housing policy adopted and in place by the County for commercial and industrial developments;

iv. The proposed mitigation measures to alleviate the impact on both the labor market and the employee/affordable housing situation, including, but not limited to, the acreage, siting, timing, type of housing and eligibility for the employee/affordable housing project and the identity of potential developers and recipient of land to be contributed and conveyed by Petitioner for affordable/employee housing (collectively, the "Proposed Mitigation Measures"); and

v. Recommendations and timeframe for implementing any applicable county housing policy (in place at the time of this study) or requirements and/or the

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Petitioner's proposed mitigation measures, including the minimum contribution of land described in Condition 1b immediately herein below (collectively, the "Proposed Timeline").

The reclassification of the Petition Area, as described in this Decision and Order, shall be subject to the further condition of Petitioner's compliance with the Proposed Mitigation Measures and Proposed Timeline, as modified and/or approved by the Commission (the "Approved Mitigation Measures and Timeline").

1b. ***Minimum Contribution of Land by the Petitioner.*** *In compliance and consistent with the Approved Mitigation Measures and Timeline, Petitioner shall contribute, no later than one (1) year after any Maui County zoning approval authorizing the use of the Property for light industrial and/or commercial use, to the County of Maui or a non-profit housing entity or other appropriate entity, a minimum of ten (10) acres of land useable for residential development within the Central Maui region reasonably acceptable to the County of Maui towards development of employee/affordable housing or satisfy such more stringent employee/affordable housing requirements for the Project as may be imposed by the Maui County Council. The Approved Mitigation Measures and Timeline shall be an obligation of the recipient of the land conveyed for affordable housing purposes, as memorialized in the conveyance document from the Petitioner to such recipient.*

Status: In compliance with this condition, Petitioner prepared and submitted the subject housing study to the SLUC in September 2004. The study focused on the increased housing unit demand due to the in-migration of job seekers at the Project. Based on the study, approximately 13 acres of land for affordable housing would be needed. The timing of the demand for these units would be over an approximately 13-year period from 2008 through 2020. The analysis confirmed that the preferable location for the land contribution would be in the Central Maui region. By letter dated November 10, 2004 the Maui Department of Housing and Human Concerns concurred with the findings of the housing study and recommended its approval to the Maui Planning Department. It should also be noted that although the Maui County's Residential Workforce Housing Policy was enacted in 2006, it did not address nor specify affordable housing requirements for commercial and industrial projects.

Affordable housing requirements related to the Project were deliberated by the Maui County Council as part of the zoning application. The Council, as a condition of zoning for the Project, has required the Petitioner to contribute a total of 50 acres of land for affordable housing, community center and park purposes. The specific provisions of the zoning condition are described below.

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> *"7. That Alexander & Baldwin, Inc. shall provide land for affordable housing, a community multi-purpose center, and park purposes at the approximate location of the terminus of Kamehameha Avenue, near the new Maui Lani Park and Pomaikai Elementary School, as follows:*
>
> *a. Approximately 40 acres for affordable housing purposes;*
>
> *b. Approximately 7 acres for a Kahului community multi-purpose center; and*
>
> *c. Approximately 3 acres for park purposes.*
>
> *The precise location of these lands shall be acceptable to the Department of Housing and Human Concerns and the Department of Parks and Recreation, and Alexander & Baldwin, Inc. shall perform archaeological and topographic surveys of the land for the County's evaluation of the property's acceptability."*

As a result of initial land planning work and discussions with various representatives of the County, a suitable location within the Petitioner's Waiale master planned residential community just south of the Maui Lani development was identified.

In August 2010, Petitioner filed a land use petition with the State Land Use Commission to reclassify the Waiale lands from the Agricultural to the Urban District. The SLUC subsequently conducted hearings on the Waiale petition and in June 2012 approved the reclassification of the land. Pursuant to Petitioner's discussions with the County, an application to subdivide parcels for affordable housing, community center and park sites, was filed in April, 2015. Additionally, the Petitioner worked with the County Department of Housing and Human Concerns in developing conceptual housing plans for the lands to be dedicated to the County for affordable housing and park use. With the receipt of final subdivision approval, draft deeds and other applicable conveyance documents were transmitted to the County Departments of Parks and Recreation and Housing and Human Concerns in March 2018. The dedication of lands per this requirement is with the Maui County Council for appropriate action.

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Dockets A03-739 & A88-634

2. ***Water Facilities.*** *Petitioner shall participate in the funding and construction of adequate water source, storage and transmission facilities and improvements or remit applicable fees for water source, storage and transmission facilities and improvements to accommodate projected water usage generated by the Project. Water facilities and improvements, including adequate storage facilities, should surface water sources be developed, or the payment of applicable fees, shall be coordinated and approved by the County of Maui, Department of Water Supply and, if applicable, the Commission on Water Resources Management of the Department of Land and Natural Resources. Adequate water source shall be made available prior to the issuance of any occupancy permits for buildings developed on the Property.*

Status: Construction of an offsite water system comprised of two wells, pumps, equipment, and storage and transmission facilities was completed in December 2011. This private water system is sufficient to provide potable water for the Maui Business Park Phase II project. On March 24, 2014, the Safe Drinking Water Branch of the State Department of Health, granted conditional approval for Maui Business Park II Water System to operate as a Public Water System No. 261.

Dockets A03-739 & A88-634

3. ***Aircraft Operations.*** *Petitioner shall implement procedures to address notification and liability issues which arise from the potential adverse impacts from noise, right of flight, emissions, vibrations and other incidences of aircraft operations upon the present and future Owners and future lessees or occupants of the Property resulting from the adjacent Kahului Airport operations. The following covenant shall encumber the Property and be included in any transfer of any interest in the Property.*

> *"The Property is located in the vicinity of Kahului Airport, a commercial airport, and each Owner is aware that there is a likelihood of noise from aircraft passing overhead or nearby and other potential adverse impacts from other incidence of aircraft operation. Each Owner hereby assumes the risk of any potential adverse impacts from such noise, right of flight, emissions, vibrations or other incidents of aircraft operations upon the Owner's lot or uses thereon. Each Owner shall be responsible for appropriate mitigation measures to address the abovementioned potential adverse impacts. Each Owner shall indemnify and hold harmless Declarant and the State of Hawaii from and against all claims, liability and losses that arise out of noise, right of flight, emissions, vibrations and other incidences of aircraft operations, unless such claim, liability or loss arises out of the State of Hawaii's willful misconduct in the operation of Kahului Airport or violating any applicable federal, state or*

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county requirement governing aircraft safety and noise abatement measures, in which case, the indemnification of the State of Hawaii will be inapplicable."

Status: In accordance with this condition, the above language has been incorporated into the Declaration of Covenants and Restrictions for the Project.

Dockets A03-739 & A88-634

4. ***FAA Form 7460-1, Notice of Proposed Construction or Alteration.*** *Petitioner shall impose a covenant encumbering the Property and be included in any transfer of any interest in the Property requiring the submittal of Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA's Hawaii District Office when or if required under applicable FAA Regulations with a copy to DOT's Airports Division.*

Status: The following language has been incorporated into the Declaration of Covenants and Restrictions recorded at the Bureau of Conveyances.

"Each Owner is aware of the obligation to submit Federal Aviation Administration ("FAA") Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA's Hawaii District Office and will submit the same when or if required under applicable FAA Regulations with a copy to DOT's Airports Division."

Dockets A03-739 & A88-634

5. ***Runway Protection Zone.*** *Petitioner acknowledges that a portion of Petition Area A overlaps the runway protection zone (hereinafter "RPZ") for a proposed extension of the Kahului Airport runway of up to 9,600 feet in length, as further described in the State Office of Planning's Exhibits Nos. 9 and 10 and the testimony of DOT Airports Division witness Benjamin Schlapak. Petitioner agrees to restrict uses in the RPZ to light industrial, parking, roadway and other infrastructure uses that do not entail the congregation of people, provided all such uses are approved by the Federal Aviation Administration. This restriction on uses within the RPZ shall automatically terminate if the State Department of Transportation (DOT) does not attain all governmental approvals for the extension of the Kahului Airport runway within a period of five (5) years from March 25, 2004, the date of the Commission's Decision and Order in Docket No. A03-739. Notwithstanding the foregoing, and for good cause shown, the Commission may grant an extension of time for the DOT if DOT during such five-year period has been using its best efforts, in good faith, to attain all governmental approvals for the extension of the Kahului Airport runway. The size of the RPZ shall be adjusted if the runway length sought by the DOT is less than 9,600 feet. Should the DOT desire to acquire an easement or the fee simple interest in the*

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RPZ, the fair market value of the land shall be based on its current Agricultural District classification and present zoning designation by the County of Maui provided that: a) the acquisition occurs within a period of five (5) years from March 25, 2004, the date of the Commission's Decision and Order in Docket No. A03-739; and b) the DOT during such five-year period has been using its best efforts, in good faith, to attain all governmental approvals for the extension of the Kahului Airport runway.

Status: In July 2012, Petitioner and DOT executed a Memorandum of Understanding setting forth the terms for the transfer of portions of the Petition area to DOT for the proposed RPZ. A draft Memorandum of Agreement incorporating such terms was submitted to DOT in April 2013 (included in 2013 annual report). In December, 2016 the DOT acquired approximately 3.7 acres of the Project area for the RPZ.

Dockets A03-739 & A88-634

*6. **Traffic Impact Analysis Report.** Prior to obtaining County zoning, Petitioner shall revise or supplement its traffic impact analysis report (hereafter TIAR) dated May 2003 to the satisfaction of the DOT. The TIAR shall identify the impact of Petitioner's project on the transportation system and recommend any required mitigation measures. Conditions and assumptions reflected in the TIAR shall be developed in consultation with DOT, including but not limited to, various proportions of retail and light industrial uses to be developed at the Property, plans for the proposed airport access road, permitted accesses, trip generation rates, and traffic projections. Petitioner shall obtain the DOT's prior written approval of the final TIAR and Petitioner may not proceed with the development of Petitioner's project unless and until the DOT approves the TIAR. As development occurs within the Property, the TIAR shall be revised or supplemented as may be requested and required by the DOT. Petitioner shall be responsible for constructing, implementing and/or contributing its fair share of the cost of those improvements or mitigation measures as recommended or required by the TIAR and as dictated by the actual proportion of light industrial and retail uses developed at the Property. The TIAR shall also address the impact to County of Maui roadways and shall be submitted to the County of Maui, Department of Planning for the County's review and consideration in the zoning approval process.*

Status: Petitioner prepared a revised TIAR for the Project dated July 2004 in compliance with this condition. The revised TIAR updates the previous study dated May 2003. The study was revised in response to comments received from the DOT concerning completion of the proposed Airport Access Road and development scenarios with a higher percentage of retail versus industrial uses. Prior to preparing the revised TIAR, input concerning applicable assumptions was solicited and obtained from the DOT. A copy of the revised TIAR was

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included in the environmental impact statement that was prepared for the Project and accepted by the SLUC.

In an effort to further update the traffic data for key intersections analyzed in the TIAR, new traffic counts were undertaken in 2006. The results of the 2006 traffic counts were consistent with the projections of the TIAR, confirming the validity of the conclusions and recommendations of the TIAR. The DOT reviewed the 2006 supplemental traffic counts and found them reasonably consistent with the 2004 traffic report assumptions concerning growth in regional traffic.

In further compliance with this condition, Petitioner updated the TIAR with new traffic counts in June 2010. The updated TIAR served as the basis for development of construction drawings and discussions with DOT regarding Petitioner's fair share contribution toward regional transportation improvements.

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7. ***Regional Transportation Improvements.*** *Petitioner shall contribute Petitioner's fair share of the cost of regional transportation improvements in the area, as such fair share shall be determined by the DOT based on appropriate transportation planning methodologies to establish a rational nexus.*

Status: In 2006, Petitioner worked in cooperation with the State Department of Transportation-Maui District Office, to fund and implement the coordination of traffic signals during the AM and PM peak periods along the Dairy Road corridor from Haleakala Highway to Puunene Avenue. This work consisted of an evaluation of existing traffic signal equipment, the procurement and installation of new traffic signal equipment and communication systems, and the preparation and implementation of timing plans to coordinate the traffic signals at all intersections. The system was activated in December 2006.

In September 2012, Petitioner executed an agreement with the DOT concerning fair share costs and contributions, in compliance with this condition. A copy of the agreement was previously provided to the SLUC.

The Petitioner had been in discussions with the DOT regarding the DOT's acquisition of a portion of land near Haleakala Highway for a new onramp to the DOT's Airport Access Road. The onramp would serve south bound traffic in the vicinity of Haleakala Highway. Land costs relating to the onramp were to be charged against the Petitioner's documented fair share contribution, however, in January 2020 the DOT instead requested full payment of the Petitioner's fair share contribution. Pursuant to that request, the Petitioner remitted the amount

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of $4,601,026.00 to the DOT in February 2020 in full payment of its fair share contribution.

Dockets A03-739 & A88-634
8. ***Best Management Practices.*** *The Petitioner shall coordinate with the County of Maui, the State Department of Land and Natural Resources and the State Department of Health to establish Best Management Practices to contain spills, and prevent materials associated with light industrial uses such as petroleum products, chemicals, and other pollutants from leaching or draining into the ground or the storm drain system.*

Status: Petitioner acknowledges this condition, and as development of the Project progresses, will continue to comply with this condition.

Dockets A03-739 & A88-634
9. ***Hazardous Materials.*** *Storage and/or disposal of hazardous materials shall be approved by the State Department of Health prior to their establishment on the subject Property.*

Status: Petitioner acknowledges this condition, and as development of the Project progresses, will continue to comply with this condition.

Dockets A03-739 & A88-634
10. ***Wastewater Facilities.*** *Petitioner shall provide a sewer impact study to the County Department of Public Works and Environmental Management evaluating the wastewater system requirements for the Project. Petitioner shall fund and develop, as required by the County of Maui and the State Department of Health, wastewater transmission and treatment facilities to accommodate the additional wastewater generated by the Project.*

Status: Petitioner completed a sewer system study for the Project and construction of approved offsite and onsite wastewater facilities has been completed. The County of Maui Department of Environmental Management has acknowledged completion of improvements and satisfaction of this condition (copy provided with 2013 report).

Dockets A03-739 & A88-634
11. ***Drainage.*** *Petitioner shall fund, design and construct any drainage system improvements required to mitigate the additional runoff resulting from the project without creating adverse effects on adjacent and downstream properties. The master*

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drainage plan for Maui Business Park shall be constructed to mitigate the additional runoff resulting from this development.

Status: Petitioner completed a Drainage Report dated October 2010, and submitted the report to appropriate government agencies. Construction of drainage system improvements consistent with the Report has been completed.

Dockets A03-739 & A88-634
12. ***Aircraft Operation Hazards.*** *Petitioner shall fund and implement a program to control any bird nesting or occupation and any insect, pest or wildlife infestation, in any drainage retention basins serving the Property to minimize the hazards to aircraft operations, as deemed necessary by the DOT.*

Status: The Petitioner has consulted with the County of Maui regarding utilizing the existing drainage basins adjacent to the South Project Area for open area recreational use by a private entity (related correspondences concerning this matter were included in the 2010 annual report). Alternatively, the basins will be maintained by the project's owners association. The future use of these existing drainage basins will incorporate the provisions of this condition.

Dockets A03-739 & A88-634
13. ***Provisions of the Hawai'i Right to Farm Act.*** *Petitioner shall inform all prospective occupants of possible odor, noise, and dust pollution resulting from adjacent Agricultural Districts lands, and that the Hawaii Right-to-Farm Act, Chapter 165, HRS, limits the circumstances under which preexisting farming activities may be deemed a nuisance.*

Status: The Declaration of Covenants and Restrictions for the Project includes provisions which satisfy this condition.

Dockets A03-739 & A88-634
14. ***Solid Waste.*** *Petitioner shall develop a Solid Waste Management Plan in conformance with the Integrated Solid Waste Management Act, Chapter 342G, HRS. The Plan shall be approved by the County of Maui and shall address the need to divert the maximum amount of waste material caused by the development away from the County's landfills.*

Status: A solid waste management plan was prepared for the Project and included in the environmental impact statement prepared for the Project.

Dockets A03-739 & A88-634

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15. ***Visual Analysis.*** *That as part of its zoning application submittal, the Petitioner shall submit a visual analysis study for the location of the Hookele Street Extension emphasizing the maintenance of a "view corridor" toward Haleakala.*

Status: The visual analysis study was submitted to the County of Maui as part of the change in zoning application for the Project. The study was also included in the environmental impact statement prepared for the Project. The visual analysis study was reviewed and approved by the Maui Urban Design Review Board on December 7, 2004.

Dockets A03-739 & A88-634
16. ***Visual Impacts.*** *That as part of its zoning application, the Petitioner shall submit design guidelines with renderings on how a landscaped aesthetic visual corridor along all adjacent highways and how a landscaped berm utilizing trees and shrubbery shall be constructed along the entire proposed collector road (Hookele Street Extension) to soften the visual impact of the buildings along the road. (Wailuku-Kahului Community Plan Update).*

Status: The design guidelines were submitted to the County of Maui as part of the change in zoning application for the Project. The design guidelines were reviewed and approved by the Maui Urban Design Review Board on December 7, 2004.

Dockets A03-739 & A88-634
17. ***Dual Water System.*** *Petitioner shall evaluate the feasibility of developing a dual water system for the Project, utilizing non-potable water for landscape irrigation purposes.*

Status: Petitioner received approval of construction plans for a non potable water system for landscape irrigation purposes. The system has been completed with other Project improvements.

Dockets A03-739 & A88-634
18. ***Energy Conservation.*** *Petitioner shall implement energy conservation measures such as the use of solar energy and solar heating and incorporate such measures into the Project.*

Status: Petitioner acknowledges this condition, and as development of the Project progresses, Petitioner will comply with this condition.

Dockets A03-739 & A88-634

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19. ***Project Composition.*** *For a period of eight (8) years from the date of the County's approval of zoning for the Project a total of at least fifty percent (50%) of the Project acreage shall be (a) used and developed by Petitioner for non-retail, light industrial use and/or (b) sold or leased to and developed and used by third-party buyers for non-retail, light industrial use. For this same eight-year period, simultaneous with Petitioner's development or offer for sale or lease of the Property for retail use, Petitioner shall develop or offer for sale or lease an equal amount of acreage within the Property for non-retail, light industrial use. The phrase "light industrial", as used in this paragraph, includes warehousing and distribution types of activity as well as compounding, assembly, or treatment of articles or materials with the exception of heavy manufacturing and processing of raw materials. It is the intent of this paragraph that at the end of the above-described eight-year period, to the extent that the Project is developed or in the process of being developed by Petitioner or any third party, no less than fifty percent (50%) of such development or development in process shall be for non-retail, light industrial purposes.*

Status: As provided herein, the Property was subject to a Declaration of Use Restriction for an eight (8) year period. (Copy previously provided.) As specified by this Condition, the eight (8) year period terminated on May 2, 2016. The Cancellation of Declaration of Use Restriction was provided in the 2016 annual report.

Docket A88-634

20. ***Archaeological.*** *Should any burial, archaeological or historic sites such as artifacts, marine shell concentrations, charcoal deposits, or stone platforms, pavings or walls be found, Petitioner or landowners of the affected properties shall stop work in the immediate vicinity and the SHPD shall be notified immediately. Subsequent work shall proceed after the SHPD authorization has been received and applicable mitigation measures have been implemented.*

Status: Petitioner has been and will continue to comply with this condition through construction of the project.

Dockets A03-739 & A88-634

20./21. ***Compliance with Representations to the Commission.*** *Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in reversion of the Property to its former classification, or change to a more appropriate classification.*

Status: Petitioner is developing the Property in substantial compliance with the representations made to the Commission. The Petitioner sold lands to a

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buyer who plans to seek applicable land use entitlements to allow hotel development within a portion of the Project near Haleakala Highway. The buyer is aware of the need to attain appropriate approvals from the Commission and other government agencies.

Dockets A03-739 & A88-634
21./22. ***Notice of Change to Ownership Interests.*** *Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to development of the Property.*

Status: With the development of the Property, lot sales to the public commenced in 2012 and remain ongoing. The unsold parcels remain under the ownership of Alexander & Baldwin, LLC, Series R and Series T.

Dockets A03-739 & A88-634
22./23. ***Annual Reports.*** *Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of Planning, and the County of Maui Planning Department in connection with the status of the subject project and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission.*

Status: This annual report is being submitted in compliance with this condition for both Dockets A03-739 and A88-634.

Dockets A03-739 & A88-634
23./24. ***Release of Conditions.*** *The Commission may fully or partially release the conditions provided herein as to all or any portion of the Property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.*

Status: Not applicable at this time.

Dockets A03-739 & A88-634
24./25. ***Notice of Imposition of Conditions.*** *Within 7 days of the issuance of the Commission's Decision and Order for the subject reclassification, Petitioner shall (a) record with the Bureau of Conveyances a statement that the Property is subject to conditions imposed herein by the Land Use Commission in the reclassification of the Property, and (b) shall file a copy of such recorded statement with the Commission.*

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ALEXANDER & BALDWIN
PARTNERS FOR HAWAI'I

Status: Docket A03-739: On April 1, 2004 the Notice of the Imposition of Conditions by the SLUC was filed with the Bureau of Conveyances as Document No. 2004-066861 and a copy was filed with the SLUC.

Docket A88-634: On June 17, 2005 the Notice of Imposition of Conditions by the SLUC was filed with the Bureau of Conveyances as Document No. 2005-120343 and a copy was filed with the SLUC.

Dockets A03-739 & A88-634
25./26. ***Recordation of Conditions.*** *Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances pursuant to Section 15-15-92 Hawai'i Administrative Rules.*

Status: Docket A03-739: On April 20, 2004 the Declaration of Conditions imposed by the SLUC was filed with the Bureau of Conveyances as Document Nos. 2004-078771 thru 2004-078772 and a copy was filed with the SLUC.

Docket A88-634: On June 29, 2005 the Declaration of Conditions imposed by the SLUC was filed with the Bureau of Conveyances as Document No. 2005-128814 and a copy was filed with the SLUC.

Please do not hesitate to contact the undersigned should you require any further information regarding this matter. An email .pdf version of this report is also being transmitted to you for your use.

Sincerely,

A&B PROPERTIES HAWAII, LLC

Carol K. Reimann
Vice President

cc: Maui Planning Department
State Office of Planning

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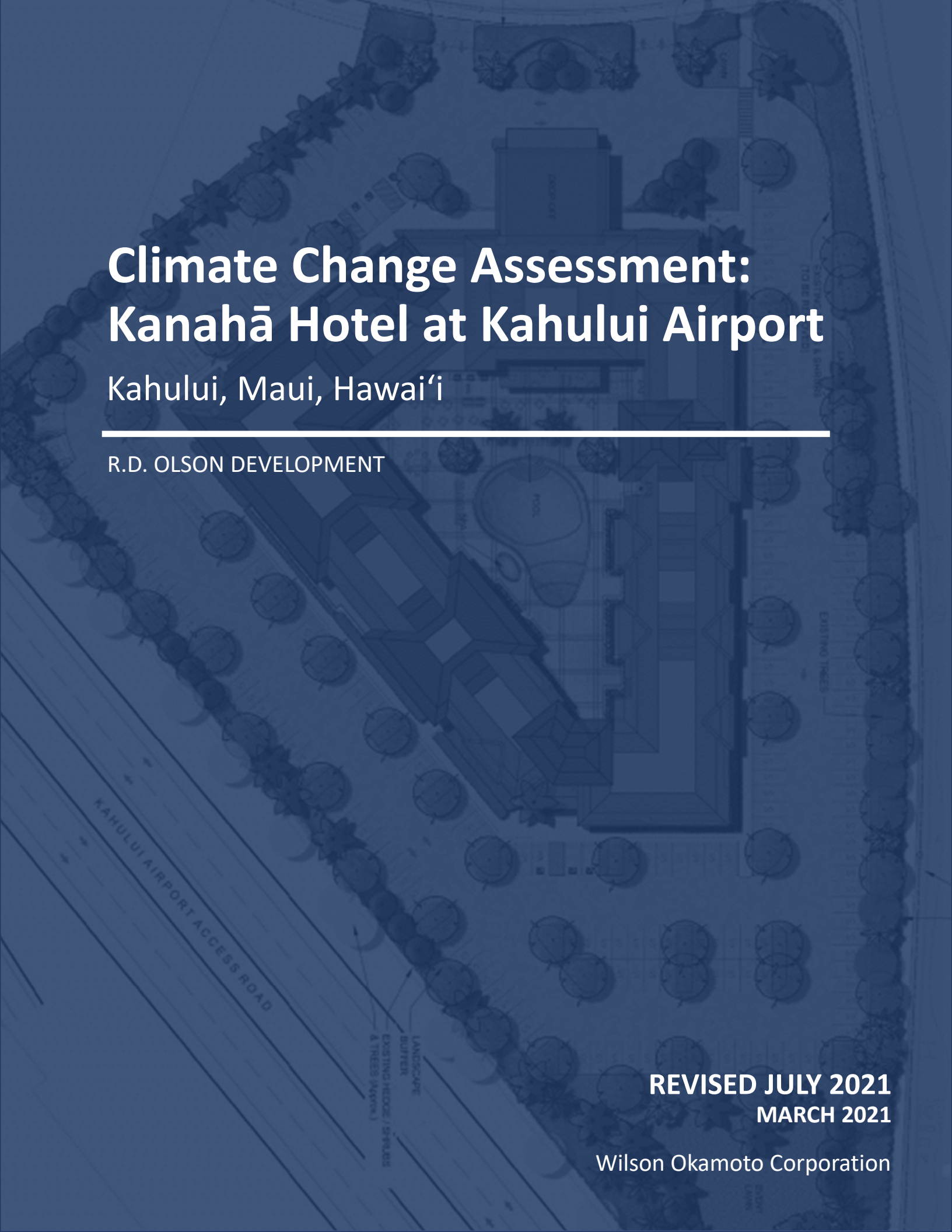
Appendix 26

Climate Change Assessment



Climate Change Assessment: Kanahā Hotel at Kahului Airport

Kahului, Maui, Hawai‘i

R.D. OLSON DEVELOPMENT

REVISED JULY 2021
MARCH 2021

Wilson Okamoto Corporation

CLIMATE CHANGE ASSESSMENT

KANAHĀ HOTEL AT KAHULUI AIRPORT

Kahului, Maui, Hawai‘i
Tax Map Keys: (2) 3-8-103:014 (portion),
015 (portion), 016, 017 & 018

Prepared For:

R.D. Olson Development
520 Newport Center Drive, Suite 600
Newport Beach, California 92660

Prepared By:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai‘i 96826
WOC Job No. 10587-01

REVISED JULY 2021
MARCH 2021

EXECUTIVE SUMMARY

This Climate Change Assessment document has been prepared by Wilson Okamoto Corporation at the request of R.D Olson Development. The purpose of this report is to summarize the findings of a climate change assessment for the proposed project and to identify the potential direct, indirect, and cumulative impacts that may be associated with the construction and development of the Kanahā Hotel as it relates to climate change. This assessment considers how climate change would impact the proposed project as well as how the proposed project would impact climate change.

Climate change impacts were based on region specific trends identified for the State of Hawai‘i from a qualitative frame view that is primarily centered on available data and metrics. Region specific climate change trends likely to affect the project or be affected by the project include a rise in air temperature and variations in rainfall patterns. Other region specific climate change trends such as flooding, sea level rise and shoreline erosion are not anticipated to affect or be affected by the project due to the location of the project site outside of areas of vulnerability. Cumulatively, the proposed project is anticipated to generate GHG emissions that will contribute to the overall concentration of GHG in the atmosphere. Various design strategies and mitigation measures have been incorporated into the proposed project that will minimize potential impacts. Additional mitigation measures and best management practices are recommended to further minimize these impacts.

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LIST OF FIGURES

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1. INTRODUCTION

1.1 Project Overview

R.D. Olson Development (R.D. Olson) is proposing to construct a new 200-unit hotel, including on and offsite infrastructure, near the Kahului Airport in Kahului, Maui, Hawai‘i (see Figure 1-1). The project site encompasses approximately 5.2 acres of undeveloped land situated on five parcels generally bound by Haleakalā Highway to the north, Kahului Airport Road to the south and east, and Lau‘o Loop to the west. These parcels are further identified as Tax Map Keys (TMK) (2) 3-8-103: 014 (Portion), 015 (Portion), 016, 017, and 018.

The proposed hotel building will vary from one- (1), two- (2), and four- (4) stories in height and will be massed towards the center of the project site with generous setbacks on all sides accommodating a surface parking lot of 227 spaces and landscaping. Amenities and uses include, a welcoming lobby, lounge, dining area, meeting rooms, business center, outdoor pool/spa, sport court, fitness center and other typical and similar incidental support services and accessory uses for hotel operation. A shuttle will provide free transportation within a 2-mile radius of the hotel, including pick up and drop off to and from the Kahului Airport. Construction will occur in a single phase anticipated to start in 2023 with completion two years later in 2025.

The proposed use of the project site will require an amendment to the Wailuku-Kahului Community Plan, which is a trigger for compliance with Hawai‘i Revised Statutes (HRS) Chapter 343, the Environmental Impact Statement (EIS) law. Any interaction with public lands or infrastructure which may be required for incidental infrastructure improvements are also a trigger for compliance with HRS Chapter 343. As such, R.D. Olson is preparing an EIS for the subject project that will include a climate change impact analysis.

1.2 Purpose and Objectives

At the request of R.D. Olson, Wilson Okamoto Corporation has prepared this Climate Change Assessment to support the EIS for the Kanahā Hotel at Kahului Airport project. The purpose of this report is to summarize the findings of a climate change assessment for the proposed project and to identify the potential direct, indirect, and cumulative impacts that may be associated with the construction and development of the Kanahā Hotel as it relates to climate change.

The objectives of this report will be to:

- Review and summarize existing climate research at a global and regional level.
- Establish an understanding of existing conditions at the project site, including observed current climate change trends and future projections.
- Assess current and future climate change trends that have the potential to impact the proposed project.

- Analyze the potential impact the proposed project may have on regional climate change based on anticipated greenhouse gas emissions.
- Provide recommendations for best management practices (BMPs) and mitigation strategies to avoid or minimize potential climate change impacts.

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FIGURE 1-1
LOCATION MAP

KANAHĀ HOTEL AT KAHULUI AIRPORT
MAUI, KAHULUI, HAWAI'I

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2. PROJECT DESCRIPTION

2.1 Proposed Project

The proposed project consists of constructing a new 200-unit hotel, including on and offsite infrastructure, near the Kahului Airport. The proposed hotel building will vary from one- (1), two- (2), and four- (4) stories in height and will be massed towards the center of the project site with generous setbacks on all sides to accommodate a surface parking lot of 227 spaces and landscaping. The landscaping will consist of an open lawn area, vegetative ground cover, approximately 55 shade trees distributed evenly throughout the parking lot, and approximately 19 palm trees situated along the perimeter of the property. Amenities and uses include, a welcoming lobby, lounge, dining area, meeting rooms, business center, outdoor pool/spa, sport court, fitness center and other typical and similar incidental support services and accessory uses for hotel operation. A shuttle service is also proposed that will provide free transportation within a 2-mile radius of the hotel, including pick up and drop off to and from the Kahului Airport. Construction will occur in a single phase anticipated to start in 2023 with completion two years later in 2025.

Design of the hotel will incorporate standard green building objectives that emphasize high performance and energy efficient design and construction methods. Specific green building objectives being utilized for this project include the following:

- Passive solar design.
- Photovoltaic solar panels.
- Thermoplastic polyolefin (TPO) single-ply roofing membrane in a light color that reflects solar energy and heat away from the roof.
- Efficient low emissivity glazing on glass to minimize ultraviolet and infrared light that passes through.
- Water conserving plumbing fixtures and fittings.
- Irrigation with automatic controllers, sensors, and metering of outdoor water use.
- Finish material pollutant controls meeting volatile organic compound (VOC) and formaldehyde limits (adhesives, sealants, caulks, paints and coatings, aerosol paints and coatings).
- Exterior material selection for sustainability and recycled content.
- Light pollution reduction.
- Low power consumption for lighting and design and dimming systems.
- Efficient variable refrigerant flow (VRF) heating and air-conditioning system design.

- Commissioning and testing of heating, ventilation, and air conditioning (HVAC) systems.
- Insulation and sealing of the exterior building envelope.
- Electric Vehicle (EV) charging stations.

Off-site improvements to be completed by R.D. Olson consist of improvements to the Alexander & Baldwin (A&B) Triangle Square Wastewater Pump Station located at 417 Kele Street in Kahului. Other roadway, waste and wastewater infrastructure improvements may also be required and would be determined in consultation with the appropriate agencies. Other off-site improvements proposed in the project area that would be completed by others consist of construction of a new on-ramp to the Airport Access Road located on the eastern corner of the project site. The future roadway parcel currently owned by A&B will be sold to the State of Hawai‘i Department of Transportation (DOT) upon completion of their agreement. The State's timing of the future on-ramp construction is unknown.

2.2 Existing Conditions

2.2.1 Existing and Surrounding Land Use

The subject property is located in the State Land Use Urban District and the County M-1 Light Industrial Conditional Zoning district (Ordinance 3559). It is also designated as Light Industrial (LI) in the Wailuku-Kahului Community Plan and located within the Urban Growth Boundary of the Maui Island Plan.

The project site is part of the development known as Maui Business Park (MBP) Phase II and is currently comprised of vacant land with utility and roadway services. Land within MBP Phase II is currently for sale with several subdivided parcels already sold or under construction. Prior to development of MBP Phase II, the subject property was used for sugar cultivation and contained sugar cane fields operated by Hawai‘i Commercial & Sugar Company (HC&S).

Other surrounding uses include Maui's primary airport and harbor facilities, business centers, the existing Maui Business Park Phase I, and the Kahului Industrial area.

2.2.2 General Climate

The Kahului area is generally warm and sunny throughout most of the year. The average annual rainfall amounts to approximately 20-40 inches, with most of the rainfall occurring in the winter months between October and April. The average temperature is about 70 degrees Fahrenheit.

2.2.3 Topography

The ground surface of the site is currently covered with overgrown brush and weeds, and generally slopes in a westerly direction with an average slope of approximately 1 percent. Onsite elevations range from 34 to 28.5 feet mean sea level (MSL).

2.2.4 Soils

The soil type present at the project site is classified as Molokaʻi Silty Clay Loam (MuB) (see Figure 2-1). For this series, runoff is slow to medium and the erosion hazard is slight to moderate. Soils classifications and descriptions are taken from the U.S. Department of Agriculture Soil Conservation Services publication entitled *Soil Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lanaʻi, State of Hawaiʻi* dated 1972.

2.2.5 Flood Hazards

The project site has a flood hazard zone classification of Zone X (see Figure 2-2). Zone X is characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2 percent annual chance floodplain. Flood zone classification is based on the Flood Insurance Rate Map (FIRM) number 150003 0411E, effective September 25, 2009, as prepared by the Federal Emergency Management Agency (FEMA).

2.2.6 Water System

The project site currently has existing water meters in place which connect to a private water system. This system was constructed in 2011 and is owned and maintained by A&B Properties. The subdivision itself contains an existing 12-inch water main which services the subdivision's fire hydrant systems and domestic water meters. A separate irrigation system, also privately owned and maintained by A&B Properties, exists within the subdivision as well. Each parcel within this subdivision is provided with an irrigation meter from this non-potable water source. An existing 12-inch Department of Water Supply (DWS) water main also exists near the project area which runs from the west within Haleakalā Highway and terminates at the intersection with Kuleana Street and Lauʻo Loop.

2.2.7 Wastewater System

A sewer system, currently owned and maintained by A&B Properties, is in place and ready to service each parcel within the MBP North Project subdivision. Existing sewer laterals are present for each lot and connect to the existing 8-inch sewer main within Lauʻo Loop. This 8-inch sewer main then connects to an existing sewer main within Haleakalā Highway where sewer flows ultimately end up at the Kahului Wastewater Reclamation Facility (KWWRF). Sewer flow generated from the MBP North Project subdivision first flows through three pump stations, namely the A&B Triangle Pump Station, the Alamaha Wastewater Pump Station, and then the Kahului Wastewater Pump Station before discharging to the KWWRF.

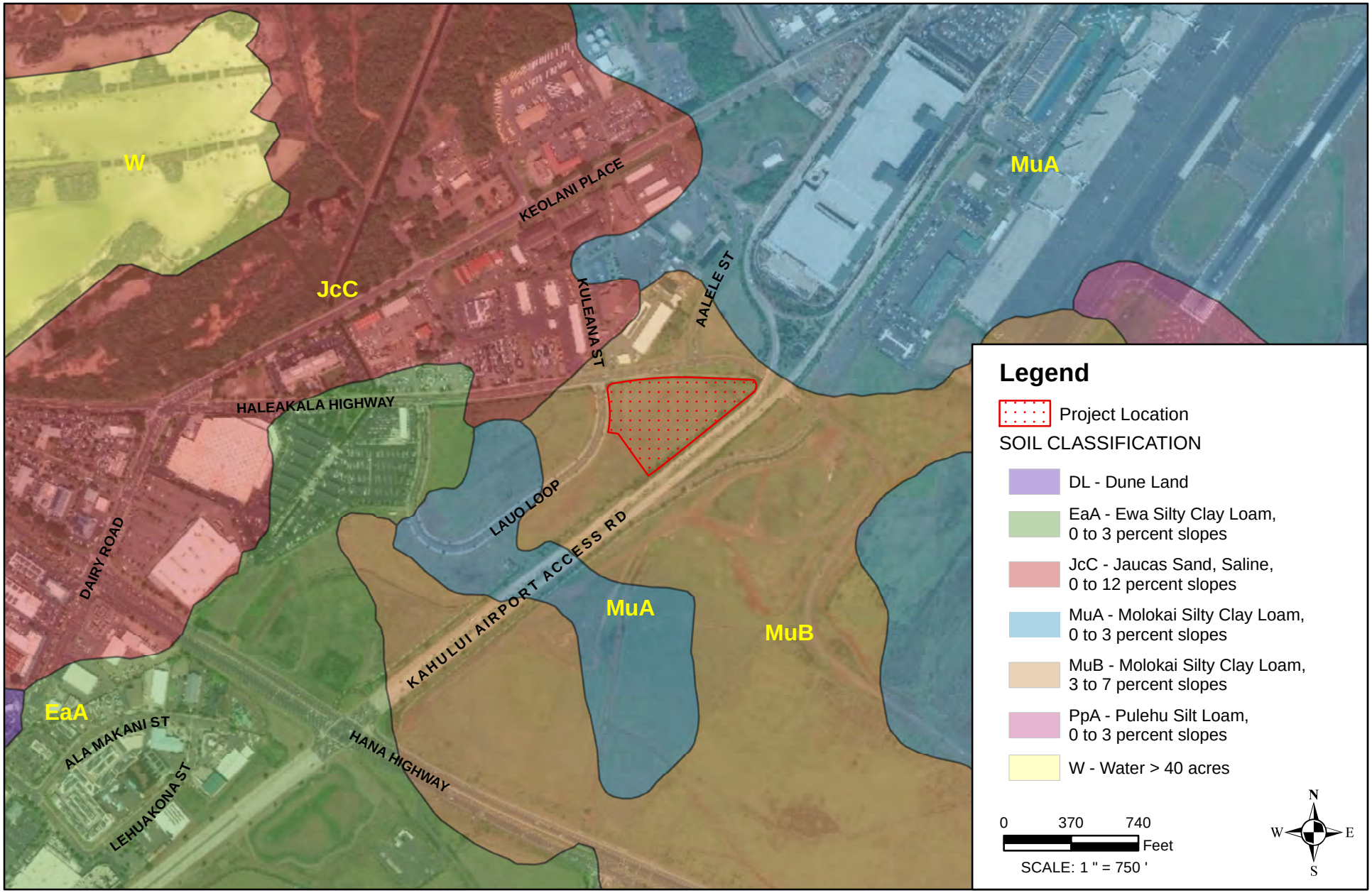

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FIGURE 2-1
SOILS MAP

KANAHĀ HOTEL AT KAHULUI AIRPORT
MAUI, KAHULUI, HAWAI'I

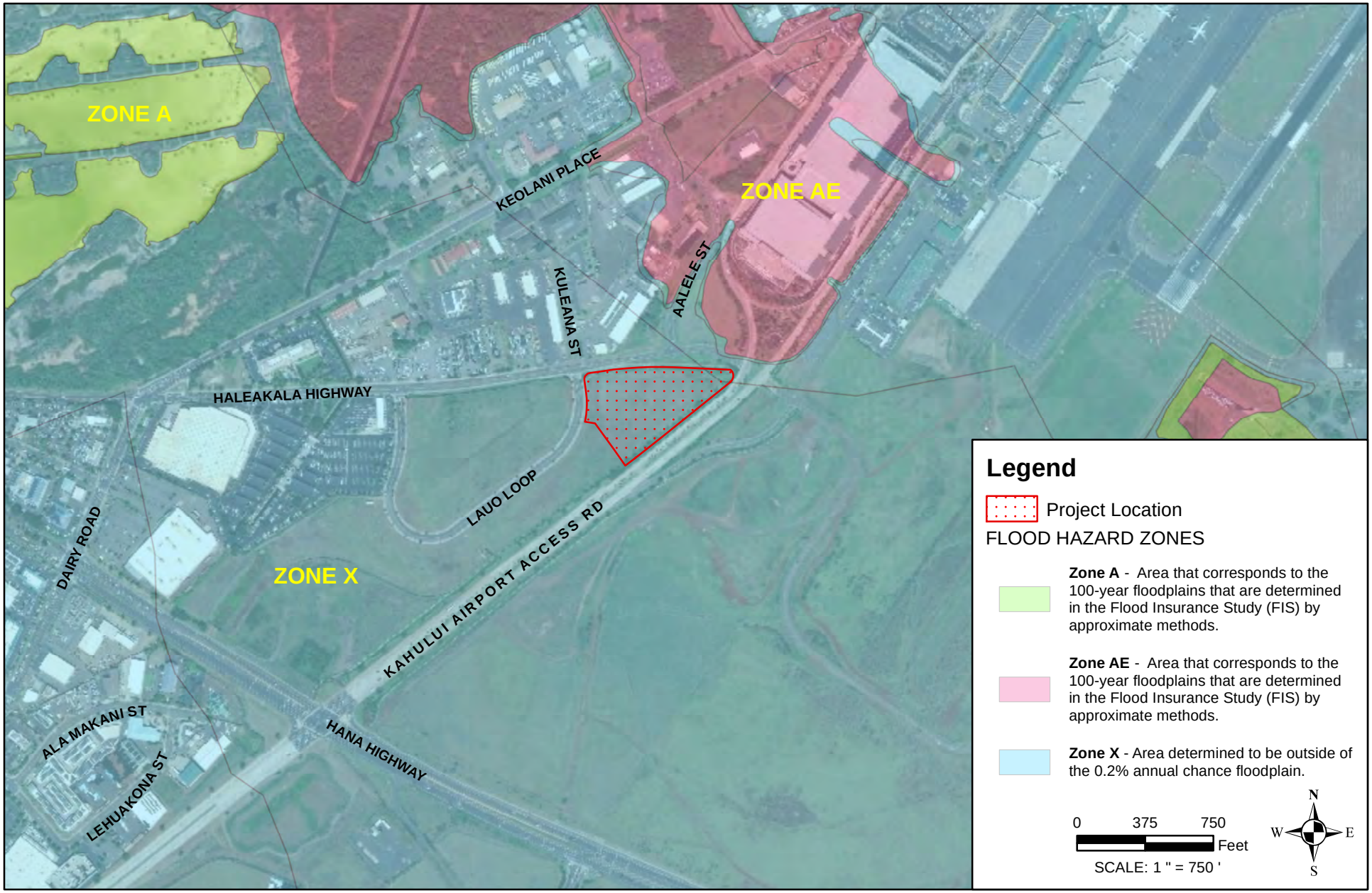

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FIGURE 2-2
FLOOD HAZARD ZONES

KANAHĀ HOTEL AT KAHULUI AIRPORT
MAUI, KAHULUI, HAWAI'I

2.2.8 Drainage System

Storm water runoff generated from the existing property generally flows in a westerly direction and is collected in a catch basin located within Lauʻo Loop. The existing runoff is ultimately discharged to an existing 30-foot wide concrete drainage channel located about 1,300 feet west of the project site near Costco. Flows from this drainage channel are eventually discharged into the Kalialinui Gulch downstream. Pre-development onsite runoff at the project site is estimated to be approximately 6.88 cubic feet per second (cfs), based on the 50-year recurrence interval storm.

2.2.9 Roadways

Lauʻo Loop fronting the site is a 40-foot wide asphalt concrete paved two-lane road with curbs, gutters and sidewalks on both sides of the street within a right-of-way width of 60 feet. The current posted speed limit for Lauʻo Loop is 25 miles per hour.

The portion of Haleakalā Highway at the Kuleana Street/Lauʻo Loop intersection is an asphalt concrete paved two-lane road and has a right-of-way width of 60 feet. It borders the project site to the north and the current speed limit for Haleakalā Highway is 25 miles per hour.

3. CLIMATE CHANGE FRAMEWORK

3.1 Current State of Climate Change

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body responsible for assessing the science related to climate. Through its comprehensive assessment reports, the IPCC determines the state of scientific, technical and socio-economic knowledge on climate change. It identifies where there is agreement in the scientific community on topics related to climate change, and where further research is needed. The IPCC most recently completed its Fifth Assessment Report in 2014 and is currently working towards completing its Sixth Assessment Report by 2022.

According to the IPCC's Fifth Assessment Report, observed changes in the climate system have been happening at unprecedented rates since the 1950's. These observed changes include global temperature rise, warming oceans, shrinking ice sheets, glacial retreat, decreased snow cover, declining arctic sea ice, sea level rise, extreme weather events, and ocean acidification. Research indicates that over two centuries of unabated greenhouse gas (GHG) emissions from anthropogenic (originating in human activity) sources is responsible for increases in global atmospheric temperatures and ocean warming.

GHGs help to regulate the temperature of our atmosphere by absorbing heat emitted from the Earth's surface. GHGs include water vapor (H_2O), carbon dioxide (CO_2), ozone (O_3), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons. Although these gases occur naturally in Earth's atmosphere, excess quantities can raise global average temperatures above the range of natural variability (UH Sea Grant, 2014). Anthropogenic GHG emissions, such as burning of fossil fuels and deforestation, have driven large increases in the atmospheric concentrations of carbon dioxide, methane, and nitrous oxide since the pre-industrial era. Emissions of carbon dioxide from fossil fuel combustion and industrial processes alone have contributed about 78 percent of the world's total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010 (IPCC, 2014).

In recent decades, observed changes in climate have caused impacts on natural and human systems throughout the world. For example, some regions have experienced an increase in extreme heavy rainfall events that have led to widespread flooding and caused billions of dollars in infrastructure and crop damage. At the other extreme, some regions have experienced significant decreases in rainfall leading to more persistent drought conditions which in turn have depleted fresh water sources, affected the ability to grow food, and resulted in greater wildfire risk. Impacts such as these and many others related to climate change are expected to continue into the future, especially if GHG emissions remain consistent with current rates. Therefore, substantial and sustained reductions in GHG emissions, together with implementation of adaptation strategies, are needed to limit climate change risks (UNFCCC, 2020).

3.2 Climate Change Impacts in Hawai‘i

Climate change is a global issue that affects regions differently. The Pacific Islands Regional Climate Assessment (PIRCA) developed a comprehensive report, *Climate Change and Pacific Islands: Indicators and Impacts* (Keener et al., 2012), to assess climate change and its impacts on Pacific Islands. Key findings of the assessment consisted of the following:

- *Low islands, coral reefs, nearshore and coastal areas on high islands, and high elevation ecosystems are most vulnerable to climatic changes.*
- *Freshwater supplies will be more limited on many Pacific Islands, especially low islands, as the quantity and quality of water in aquifers and surface catchments change in response to warmer, drier conditions coupled with increased occurrences of salt water intrusion.*
- *Rising sea levels will increase the likelihood of coastal flooding and erosion, damaging coastal infrastructure and agriculture, negatively impacting tourism, reducing habitat for endangered species, and threatening shallow reef systems.*
- *Extreme water levels will occur when sea-level rise related to longer-term climate change combines with seasonal high tides, interannual and interdecadal sea-level variations (e.g., ENSO, Pacific Decadal Oscillation, mesoscale eddy events), and surge and/or high runup associated with storms.*
- *Higher sea-surface temperatures will increase coral bleaching, leading to a change in coral species composition, coral disease, coral death, and habitat loss.*
- *Rising ocean acidification and changing carbonate chemistry will have negative consequences for the insular and pelagic marine ecosystems; although potentially dramatic, the exact nature of the consequences is not yet clear.*
- *Distribution patterns of coastal and ocean fisheries will be altered, with potential for increased catches in some areas and decreased catches in other areas, but open-ocean fisheries being affected negatively overall in the long-term.*
- *Increasing temperatures, and in some areas reduced rainfall, will stress native Pacific Island plant and animal populations and species, especially in high-elevation ecosystems, with increased exposure to non-native biological invasions and fire, and with extinctions a likely result.*
- *Threats to traditional lifestyles of indigenous communities in the region (including destruction of coastal artifacts and structures, reduced availability of traditional food sources and subsistence fisheries, and the*

loss of the land base that supports Pacific Island cultures) will make it increasingly difficult for Pacific Island cultures to sustain their connection with a defined place and their unique set of customs, beliefs, and languages.

- *Mounting threats to food and water security, infrastructure, and public health and safety will lead increasingly to human migration from low islands to high islands and continental sites.*

The State of Hawai‘i similarly experiences region-specific impacts attributed to climate change, including chronic flooding during king tides, severe shoreline erosion, changes in rainfall patterns, and more intense storms. While there is little consensus about the exact nature, magnitude, and timing of these impacts, evidence indicates that there has clearly been a rise in air and sea surface temperatures, a decrease in the prevailing northeasterly trade winds, a decline in average rainfall with widely varying precipitation patterns on each island, a decrease in stream base flow, an increase in ocean acidity, and sea level rise (UH Sea Grant, 2014).

3.3 Climate Change Regulations

Climate change impacts are being addressed to varying degrees at all government levels. The overarching policies and guidelines currently serving as a framework for climate change regulations applicable to the project are summarized in the following sections.

3.3.1 Federal Policies and Guidelines

There is currently no comprehensive federal approach to address climate change in the United States. However, there are a number of tools that policymakers could use to help institute change and facilitate progress, such as government research and development programs, voluntary programs, traditional regulations, and market-based programs. The following are some examples of how policies related to climate change have been incorporated into the existing policy framework:

- Regulatory controls under the Clean Air Act.
- Energy policy laws requiring the Department of Energy to partner with the private sector to research, develop, and deploy clean energy technologies, and to set energy efficiency standards for appliances and equipment.
- Standards set by the Department of Transportation that improve the fuel economy of motor vehicles.
- Planning undertaken by the Department of Defense to prepare for global security consequences of climate change.

In 2016, the United States entered into a landmark environmental accord known as the Paris Agreement to address climate change and its negative impacts. The agreement is aimed at

substantially reducing global greenhouse gas emissions in an effort to limit the global temperature increase in this century to 2 degrees Celsius above pre-industrial levels, while pursuing means to limit the increase to 1.5 degrees Celsius. All major emitting countries provided commitments to cut their emissions and to strengthen those commitments over time. The Paris Agreement also allows for developed nations to assist developing nations in their climate mitigation and adaptation efforts, and it creates a framework for the transparent monitoring, reporting, and refining of countries' individual and collective climate goals. At present, 190 of the 197 signatories of the agreement have formally ratified and adopted the Paris Agreement.

3.3.2 State Policies and Guidelines

Act 234, Session Laws of Hawai'i 2007, established the State's policy framework and requirements to address Hawai'i's GHG emissions. The law aims to achieve emission levels at or below Hawai'i's 1990 GHG emission levels by January 1, 2020 (excluding emissions from airplanes). In 2008, the Hawai'i Clean Energy Initiative (HCEI) was launched serving as a framework of statutes and regulations supported by a diverse group of stakeholders committed to Hawai'i's clean energy future. Several years later, Act 234 went on to serve as the foundation for Hawai'i's GHG program, and in 2014, Hawai'i Administrative Rules (HAR), Chapter 11-60.1 was amended to adopt the new Hawai'i GHG program. The main requirements of the program are set forth in Subchapter 11, Greenhouse Gas Emissions. In part, the rules established a facility-level 16 percent GHG emissions cap for large existing stationary sources with potential carbon dioxide equivalent (CO_2e) GHG emissions at or above 100,000 tons per year in an effort to reduce overall GHG emissions.

HAR Section 11-60.1-204(k) also requires the State Department of Health (DOH) to provide reports with updated GHG emissions inventories showing progress towards achieving the statewide GHG emission limit of equal to or below 1990 GHG levels by 2020. The most recently released report is the *Hawai'i Greenhouse Gas Emissions Report for 2016* dated December 2019 prepared for DOH by ICF and the University of Hawai'i Economic Research Organization (UHERO). As of 2016, the statewide GHG emission limit of 10.84 million metric tons of carbon dioxide equivalent (MMT CO_2e) has been reached, and statewide GHG projections of 8.37 MMT CO_2e and 6.43 MMT CO_2e for 2020 and 2025, respectively, indicate Hawai'i is on target to meet its statewide GHG emissions limit by 2020. These findings, however, will continue to be updated with future assessments.

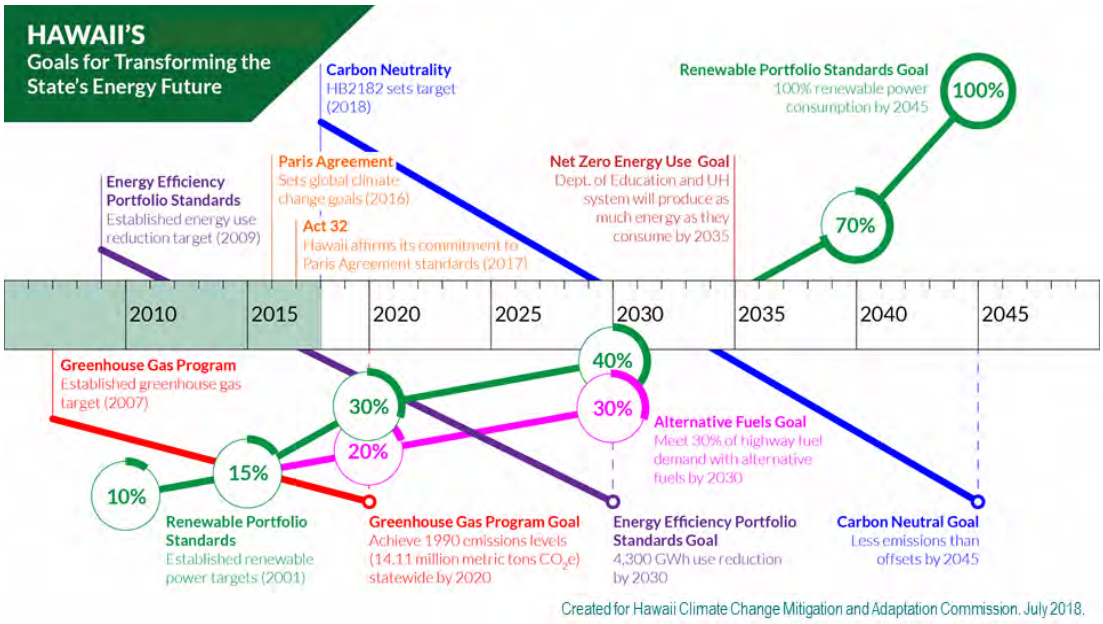
The State of Hawai'i further demonstrated its commitment to reducing greenhouse gas emissions by enacting legislation to implement a portion of the Paris Agreement. In 2017, the State of Hawai'i signed Senate Bill 559 (Act 032) into law expanding strategies and mechanisms to reduce greenhouse emissions statewide in alignment with the principles and goals adopted in the Paris Agreement. Act 032 established the Hawai'i Climate Change Mitigation and Adaptation Commission (also referred to as the "State Climate Commission") and directed the Commission to develop sea level rise vulnerability and adaptation reports. The 2017 *Sea Level Rise Vulnerability and Adaptation Report* approved by the commission identifies, with maps at tax map key detail, areas that are susceptible to sea level rise impacts

based on a 3.2-foot increase in sea level projected to occur by mid-century or earlier. These areas are designated as the sea level rise exposure area projection, which the Commission recommended be adopted as a sea level rise exposure area overlay to guide state and county adaptation strategies and standards for development. Furthermore, the Commission adopted other recommendations to help guide Hawai'i's response to the impacts of climate change including the recommendation to support legislation for disclosure for private properties and public offerings located in areas with potential exposure to sea level rise, which resulted in the passing of Senate Bill 474 in 2021, and a request that all new development, redevelopment and modifications be directed away from beach areas. In addition to adaptation to sea level rise, the Commission's priorities are also focused on ground transportation emissions reduction and disaster recovery and preparedness.

The State also passed House Bill 1578 (Act 033) that same year which established the Carbon Farming Task Force within the Office of Planning to identify practices in agriculture, aquaculture, and agroforestry that improve soil health, increase forest carbon, and promote carbon sequestration—the capture and long-term storage of atmospheric carbon dioxide to mitigate climate change.

In 2018, the State of Hawai'i took additional action by passing House Bill 2182 which established a statewide target aiming to make Hawai'i carbon neutral, sequestering more atmospheric carbon and greenhouse gases than emitted, by 2045. The bill also set forth a commitment to achieve 100 percent renewable energy by 2045 and renamed the 2017 Carbon Farming Task Force as the Greenhouse Gas Sequestration Task Force making it permanent along with the Hawai'i Climate Change Mitigation and Adaptation Initiative. Furthermore, the Office of Planning released a feasibility report with recommendations for establishing a framework for a carbon offset program in Hawai'i pursuant to House Bill 1986. Other established targets set for the State include reducing electricity consumption by 4,300 GWh by 2030, and the counties' shared goal of 100 percent clean transportation by 2045.

In 2021, Hawai'i Senate Concurrent Resolution 44 was passed declaring a climate emergency and requesting statewide collaboration for an immediate just transition and emergency mobilization effort to restore a safe climate. Climate mitigation and adaptation efforts to be mobilized at the necessary scale and speed by entities statewide include investment in clean energy, prohibition against any further investment that will make the climate emergency worse, facilitation of beneficial projects and infrastructure, and agency coordination.



Timeline illustrating the energy and climate change related goals established by the State of Hawai'i (Source: Hawai'i Climate Change Mitigation and Adaptation Commission, 2018).

3.3.3 County Policies and Guidelines

There is currently no firm legislation to directly address climate change at the county level, although the County of Maui has committed to continue supporting the Paris Agreement and other climate change initiatives of the State. The negative impacts of climate change are also considered at the project level during environmental review for necessary permits and approvals, and at the regional level in the long-range planning process for Maui. For instance, the County of Maui has begun working on a plan for managed retreat and new infrastructure to protect communities from the impacts of rising sea levels.

4. IMPACTS ANALYSIS

4.1 General Approach

This Climate Change Assessment document examines climate change impacts from a qualitative frame view that is primarily centered on available data and metrics published by the private sector and government agencies. Consideration of climate change impacts herein include both the impacts of climate change on the proposed project as well as the potential impact of the proposed project on climate change.

Impacts of climate change on the proposed project were based on region specific climate change trends identified for the State of Hawai‘i. These identified trends consist of the anticipated rise in air and sea surface temperatures, a decrease in the prevailing northeasterly trade winds, a decline in average rainfall with widely varying precipitation patterns on each island, a decrease in stream base flow, an increase in ocean acidity, and general sea level rise (UH Sea Grant, 2014). Climate change trends that were likely to affect the project were evaluated further to identify potential impacts and appropriate mitigation measures. As such, this section discusses climate change impacts related to temperature, rainfall, flooding, sea level rise, and coastal erosion. The potential impact of the proposed project on climate change was also evaluated and is discussed qualitatively in the context of GHG emissions as consistent with established statewide energy and climate change targets.

4.2 Temperature

4.2.1 Data

Temperature data was referenced from the *Climate Change Impacts in Hawai‘i - A summary of climate change and its impacts to Hawai‘i’s ecosystems and communities* report prepared in 2014 by the University of Hawai‘i Sea Grant College Program (UH Sea Grant).

4.2.2 Observation

Global mean temperature is projected to increase by at least 2.7°F (1.5°C) by the end of the century for intermediate to high future scenarios. Locally, the rate of warming air temperature in Hawai‘i has quadrupled in the last 40 years at a rate of over 0.3°F (0.17°C) per decade and is projected to continue warming with a range of +4-5°F (2.2-2.8°C) for high emissions scenarios targeted by the year 2085 (Keener et al., 2013).

Warming air temperatures in Hawai‘i could cause thermal stress for plants and animals and result in changes to terrestrial ecosystems and habitats. The difference between the nightly low and daytime high temperature, an important factor for many terrestrial species, is decreasing more rapidly in Hawai‘i than the global mean (Safeeq et al., 2012). Warming could cause a shift in the habitat ranges of native plants such as the Haleakalā silversword (*‘āhinahina*), which is only found at high elevations on Mount Haleakalā and has experienced a decline in population over the last 20 years in connection with temperature increase (Krushelnycky et al., 2011). Endemic bird species, such as the Hawaiian honeycreeper, could

also decline in population due to the warming of high-elevation forests where risk of avian disease transmission was previously low (Benning et al., 2002).

Aside from impacts on plants, animals, and ecosystems, warmer temperatures could in some cases result in lower agricultural yields, increased demand for energy required to operate cooling systems, decreased water supplies, more frequent or prolonged drought conditions that can increase risk for wildfires, and increased risk for heat-related illnesses in humans.

Much of the heat trapped in the Earth's atmosphere is absorbed by the ocean. The strongest ocean warming is projected to be felt in tropical and Northern Hemisphere subtropical regions, with increases up to 3.6°F (2.0°C) in the upper ocean above 650 ft (200 m) by the end of the century. Sea surface temperatures have warmed between 0.13°F and 0.41°F (0.07°C and 0.23°C) per decade in the Pacific for the last 40 years. This trend is projected to accelerate, warming by 2.3°F to 4.9°F (1.3°C to 2.7°C) before the end of the century. This warming can influence ocean circulation and nutrient distribution and lead to coral bleaching events. As an island, Maui has both a heavy economic and cultural dependency on the ocean. Consequently, warming ocean temperatures could also have potential impacts on the economy and cultural practices, in addition to ocean ecosystems and processes.

4.2.3 Impacts and Mitigation Measures

The proposed project is located in an urban area and, by contrast to existing conditions, will increase the amount of impervious surfaces at the site. Approximately 3.7 acres, or 71 percent, of the project area is anticipated to become impervious. These impervious surfaces are expected to reflect heat and may contribute to an urban heat island effect whereby temperatures in an urban area are significantly warmer than surrounding rural or natural areas. Any warming of ambient air temperatures that may be attributed to climate change would amplify this effect. Therefore, landscaping is being incorporated into the project that will mitigate urban heat island effects by providing trees and vegetative cover intended to absorb heat and provide shade to cool the surrounding landscape. Landscaping will consist of an open lawn area, vegetative ground cover, approximately 55 shade trees evenly distributed throughout the parking lot, and approximately 19 palm trees situated along the perimeter of the property.

The Maui County Code requires one medium-sized shade tree be installed for every five (5) parking spaces to provide maximum shade to the extent practicable. With a total of 227 parking spaces proposed, 46 trees are required for the proposed project pursuant to County requirements. The proposed number of shade trees exceeds the County requirements by about 20 percent and maximizes the amount of shaded area in the parking lot and near the hotel building. In addition, shade provided by several palm trees installed along the perimeter of the property would further help to cool impervious surfaces in the vicinity and minimize the heat island effect.

In the long-term, energy demand for the proposed project could potentially increase over time resulting in indirect impacts on climate change as cooling systems are required to be operated

more frequently or for longer durations due to rising air temperatures. Therefore, the proposed project will be designed to incorporate green building objectives that will help to passively cool the building as much as possible and minimize the need for supplemental cooling. These green building objectives include utilizing a passive solar design, applying a low emissivity glazing on glass, insulating and sealing the exterior building envelope, installing high-efficiency cooling systems, and commissioning and testing of HVAC systems. In addition, the proposed project will incorporate a "cool roof" that reflects heat and solar energy away from the building using a TPO single-ply roofing membrane in a light color. TPO is highly reflective and would decrease the energy use and cooling costs associated with building operations. It would also require limited maintenance as it is extremely durable and resistant to tears and punctures throughout its lifetime. TPO is also sustainable and can be recycled. Photovoltaic solar panels are also proposed to be installed with the project to minimize and offset long-term demand on electrical utilities.

With the foregoing mitigation measures in place, the proposed project will not result in significant impacts to air temperatures in the vicinity of the project. Increases in regional air temperatures attributed to climate change are likely to have some effect on the project and may indirectly increase GHG emissions through a corresponding increase in energy demand in the long-term. However, with implementation of green building objectives and installation of photovoltaic solar panels, the additional GHG emissions are anticipated to be negligible. It is acknowledged that GHG emissions are the main driver to observed increases in global air temperature. Cumulatively, any additional GHG emissions will contribute to the overall concentration of GHGs in the atmosphere. However, as discussed in more detail in Section 4.7, increases in GHG emissions produced by the commercial sector have been accounted for in the emissions inventories for the State and are expected to be offset by even greater reductions in emissions from the energy industries. Moreover, the State has mandated several policies and initiatives in an effort to reduce its contribution to global GHG emissions and limit global temperature increases as discussed in Section 3.3.2. Therefore, the proposed project will not result in significant impacts to global air temperatures.

4.3 Rainfall

4.3.1 Data

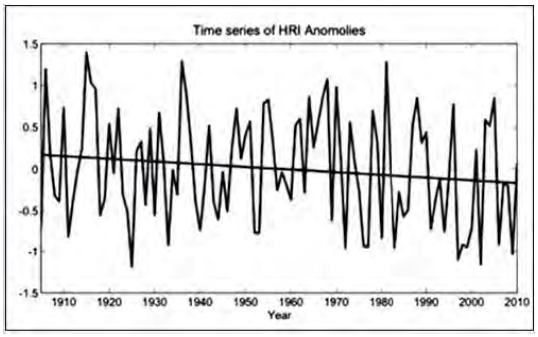
Rainfall data was obtained from *Interannual and Interdecadal Rainfall Variations in the Hawaiian Islands* by Pao-shin Chu and Huaiqun Chen. The study applied the following methods to determine rainfall within the Hawaiian Islands:

- Eleven-year or five-month running mean applied to the annual Hawaiian Rain Index (HRI) time series.
- Morlet Wavelet analysis.
- Nonparametric Mann-Whitney test.
- Measurement/ calculation of moisture divergence patterns.

4.3.2 Observation

Rainfall in Hawai‘i varies dramatically both temporally and spatially based on trade winds, topography, mid-latitude weather systems, storms and cyclones, and other climate patterns (Schroeder, 1993). Climate change, natural variability, land use, complex topography, and other factors combined present challenges to the accurate projection of future rainfall and runoff patterns. As a result, rainfall trends and projections vary from island to island, and even from valley to valley. Hence, there are varying precipitation patterns anticipated with climate change.

The overarching historical trend across the islands has been a decrease in total rainfall. Hawai‘i’s total annual average rainfall represented by the Hawai‘i Rainfall Index, has decreased over the last century (Chu, 1995; Chen and Chu, 2005). Similarly, streamflow records show a decline in base flow over the last century by 20 to 70 percent, depending on the watershed, suggesting there could also be a declining trend in groundwater levels (Oki, 2004; Bassiouni and Oki, 2012; Giambelluca et al., 1991). Consistent with these trends, Hawai‘i has experienced longer periods of drought in recent years (Chu et al., 2010). Part of the reason for these rainfall trends may be because prevailing northeasterly trade winds, which drive orographic precipitation on windward coasts, have decreased in frequency since 1973 in Hawai‘i (Collins et al., 2010; Tokinaga et al., 2012; Garza et al., 2012). Data on individual rainfall events show that the number of high intensity rain events has decreased by 27 percent while the frequency of low intensity rain events has increased (Elison Timm et al., 2011; Chu et al., 2010). This trend varies by island though as rainfall has become less intense for the western islands (O‘ahu and Kaua‘i) over the last 60 years but more intense for the island of Hawai‘i (east). For Maui, trends in rainfall intensity are mixed (Chu et al., 2010).



Time-series of the Hawai‘i Rainfall Index (HRI) showing a long-term decreasing trend over the last century (Source: Chen and Chu, 2005)

Projections show a potential increase in the frequency of extreme rain events, which can have implications for stormwater infrastructure, sustainable yield from aquifers, and water quality due to runoff into coastal waters. High intensity rainfall can also cause flash flooding, which is common in Hawai‘i due to steep terrain and concrete stream channels, resulting in millions of dollars of flooding and infrastructure damage. It is projected that the southerly main Hawaiian islands (Hawai‘i and Maui) may become wetter towards the end of the 21st century while those in the north (Kaua‘i and O‘ahu) become slightly drier, although rainfall projections for Hawai‘i are still quite uncertain (Keener et al., 2013). Statistical models also suggest that the summer dry months will become relatively wetter while winter wet months will become relatively drier in Hawai‘i over open ocean environments (Lauer et al., 2013; Takahashi et al., 2011). It is still uncertain how this will translate over highly variable terrain

in Hawai‘i. It is anticipated that drier areas, especially those experiencing prolonged periods of drought, would be at greater risk for wildfires and stressed water supplies.

4.3.3 Impacts and Mitigation Measures

The proposed project will decrease the amount of permeable area at the project site, which is anticipated to result in an increase in runoff during rainfall events. Runoff volumes would be further affected by high intensity rainfall events that are projected to increase in frequency as a result of climate change. The increase in runoff may result in indirect impacts on stormwater infrastructure and coastal water quality. Since the project area is located below the Underground Injection Control (UIC) line, meaning the underlying aquifer is not considered a drinking water source, no impacts on the sustainable yield from aquifers are anticipated due to a reduction in the amount of permeable surfaces.

In a Preliminary Engineering Report prepared by Austin, Tsutsumi & Associates, Inc. (2020) it was confirmed that development of the site will lead to an increase of on-site stormwater runoff. Post-development runoff would be approximately 17.8 cubic feet per second (cfs), which is an increase of 10.92 cfs over existing conditions. County standards require that the increase in runoff be retained; however, since this project resides within the MBP development, retention for the increases in runoff throughout the entire MBP development have already been accounted for. Runoff is retained in the other areas of the MBP project that also collect and retain runoff from the project site. These areas more than offset the increase in runoff produced by the subject project area. Therefore, runoff generated by the project site will be discharged to the A&B drainage ditch as it did in existing conditions. It is noted that stormwater produced by the project will be treated for storm water quality based on Maui County requirements before it is discharged to the Lau‘o Loop drainage system.

The proposed onsite drainage system improvements will include concrete curbs and gutters, catch basins, manholes, underground drain lines, and storm water quality treatment systems. With these improvements in place, spatial or temporal changes in rainfall patterns in connection with climate change are not anticipated to impact the proposed project. Furthermore, it is anticipated that the proposed project will not directly or indirectly result in significant impacts on rainfall patterns for the region, as GHG emissions generated by the proposed project are anticipated to be negligible.

4.4 Flooding

4.4.1 Data

The threat of flooding to the proposed project was determined using the community FIRM number 150003 0411E, effective September 25, 2009, as prepared by FEMA, as the basis for assessment. The September 2012 *Flood Insurance Study* prepared by FEMA for Maui County was also referenced. In the study, the following methods were implemented to determine flood hazard risk:

- Standard hydrologic and hydraulic study methods to determine the flood hazard data.

- Assessment of flood risk potential based on existing conditions of county at the time the study was conducted.

4.4.2 Observation

The project site is located approximately 0.66 miles from the coastline and approximately 0.38 miles from the Kahanā Pond and the Kalialinui Gulch.

The Kahului area is subject to inundation from both tsunamis and sheet flow from runoff. The overflow of Kalialinui Gulch contributes to flooding in the industrial area north of the project site near Kahului Airport. Low-lying areas are at greatest risk to flooding that could worsen or occur more frequently as a result of variations in seasonal rainfall patterns associated with climate change.

The coastline area fronting Kahului town is subject to tsunami inundation. The tsunamis of April 1946 and May 1960 caused extensive damage to the communities of Kahului, Spreckelsville, and Pā‘ia, along the north shore of the island, destroying several homes. The most devastating tsunami to hit the Kahului area occurred in May 1960, causing an estimated $763,000 worth of damage (University of Hawai‘i, 1973).

4.4.3 Impacts and Mitigation Measures

The project site has a flood zone classification of Zone X. Zone X is characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2 percent annual chance flood plain. As discussed previously, increases in runoff throughout the entire MBP development have already been accounted for in the master plan for MBP. Runoff retained in other areas of the MBP project that also collect and retain runoff from the project site. These areas more than offset the increase in runoff produced by the subject project area. Therefore, runoff generated by the project site will discharge to the nearby A&B drainage ditch as it did in existing conditions and will be treated pursuant to County and State storm water quality standards prior to discharge. Therefore, the proposed project will not result in direct, indirect, or cumulative impacts related to flooding.

4.5 Sea Level Rise

4.5.1 Data

Data for sea level rise (SLR) was referenced from the *Hawai‘i Sea Level Rise Vulnerability and Adaptation Report* (2018) that was based on data from the Intergovernmental Panel on Climate Change’s (IPCC) *Climate Change Synthesis Report Summary for Policymakers, Fifth Assessment Report* published in 2014. The following methods were used in the State report to determine the potential future exposure of each island to multiple coastal hazards as a result of sea level rise:

- Modeling for four future sea level rise scenarios: 0.5 feet, 1.1 feet, 2.0 feet and 3.2 feet based on the upper end of the IPCC Fifth Assessment Report representative concentration pathway 8.5, or “business as usual” sea level rise scenario.

- Projection of the SLR exposure area (SLR-XA) to determine the vulnerability of Hawaiian Islands to sea level rise.

4.5.2 Observation

Sea level rise increasingly threatens the future of shorelines and infrastructure located along the shoreline due to heightened impacts from coastal flooding, king tides, and storm surge. Sea level rise also brings the water table closer to the surface, which can impact drainage during high tides and periods of heavy rainfall. If GHG emissions are maintained at its current rate of increase, the IPCC predicts up to 3.2 feet of global sea level rise by the year 2100 (IPCC, 2014). However, recent observations and projections show that this magnitude of sea level rise could occur even sooner than that.

Over the next 30 to 70 years, homes and businesses in coastal areas will be severely impacted by sea level rise. Of the 3,130 acres of land located within the SLR-XA, approximately a third of those lands are designated for urban land uses. With 3.2 feet of sea level rise, nearly 300 structures would be chronically flooded and more than 11 miles of major coastal roads would become impassible jeopardizing critical access to and from many communities. Maui has lost more than 4 miles of beaches to coastal erosion fronting seawalls and other shoreline armoring. Many more miles of beach could be lost with sea level rise, if widespread armoring is allowed.

4.5.3 Impacts and Mitigation Measures

The project site will not be subject to inundation pursuant to a 3.2-foot rise in sea level, as the site is not located near or within the SLR-XA (see Figure 4-1). It is noted, however, that there is a possibility that sea level rise could inundate major highways located near the shoreline or Kanahā Pond thereby limiting access to the area. However, these impacts, if any, are not anticipated to be significant as there are alternative routes to the project area available. Furthermore, it is anticipated that the proposed project will not directly or indirectly result in significant impacts on sea level rise, as GHG emissions generated by the proposed project are anticipated to be negligible.

4.6 Coastal Erosion

4.6.1 Data

Data for coastal erosion was referenced from U.S. Geological Survey's (USGS) 2011 assessment, *National Assessment of Shoreline Change: Historical Shoreline Change within the Hawaiian Island.* In the USGS assessment the following methods were implemented to evaluate shoreline erosion:

- Comparison and mapping of historical shorelines.
- Historical comparison of aerial photographs of the low water mark.
- Use of ArcGIS with DSAS version 4, to calculate change rates and rate uncertainties at regularly spaced transects (measurement locations) along the shore using the single

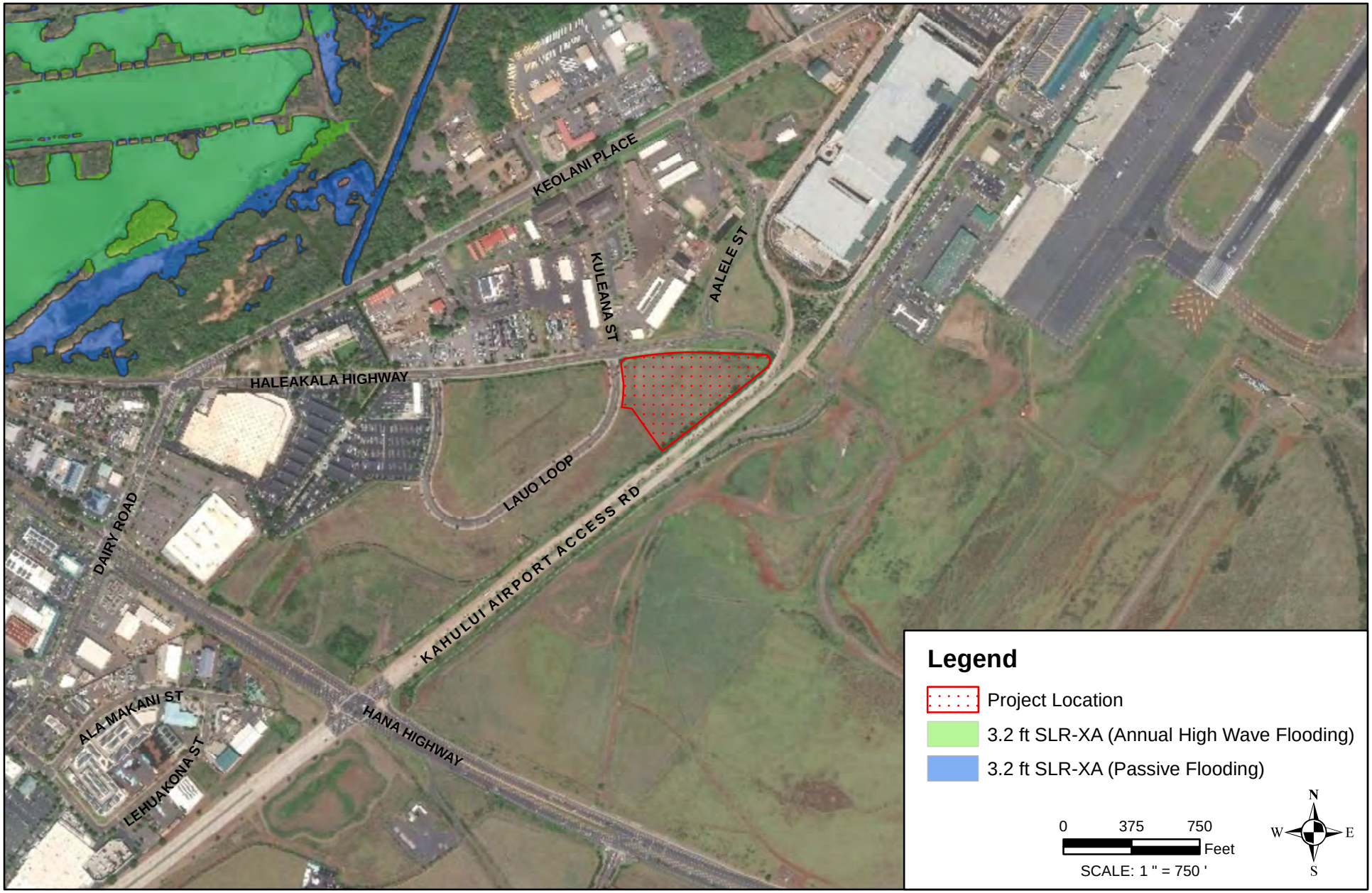


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FIGURE 4-1

SEA LEVEL RISE EXPOSURE MAP

KANAHĀ HOTEL AT KAHULUI AIRPORT
MAUI, KAHULUI, HAWAI'I

transect method (ST). ST relies on various methods (for example, end point rate, least squares, weighted least squares) to fit a trend line to the time series of historical shoreline positions at a given transect.

4.6.2 Observation

Maui's beaches have experienced the greatest amount of erosion compared to the other Hawaiian Islands. The average long-term erosion rate for all transects is -0.17 ± 0.01 m/yr and the average short-term rate is -0.15 ± 0.01 m/yr. A majority of the Maui transects indicate an overall trend of erosion with 85 percent of the long-term rates erosional and 76 percent of the short-term rates erosional. Eleven percent (6.8 km) of the total extent of Maui beaches studied was lost to erosion during the analysis period—the highest percentage of the islands in Hawai'i.

4.6.3 Impacts and Mitigation Measures

Coastal erosion is a naturally occurring ocean process. Due to climate change, the effects of major storms, drought, destabilization of soil, and SLR have led to an accelerated rate of coastal erosion. The proposed project will not result in direct, indirect, or cumulative impacts related to coastal erosion due to its location away from the shoreline.

4.7 Greenhouse Gas Emissions

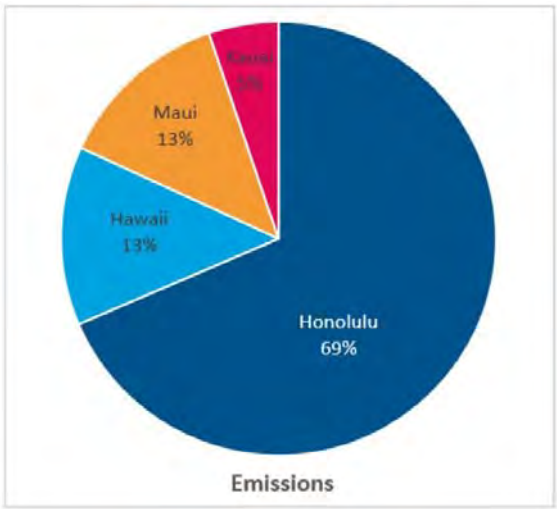
4.7.1 Data

The *Hawai'i Greenhouse Gas Emissions Report for 2016* was used to determine emission trends for the County of Maui and as a basis to determine the potential impacts of the project on climate change. This emissions report presents the emission estimates for the State of Hawai'i for 1990, 2007, and 2015; inventories estimates for 2016; and outlines emission projections for 2020 and 2025. Emission estimates presented in the report include anthropogenic GHG emissions and sinks – natural systems that absorb and store carbon dioxide from the atmosphere – from the following four sectors: Energy, Industrial Processes and Product Use (IPPU), Agriculture, Forestry, and Other Land Use (AFOLU), and Waste. Estimates and projections from the Energy sector includes emissions resulting from stationary combustion (generated by the burning of fossil fuels to generate energy), transportation, incineration of waste, and oil and natural gas systems.

Data needed to quantitatively evaluate GHG emissions at the project-level is not currently available. Therefore, a qualitative analysis was performed to determine the potential impact of the project on GHG concentrations in the atmosphere.

4.7.2 Observation

The *Hawai'i Greenhouse Gas Emissions Report for 2016* estimates that emissions for Maui County in 2016 accounted for 2.55 MMT CO_2e, or 13 percent, of the total GHG emissions for the State, which was estimated at 19.59 MMT CO_2e (ICF and UHERO, 2019). In 2016, emissions from the "Energy" sector accounted for the greatest share of the emissions in Maui County at 2.11 MMT CO_2e, or 83 percent.



2016 GHG Emissions by County in the State of Hawai'i (ICF and UHERO, 2019)

As a whole, total emissions for the State are projected to decrease by the years 2020 and 2025. Stationary combustion emissions from the commercial sector are projected to slightly increase in 2020 and 2025. However, it is expected these increases would be offset by even greater reductions in emissions projected from the energy industries due to gained efficiencies in energy production (ICF and UHERO, 2019). Emissions from the transportation sector are also projected to increase.

Emission levels are impacted by several factors, such as the overall level of economic activity, the type of energy and technology used, and land use decisions. The *Hawai'i Greenhouse Gas Emissions Report for 2016* determined a baseline projection for future emissions to the years 2020 and 2025 by relying heavily on projections of economic activities as well as an understanding of policies and programs that impact the intensity of GHG emissions. Due to the level uncertainty associated with these estimates, several alternative emissions scenarios were also developed in addition to a baseline projection. These alternatives considered changes related to world oil prices, development of renewable energy infrastructure, and adoption of ground transportation technology. Under most scenarios, the total emissions for the State were projected to be below 1990 emission levels. However, future scenarios where low oil prices, delays in the development of renewable energy infrastructure, and low adoption rate of ground transportation technology are considered, total emissions for the State were projected to be above 1990 emission levels.

Construction of the proposed project would result in the addition of 200 new hotel units to the island's current hotel inventory. The Hawaii Tourism Authority in its monthly Hawai'i Vacation Rental Performance Report indicates that there was an average of 8,901 daily units available on Maui during 2019. As of year-to-date August 2020, the average daily units available on Maui has declined by 26 percent, to less than 6,000 units compared to the same period in 2019. Additionally, occupancy levels for the vacation rental units have declined by 30 percent, to 50 percent for the year-to-date August 2020 compared to one year ago. This

declining trend may be due in part to two hotels that have been temporarily closed and are transitioning to timeshares, and two additional hotels that have closed permanently.

4.7.3 Impacts and Mitigation Measures

Greenhouse gases of primary concern in land use development projects are carbon dioxide, methane, and nitrous oxide associated with the burning of fossil fuels for energy, transportation, or to operate heavy machinery. Other GHG are less of a concern because construction and operational activities associated with land use development projects are not likely to generate substantial quantities of these GHG. The proposed project is anticipated to generate GHG emissions during both construction and operation resulting in direct, indirect, and cumulative impacts to concentrations of GHG in the atmosphere.

Direct impacts during construction are anticipated to result primarily from exhaust emissions from the operation of construction equipment on-site. Indirect impacts during construction are expected to result from temporary increases in traffic from construction workers commuting to and from the site, temporary increases in traffic from roadway lane closures, and any "upstream" emissions that may be released through extraction or production of materials to build the project. Indirect impacts during operations are anticipated to result primarily from the burning of fossil fuels to generate energy for the hotel and for vehicles transporting to and from the hotel, including vehicles servicing the hotel. Long-term operational emissions also inlcude those related to maintenance activities.

It is anticipated that the proposed project individually will not result in a significant impact on GHG concentrations in the atmosphere. In the short-term, increases in GHG emissions are anticipated to be negligible due to the scale and scope of the project and the temporary nature of construction activities. In the long-term, the proposed project will incorporate green building objectives and implement best management practices to ensure emissions are minimized. Traffic increases are not anticipated to significantly affect the level of service of surrounding roadways. Cumulatively, the project will contribute to the total GHG emissions for the State. However, these increases are anticipated to be negligible relative to overall emissions. Moreover, increases in the commercial sector have already been anticipated in emission inventories for the State and are expected to be offset by even greater reductions in emissions produced by the energy industries. Other recommended mitigation measures that could be implemented to ensure emissions are minimized to the maximum extent practicable include the following:

<u>During Construction</u>

- Improve fuel efficiency from construction equipment by minimizing idle time either by shutting equipment off when not in use or reducing the time of idling
- Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Train equipment operators in proper use of equipment.
- Use appropriately sized equipment for the job.
- Use equipment with high-efficiency technologies (e.g. repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Reduce electricity use in the construction office or trailer by using compact fluorescent or LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris.
- Use locally sourced or recycled materials for construction materials.
- Avoid road closures during peak traffic hours.
- Move heavy construction equipment and workers to and from construction areas during periods of low traffic volume.

During Operations

- Install high-efficiency equipment and energy-saving technologies throughout the facility.
- Implement waste reduction strategies such as reduce, reuse, recycle, and composting.
- Ensure structures and facilities are properly maintained.
- Develop programs that encourage guests to be green and promote alternative transportation options.

5. CONCLUSION

Observed changes in the climate system have progressed at unprecedented rates on a global level since the pre-industrial era. Research indicates that over two centuries of unabated GHG emissions from anthropogenic sources is largely responsible for increases in global atmospheric temperatures and ocean warming. The dire consequences of climate change impacts on natural and human systems around the world has made the need to address climate change a key priority. The State of Hawai‘i has adopted several policies and established clear energy goals as part of its commitment to reducing GHG emissions. These goals include achieving emissions levels at or below 1990 GHG emissions levels by 2020, carbon neutrality by 2045, 100 percent renewable energy by 2045, and 100 percent clean transportation by 2045.

A climate change assessment for the proposed project was conducted to identify the potential direct, indirect, and cumulative impacts that may be associated with the construction and development of the Kanahā Hotel. This assessment considers how climate change would impact the proposed project as well as how the proposed project would impact climate change. Climate change impacts were based on region specific trends identified for the State of Hawai‘i from a qualitative frame view that is primarily centered on available data and metrics. Region specific climate change trends likely to affect the project or be affected by the project include a rise in air temperature and variations in rainfall patterns. Other region specific climate change trends such as flooding, sea level rise and shoreline erosion are not anticipated to affect or be affected by the project due to the location of the project site outside of areas of vulnerability. Cumulatively, the proposed project is anticipated to generate GHG emissions that will contribute to the overall concentration of GHG in the atmosphere. Various design strategies and mitigation measures have been incorporated into the proposed project that will minimize potential impacts. Additional mitigation measures and best management practices are recommended to further minimize these impacts.

Temperature

The proposed project is located in an urban area and, by contrast to existing conditions, will increase the amount of impervious surfaces at the site. Landscaping is being incorporated into the project that will mitigate urban heat island effects by providing trees and vegetative cover intended to absorb heat and provide shade to cool the surrounding landscape. As such, the proposed project will not result in significant impacts to air temperatures in the vicinity of the project.

In the long-term, increases in regional air temperatures attributed to climate change are likely to have some effect on the project and may indirectly increase GHG emissions from consequential increase in energy demands as cooling systems are required to be operated more frequently or for longer durations due to rising air temperatures. Potential impacts would be mitigated by installing photovoltaic solar panels that would minimize and offset the long-term demand on electrical utilities, incorporating green building objectives that will help to passively cool the building as much as possible thereby minimizing the need for

supplemental cooling, and using high-efficiency cooling systems and the commissioning and testing of HVAC.

Rainfall

Variations in rainfall patterns is another impact of climate change that will likely affect the project. Although total average rainfall is projected to decrease overall for Hawai‘i, rainfall trends and projections vary from island to island. In general, projections show a potential increase in the frequency of high intensity rainfall events with rainfall intensity trends being mixed for Maui. The proposed project will decrease the amount of permeable area thereby increasing the amount of runoff at the project site. Onsite drainage system improvements are proposed to manage and treat the anticipated runoff which has already been accounted for and offset as part of the MBP master plan development. Therefore, spatial or temporal changes in rainfall patterns in connection with climate change are not anticipated to impact the proposed project. Furthermore, it is anticipated that the proposed project will not directly or indirectly result in significant impacts on rainfall patterns for the region, as GHG emissions generated by the proposed project are anticipated to be negligible.

Geenhouse Gases

Greenhouse gases of primary concern in the consideration of land use development projects are carbon dioxide, methane, and nitrous oxide. GHG emission estimates for Maui County in 2016 accounted for 2.55 MMT CO_2e, or 13 percent, of the total GHG emissions for the State. Stationary combustion emissions from the commercial sector are projected to slightly increase in 2020 and 2025. However, it is expected these increases would be offset by even greater reductions in emissions projected from the energy industries due to gained efficiencies in energy production. Overall, total emissions for the State are projected to decrease by the years 2020 and 2025.

It is anticipated that the proposed project individually will not result in a significant impact on GHG concentrations in the atmosphere. In the short-term, increases in GHG emissions are anticipated to be negligible due to the scale and scope of the project and the temporary nature of construction activities. In the long-term, the proposed project will incorporate green building objectives and implement best management practices to ensure emissions are minimized. Traffic increases are not anticipated to significantly affect the level of service of surrounding roadways. Cumulatively, the project will contribute to the total GHG emissions for the State. However, these increases are anticipated to be negligible relative to overall emissions. Moreover, increases in the commercial sector have already been anticipated in emission inventories for the State and are expected to be offset by even greater reductions in emissions produced by the energy industries. Other recommended mitigation measures that could be implemented to ensure emissions are minimized to the maximum extent practicable include the following:

During Construction

- Improve fuel efficiency from construction equipment by minimizing idle time either by shutting equipment off when not in use or reducing the time of idling
- Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Train equipment operators in proper use of equipment.
- Use appropriately sized equipment for the job.
- Use equipment with high-efficiency technologies (e.g. repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Reduce electricity use in the construction office or trailer by using compact fluorescent or LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris.
- Use locally sourced or recycled materials for construction materials.
- Avoid road closures during peak traffic hours.
- Move heavy construction equipment and workers to and from construction areas during periods of low traffic volume.

During Operations

- Install high-efficiency equipment and energy-saving technologies throughout the facility.
- Implement waste reduction strategies such as reduce, reuse, recycle, and composting.
- Ensure structures and facilities are properly maintained.
- Develop programs that encourage guests to be green and promote alternative transportation options.

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