JOSH GREEN, M.D.
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SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 29, 2025

TO: Mary Alice Evans
Director, Office of Planning and Sustainable Development

FROM: Jadine Urasaki Jadine Urasaki (Jan 29, 2025 10:06 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Final Environmental Assessment and Finding of No Significant Impact
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

The Hawaii State Department of Education (Department) hereby submits this Final Environmental Assessment and Finding of No Significant Impact (FEA-FONSI) determination for the proposed relocation of the Department's Maui District Mowers (MDM) facility and McKinley Community School for Adults (MCSA) located in Kahului on the island of Maui. As the proposing agency, the Department has determined that the proposed action would not have a significant impact on the environment under Hawaii Revised Statutes, Chapter 343 and Hawaii Administrative Rules (HAR), Title 11-200.1. This determination is based on the information contained in this FEA-FONSI, review of public and agency comments received, and review of the project's effects in relation to the significance criteria prescribed under HAR §11-200.1-13.

The Department is proposing to construct two new buildings on 2.2 acres of undeveloped land on the Maui High School campus. The two proposed one-story buildings, one for the MDM facility and the other for the MCSA, Maui Campus. Each building will have its own separate parking lot. The proposed construction will also include a new driveway to connect the new facilities to West Papa Avenue, landscaping, perimeter fencing around the site, and ancillary utilities and infrastructure to service the facilities.

Please publish notice of this FEA-FONSI's availability in the next edition of *The Environmental Notice*. A copy of the FEA-FONSI along with online submission requirements has been submitted via your online submittal site.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jkh
Attachments: 1) FEA Report
2) Draft Environmental Assessment Response Letters

c: Facilities Development Branch

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Wednesday, January 29, 2025 4:16:09 PM

Action Name

Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Wailuku, Maui

Tax Map Key(s) (TMK(s))

(2) 3-08-007: 098

Action type

Agency

Other required permits and approvals

NPDES General Permit, Chapter 6E HRS Review, Grading Permit, Building Permit, Permit to Work within the County Right-of-Way, Water Use Permit, Sewage Connection, Community Noise Permit

Proposing/determining agency

Hawai'i State Department of Education, Facilities Development Branch

Agency jurisdiction

State of Hawai'i

Agency contact name

Jenny Ho

Agency contact email (for info about the action)

jenny.ho@k12.hi.us

Email address for receiving comments

mfernandez@bowersandkubota.com

Agency contact phone

(808) 784-5122

Agency address

P.O. Box 2360
Honolulu, Hawaii 96804
United States

Map It

Is there a consultant for this action?

Yes

Consultant

Bowers + Kubota Consulting, Inc.

Consultant contact name

Matthew Fernandez

Consultant contact email

mfernandez@bowersandkubota.com

Consultant contact phone

(808) 836-7787

Consultant address

2153 North King Street, Suite 200
Honolulu, Hawaii 96819
United States
Map It

Action summary

The State of Hawai'i, Department of Education (DOE), Facilities Development Branch is proposing to relocate and develop two new buildings on an undeveloped area within a larger State-owned property that is used by Maui High School. The project area would use approximately 2.2-acres of the 6.5-acres of the school property's undeveloped space.

The proposed DOE buildings are to be a new one-story building and parking lot for the Maui District Mowers Facility, and a new one-story building and parking lot for the McKinley School for Adults Maui Campus program. The proposed action will also involve constructing one new driveway to connect the new facilities to West Papa Avenue, landscaping, perimeter fencing around the site, and provide electrical, telecommunications, water, sewer, and drainage utilities and infrastructure to service the proposed facilities.

Reasons supporting determination

The FONSI determination is based on the information presented in the Final EA-FONSI, review of public and agency comments received, and review of the project's effects in relation to the significance criteria prescribed under HAR §11-200.1-13, and as discussed in Chapter 6 of the Final EA.

Attached documents (signed agency letter & EA/EIS)

- DOE-Maui-HS-Publication-Form-Chapter-343-Agency.pdf
- 250129-DOE-Maui-HS-FINAL-EA_FILED.pdf
- 12288-14-Ltr-Fonsi-Dist-Mowers-Adult-School-Q55287-21-jkh-mt-signed.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map
• MHS-Project-Site.zip
Authorized individual
Matthew Fernandez
Authorization
• The above named authorized individual hereby certifies that he/she has the authority to make this submission.

FINAL ENVIRONMENTAL ASSESSMENT
Finding of No Significant Impact

Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults

Kahului, Island of Maui, Hawai'i

Proposing Agency: State of Hawai'i, Department of Education
Prepared By: Bowers + Kubota Consulting
January 2025

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FINAL ENVIRONMENTAL ASSESSMENT
Finding of No Significant Impact

Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults

DOE Job No. Q55287-21

TMK: (2) 3-8-007: 098

Kahului, Island of Maui

January 2025

Proposing Agency:

State of Hawai'i

Department of Education

Prepared by:

Bowers + Kubota Consulting

2153 North King Street, Suite 200

Honolulu, HI 96819

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PROJECT SUMMARY TABLE

This Final Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Title 11-200.1 Environmental Impact Statement Rules.

Project Name:	Relocation of the Department of Education Maui District Mowers Facility and Community School for Adults
Applicant and Approving Agency:	Ms. Jadine Urasaki, Public Works Administrator Facilities Development Branch State of Hawai'i, Department of Education P.O. Box 2360 Honolulu, HI 96804
Preparers of the Environmental Assessment:	Bowers + Kubota Consulting, Inc. 2153 N King Street, Suite 200 Honolulu, HI 96819-4554 Contact: Matthew Fernandez, Planner Email: mfernandez@bowersandkubota.com
HRS §343 Trigger:	Proposed use of State lands and funds
Project Location:	660 Lono Avenue, Kahului, Maui Island, Hawai'i 96732
Tax Map Key Parcel:	(2) 3-8-007: 098
Project Size:	Approximately 2.2-acres
Landowner:	State of Hawai'i
Existing Use on Project Site:	Unoccupied vacant land with heavy vegetation
State Land Use District:	Urban District
County of Maui Zoning:	R-2 Residential
Special Management Area (SMA):	Outside of SMA
Flood Zone Designation:	Zone X (Area outside the 500-year floodplain)
Proposed Action:	DOE proposes the relocation and development of two new buildings to an undeveloped area on State property. The developed portion of the property is currently used by Maui High School. The proposed DOE buildings are to be a new one-story building (approximately 6,400 ft^2) and parking lot (approximately 11,600 ft^2) for the Maui District Mowers Facility, and a new one-story building (approximately 9,125 ft^2) and parking lot (approximately 18,450 ft^2) for the McKinley School for Adults Maui Campus program. The Proposed Action will also involve constructing one new driveway to connect the new

	facilities to West Papa Avenue, landscaping, installation of fencing around the project site, and provide electrical, telecommunications, water, sewer, and drainage utilities and infrastructure to service the proposed facilities. The area of disturbance would be approximately 96,000 ft^2 or 2.2-acres. The adults Maui campus program would utilize the new building for several years until their permanent facility is constructed by the State of Hawai'i, Hawai'i Housing Finance and Development Corporation at the planned Kahului Civic Center Mixed-Use Complex. After relocating back to the new mixed-use complex, Maui High School would then utilize this building to support their classroom and/or administration activities.
Permits and Approvals Needed for the Project:	HRS Chapter 6E Compliance NPDES General Permit Community Noise Permit Grading Permit Building Permit Roadway Permit Water Use Permit Sewage Connection
Determination:	Finding of No Significant Impact (FONSI)

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LIST OF ACRONYMS

AAQS Ambient Air Quality Standards

ADA Americans with Disabilities Act

AFONSI Anticipated Finding of No Significant Impact

AIS Archaeological Inventory Survey

AMP Archaeological Monitoring Plan

AQI Air Quality Index

BMP Best Management Practice

CDP Census Designated Place

CIA Cultural Impact Assessment

CIP Capital Improvements Program

CRB Coconut Rhinoceros Beetle

CZM Coastal Zone Management

dBA Decibel (A-weighted sound level)

DEM Department of Environmental Management, County of Maui

DLNR Department of Land and Natural Resources, State of Hawai'i

DOE Department of Education, State of Hawai'i

DOE-FMB Department of Education, Facilities Maintenance Branch

DOH Department of Health, State of Hawai'i

DEM Department of Environmental Management, County of Maui

DPW Department of Public Works, County of Maui

DWS Department of Water Supply, County of Maui

EA Environmental Assessment

EAL Environmental Action Level

EPA Environmental Protection Agency

ESA Endangered Species Act

FAA Federal Aviation Administration

HAR Hawai'i Administrative Rules

HECO Hawaiian Electric Company

HHFDC Hawai'i Housing Finance and Development Corporation, State of Hawai'i

HiSET High School Equivalency Test

HRS Hawai'i Revised Statutes

IAL Important Agricultural Lands

Ksat Saturated Hydraulic Conductivity

LOS Level of Service

LRFI Archaeological Literature Review and Field Investigation Report

LUC State Land Use Commission

MCC Maui County Code

MCSA McKinley Community School for Adults

MHS Maui High School

MGD Million Gallons per Day

MPH Miles per Hour

NHPA National Historic Preservation Act (16 U.S.C. § 470(F))

NOAA National Oceanic and Atmospheric Administration

NPDES National Pollutant Discharge Elimination System

OGG Kahului Airport

OPSD Office of Planning and Sustainable Development, State of Hawai'i

PZUE Puuone soil type

RFP Request for Proposal

SFP Hawaii State Functional Plans

SHPD State Historic Preservation Division

SLR-XA Sea Level Rise Exposure Area

SMA Special Management Area

SY Sustainable Yield

TIR Traffic Impact Report

TMK Tax Map Key

USGS United States Geological Survey

USFWS United States Fish and Wildlife Service

WWRF Wailuku-Kahului Wastewater Reclamation Facility

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1.0 PROJECT OVERVIEW

1.1 BACKGROUND

The McKinley Community School for Adults (MCSA), operated by the State of Hawai‘i (State) Department of Education (DOE), is an adult education program that provides basic, remedial, and continuing education opportunities for the adult and community population of Hawai‘i. MCSA prepares its students with the necessary education, qualifications, and skills to succeed in college or the workforce. There are five MCSA campuses statewide: McKinley Campus (Honolulu), Farrington Campus (Honolulu), Moanalua Campus (Honolulu), Maui Campus (Kahului), and Kaua‘i Campus (Līhu‘e).

The Maui Campus in Kahului is the third largest MCSA campus by enrollment and primarily serves students from the islands of Maui, Moloka‘i, and Lāna‘i with about 960 registered students in 2019. The existing MCSA Maui Campus facility located at 179 W Ka‘ahumanu Avenue is a one-story building occupying less than 0.5-acre of a 5.5-acre State-owned parcel situated across from the Queen Ka‘ahumanu Shopping Center and the Maui Beach Hotel.

The DOE Maui District’s lawnmower operations and maintenance facility is located in a portion of the same one-story building as the existing MCSA Maui Campus. This facility is operated by DOE’s Facilities Maintenance Branch (DOE-FMB). This facility, along with an adjacent small parking lot, currently serves as the main facility to store lawnmowers and trucks with lawnmower trailers for the DOE on Maui. The facility is also used for the minor maintenance of its mowers. Both the MCSA and the lawnmower maintenance building were built in the 1920s and are in a deteriorated state.

The existing site of both facilities is to be redeveloped by the State Hawai‘i Housing Finance and Development Corporation, and therefore, both programs would need to be relocated off-site during construction. The DOE has identified a vacant and undeveloped area on the Maui High School (MHS) property that would be the proposed temporary location for the new MCSA Maui Campus building and permanent location for the DOE Mowers Facility. MCSA Maui Campus would relocate back to their original site as part of the new Kahului Civic Center Mixed-Use Complex development, and MHS would utilize the building as additional classrooms and/or space for administrative operations.

The project site of approximately 2.2-acres is situated entirely within an unoccupied and heavily vegetated area of the Maui High School property. The following photos in Exhibits 1-1 and 1-2 show existing interior and exterior conditions of the MCSA Maui Campus and DOE Mowers Facility.

EXHIBIT 1-1: Exterior and Interior Photos of the Existing MCSA Maui Campus Building (179 W Kaʻahumanu Ave.)

EXHIBIT 1-2: Exterior and Interior Photos of the Existing DOE Lawnmower Maintenance Facility (179 W Kaʻahumanu Ave.)

1.2 PURPOSE FOR ENVIRONMENTAL ASSESSMENT

Chapter 343 (Environmental Impact Statements), Hawai'i Revised Statutes (HRS), establishes a system of environmental review at the State and County levels to ensure that environmental concerns are given appropriate consideration in decision-making along with economic and technical considerations. The State of Hawai'i, Office of Planning and Sustainable Development's (OPSD) Environmental Review Program facilitates the environmental review process in Hawai'i.

This project triggers the State's environmental review process under HRS Chapter 343, as amended, and Title 11, Chapter 200.1 (Environmental Impact Statement Rules) of the State Department of Health's Hawai'i Administrative Rules (HAR), as amended (State of Hawai'i, 2019) because the action involves:

1. *Use of State Funds.* State funds would be used for the grading and demolition of the site, and construction of the proposed MCSA Maui Campus building, Mowers Facility, and associated parking lots, driveway, utilities, and fencing.
2. *Use of State Lands.* The project involves the construction of State facilities on the Maui High School property which is a State-owned land.

Consequently, a Draft Environmental Assessment (Draft EA) document was prepared in accordance with these regulations to allow for the use of State lands and funds for the construction of the project. Pre-assessment consultation comments received as part of the preparation of the Draft EA document are included in Appendix A-1. The Draft EA was prepared and published for public review in the May 08, 2024 issue of the State Environmental Review Program's *The Environmental Notice.* The 30-day public review and comment period concluded on June 07, 2024.

This Final Environmental Assessment (Final EA) has been subsequently prepared based on the published Draft EA and comments received. A Finding of No Significant Impact (FONSI) is warranted for this project based on the results. Comment letters received from the Draft EA and responses are available in Appendix A-2.

Applicant Background

The Applicant or Proposing Agency for this project is the State Department of Education (DOE). DOE is the only statewide public school district in the country and is comprised of 15 complex areas and 258 schools. Each of the 15 complex areas are managed by the DOE and are comprised of two to four school complexes, consisting of a high school and the elementary and middle/intermediate schools that feed into it.

State tax revenue bonds are primarily used for the day-to-day operations of DOE schools and offices. DOE funds for the development and upgrade of school and office facilities come from their Capital Improvements Program (CIP) budget sourced mostly from state bonds. The CIP pays for renovations, repairs and maintenance to existing facilities, landscape improvements, new construction, land acquisition, and utility modifications for its public schools.

Approving Agency

The project is an "Agency Action" under the State's environmental review regulations because the project involves the use of State land and funds. The DOE serves as the "Approving Agency" for the processing of this environmental assessment document and proposes a Finding of No Significant Impact (FONSI) determination based on the Draft EA results, review of the comments received, and evaluation of the project in relation to the significance criteria in Chapter 6.

Bowers + Kubota Consulting, Inc. (B+K) is serving as the "Authorized Agent" on behalf of the DOE (Applicant) in the preparation of this Final EA. This Final EA was prepared pursuant to Chapter 343, Environmental Impact Statements, HRS, as amended and the State Department of Health's Title 11, Chapter 200.1, HAR (Environmental Impact Statement Rules) (State of Hawai'i, 2019).

1.3 REGIONAL SETTING AND PROJECT SITE

Maui High School (MHS) is located at 660 Lono Avenue in Kahului [Tax Map Key (TMK): (2) 3-8-007:098)] on an approximately 73.5-acre parcel owned by the State of Hawai'i. MHS is within the moku (district) of Wailuku and in the ahupua'a (land division) of Wailuku. Kahului is the island's largest city and functions as the island's main government capital along with being the primary business and retail center serving Central Maui. Kahului is also the most populated and urban area on the island with many residential communities and uses such as parks and schools. Kahului also serves as the primary gateway to Maui as it includes the Kahului Airport and Harbor which are the island's major transportation hubs. Other major uses in Kahului include the island's main medical center, Maui Memorial Medical Center, the University of Hawai'i Maui College campus, and golf courses.

MHS serves as one of the main public high schools for the central and southeastern districts of the island and is situated in the heart of Kahului within a residential area. As shown in Figure 1.1, the areas surrounding MHS are made up predominantly of single-family residential homes, and one multi-family residential complex to the southwest of MHS. Serving these residential communities are three County parks located around MHS. The Maui High School Park is located to the immediate west of MHS, Kahului Park is located to the immediate north of MHS, and the Kahului Community Center Park is located about 0.2-miles northwest of MHS. The parks contain many common park features such as large open grass fields, baseball and soccer fields, and basketball and tennis courts. Kahului Elementary School bounds MHS to the north. To the south of MHS across West Papa Avenue is a large detention basin used to detain stormwater runoff and help to prevent flooding in the neighboring residential areas.

Ka'ahumanu Avenue (State Route 32) generally runs in an east-west direction near the Kahului coastline and is a primary vehicular road that connects major uses in Kahului such as the Kahului Shopping Center, Queen Ka'ahumanu Center, Maui Mall, University of Hawai'i Maui College, Maui Memorial Medical Center, War Memorial Stadium, Kahului Harbor, and connects the Kahului Airport and Wailuku town at both ends.

Figure 1.1: Project Location Map

As shown in Figure 1.1, West Papa Avenue borders MHS in the south and is a County of Maui roadway oriented in the east-west direction serving as a connector road between Kaʻahumanu Avenue (State Route 32) and Puʻunēnē Avenue. Other roads bordering MHS are Lono Avenue to the east and Molokaʻi Hema Street to the west. Lono Avenue serves as the main vehicular access road to the MHS campus. These roads, with West Papa Avenue, primarily serve residential homes in the area.

Maui High School and Project Site

The existing MHS facilities cover approximately 54-acres of the 73.5-acres of land that make up TMK (2) 3-8-007:098. Maui High School Park covers roughly 13-acres of the TMK, and the other 6.5-acres is undeveloped.

MHS facilities contain many typical traditionally built high school facilities such as classrooms, staff offices, library, cafeteria, gym, weight rooms, locker rooms, and a band room. In addition, there are several portable buildings constructed throughout the campus which serve as other academic program spaces or staff offices. Located at the northwestern part of the campus are the school's outdoor athletic spaces which include a baseball field, football field, tennis courts, basketball courts, and track and field. The northeast corner of the campus contains the school parking with about 400 parking spaces for faculty, staff, and student use. All vehicular access points into MHS are from Lono Avenue.

EXHIBIT 1-3: Aerial view of undeveloped area.

The project site (also referred to as project area) of approximately 2.2-acres is situated entirely within the estimated 6.5-acre vacant and undeveloped area of the property. This existing area as shown in Exhibit 1-3 is filled with heavy dry shrubland vegetation. The site is in the southern portion of the property along West Papa Avenue and would be situated just south of MHS Building L and E, and a shed and maintenance building used by MHS staff. Buildings L and E contain classrooms and other academic spaces for shop and technical programs. Access to the project site is currently only from within the MHS campus as the outside perimeter of the project site along West Papa Avenue is fenced as shown in Exhibit 1-4.

EXHIBIT 1-4: View of site from Papa Avenue.

1.4 PROJECT PURPOSE AND NEED

The purpose of this project is for the immediate relocation of the MCSA Maui Campus and DOE lawnmower programs, and the need for new and improved facilities for these programs. The reason for the relocation of the MCSA Maui Campus and DOE lawnmower maintenance facility are primarily due to demolition of the existing structures for the future use and development of the new Kahului Civic Center Mixed-Use Complex, the lack of existing space for these programs, and the deteriorated state of the existing buildings. This project is intended to minimize disruptions to the MCSA Maui Campus and DOE lawnmowers programs by providing new facilities to continue their programs and operations.

Both the MCSA Maui Campus and the lawnmowers facility are important to the DOE. The MCSA Maui Campus serves as the only community school for adults on Maui. Students and adults would be negatively impacted by not having options on Maui to obtain such assistance that will affect their ability to pursue higher education or effectively compete in the County's workforce for the next several years. The DOE Maui District's lawnmower facility is important as it's a central facility for the DOE's Facility Maintenance Branch to store and maintain trucks, trailers, and mowing equipment for the Maui School District mowing operations.

Use and Redevelopment of the Existing Site

In 2019, the State's Hawai'i Housing Finance and Development Corporation (HHFDC) planned to construct the Kahului Civic Center Mixed-Use Complex on the 5.5-acre property that contains the existing MCSA Maui Campus building and lawnmower maintenance facility. The proposed $192 million Kahului Civic Center Mixed-Use Complex would include affordable housing units, a community center, transit hub, government offices, and about 7,000-square feet of space for the DOE MCSA Maui Campus program. The mixed-use complex is expected to break ground in 2027 and with the first phase to be completed in 2029. As a result, existing buildings and structures on the property including those used by the MCSA and DOE lawnmowers facility would need to be demolished and its programs to be relocated before 2027.

The Final EA and FONSI for the Kahului Civic Center Mixed-Use Complex (published on May 2022) indicated that the DOE lawnmower maintenance facility would need to be relocated off-site, as the use and space requirements are not compatible with the mixed-use project. Because no replacement site for the DOE lawnmower maintenance facility was identified in that Final EA, a new site for the Mowers Facility is needed immediately before the demolition of its existing facility and construction of the Kahului Civic Center Mixed-Use Complex. The MCSA Maui Campus would also need to be temporarily relocated to an off-site location for several years during the redevelopment of the existing site.

The Kahului Civic Center Mixed-Use Complex EA indicated that the project will be developed through a public-private partnership. HHFDC would issue a Request for Proposal (RFP) to seek a developer for the housing phase of the project. The construction of the Civic Center portion of the project which includes space for the MCSA Maui Campus program would be developed as a separate RFP.

The principal purpose of the Kahului Civic Center Mixed-Use Complex project is to increase affordable housing stock on Maui, and to also address the shortage of State office space in the Wailuku-Kahului area. Since the project was proposed by HHFDC, the priority and likely initial phase of the project is the construction of multi-family housing to fulfill the principal purpose of the project.

The construction of the space proposed for the MCSA Maui Campus by another developer of the Civic Center creates concerns due to development priorities. The MCSA would not be revenue generating, thus could be later prioritized and phased in the construction timeline. These situations create many uncertainties for when the space for the MCSA Maui Campus program would be available and, therefore, the MCSA Maui Campus would need to be temporarily relocated to another off-site location to continue its operations for the next several years.

The project addresses these needs by providing a feasible site that is centrally located to accommodate both the MCSA Maui Campus and the DOE lawnmowers facility and allowing for construction and operation of both programs before the demolition of their existing space for the Civic Center Mixed-Use Complex project. After the space dedicated for the MCSA Maui Campus program in the new Civic Center is completed in several years, only the MCSA would relocate back to the site. Maui HS would then be able to utilize this building used by MCSA for additional classrooms and/or administrative space to support their programs and operations.

Lack of Space and Deteriorated State of Existing Facilities

As mentioned in the Kahului Civic Center Mixed-Use Complex EA, the MCSA Maui Campus and the DOE lawnmower maintenance facility were built in 1920 and are in a deteriorated state. Adjacent to these facilities, there is a building built during the same year that had already collapsed. Given the age and work needed to maintain these wooden buildings, these conditions create a long-term concern for users of the facilities in being adequately accommodated into the future.

In addition, the existing 2,780 square-foot area utilized by the MCSA Maui Campus program does not provide enough space needed for its operations as some spaces need to be shared as shown in Exhibit 1-5. For its operations and academic programs, MCSA Maui Campus has a need for a computer classroom, dedicated storage spaces, and larger office spaces.

EXHIBIT 1-5: Photo of room used as an office space and kitchen/breakroom.

The existing DOE lawnmowers facility currently utilizes its outdoor spaces as areas to park and store its lawnmower trailers, vehicles, and some of its lawnmowers. For its operations, the DOE lawnmowers facility has a need for more indoor and secured areas to store its lawnmowers, vehicles, and trailers, and to protect them from acute deterioration from the sun and rain. Existing indoor spaces are used as office space and for the minor repair and maintenance of its lawnmowers. The project addresses these needs by providing MCSA and the lawnmowers program with modern and improved facilities with sufficient space needed for its programs and operations.

1.5 DESCRIPTION OF THE PROPOSED ACTION

The DOE is proposing the construction of two (2) new buildings on about 2.2-acres within about 6.5-acres of undeveloped space on TMK (2) 3-8-007:098. As described in Section 1.3, this TMK is a 73.5-acre State of Hawai‘i property located at 660 Lono Avenue and is home to Maui High School (54-acres) and Maui High School Park (13-acres). The Proposed Action would not take place on a separate TMK parcel or include subdividing the existing TMK. The Proposed Action would address the purpose and needs of the project described in Section 1.4.

The two proposed DOE buildings are to be a new one-story building and parking lot for the Maui District Mowers Facility (hereafter referred to as “Mowers Facility”), and a new one-story building and parking lot for the temporary (several years) home of the MCSA Maui Campus before Maui HS takes over this building. The Proposed Action will also involve constructing one new driveway to connect the new facilities to West Papa Avenue, landscaping, installation of fencing around the project site, and provide electrical, telecommunications, water, sewer, and drainage utilities and infrastructure to service the proposed facilities. The Mowers Facility would use about 30% or 0.6-acres of the total site, the MCSA Maui Campus would use about 50% or 1.1-acres of the site, and the other 20% or 0.5-acres would be landscaping and shared-use spaces such as the driveway and paths. See Figure 1.2 for the project site plan and improvement area.

Mowers Facility

The Mowers Facility will be situated on the west portion of the project site and south of MHS’s Building E and maintenance building. Overall, the Mowers Facility will encompass approximately 6,400-square feet and the surrounding paved areas will cover approximately 11,600-square feet. The one-story Mowers Facility building would be about 17-feet high. Paved areas will include up to six (6) new parking stalls with one accessible stall, mower wash area, and a large service area fronting the facility for trucks with lawnmower trailers to maneuver in and out of the facility.

As shown in Figure 1.3, the front or east side of the building would have its main access door along with four (4) garage style sliding doors that lead into large storage bays for trucks, lawnmowers, and trailers. There are two other facility access doors on the north and south side of the building. Attached to the south side of the building is an exterior storage area that is secured by fencing.

Figure 1.2: Project Site Plan

Figure 1.3: Mowers Facility Building Elevations

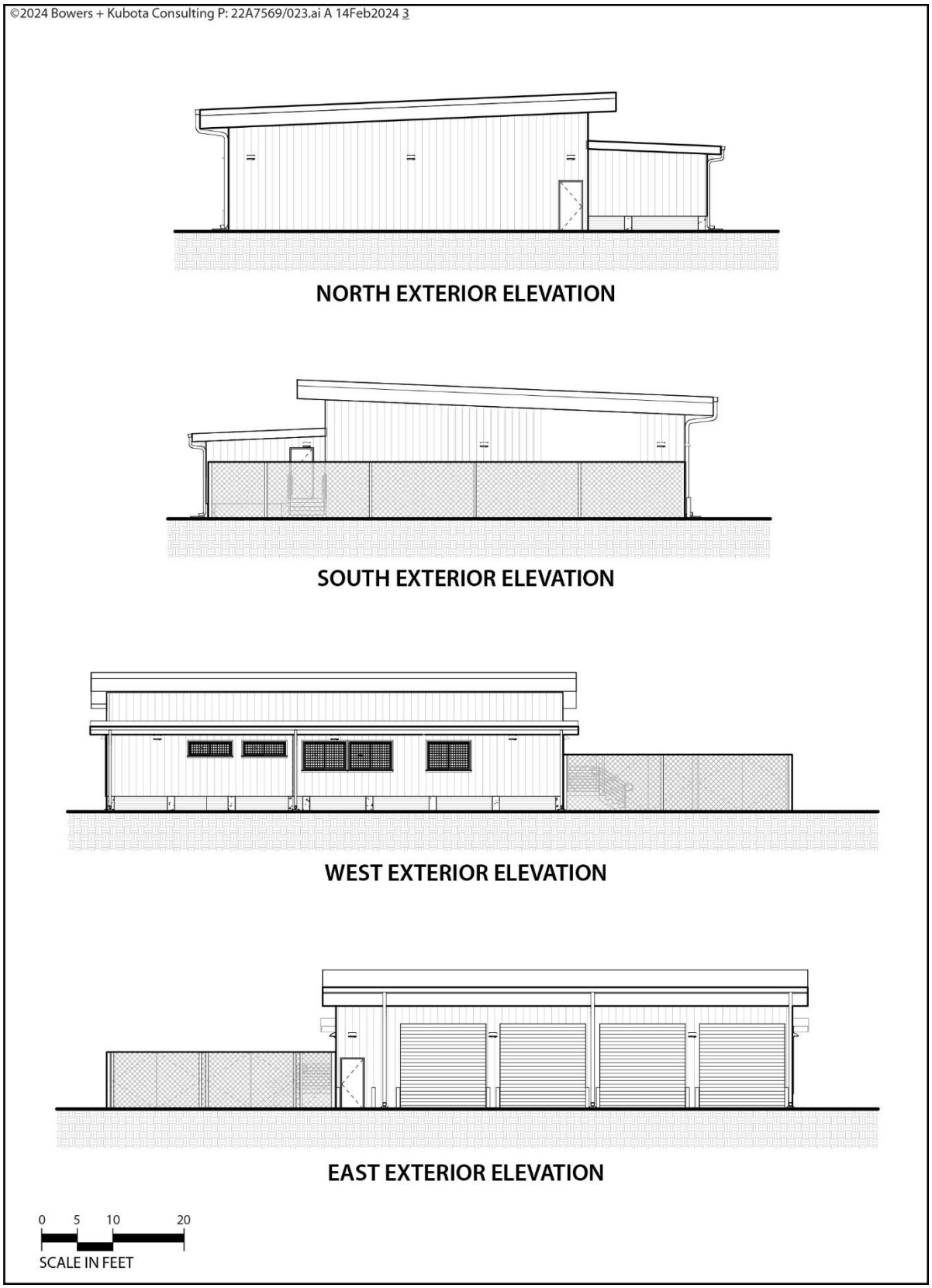


Figure 1.4 depicts the floor plan and programs within the Mowers Facility. The interior of the building includes four large storage bays, two additional rooms for storage, a staff breakroom, an office, restrooms, and utility spaces.

The facility would be occupied by existing DOE-FMB staff who will also be relocated to the site for the continued operation of DOE's Maui District mowing program. The building would be used for DOE lawnmower operations, the storage of mowers and trucks with trailers, and for the minor maintenance of those mowers. The Mowers Facility would be operated by at least three (3) DOE employees working from Tuesday to Saturday between 6:00am to 2:30 pm. There would be at least three (3) trucks with or without a lawnmower trailer accessing the proposed facility during working hours. In the future, all or some of the operation of the facility may be transferred to Maui High School including district-wide mowing responsibilities.

MCSA Maui Campus

The MCSA building will be in the east portion of the project site and south of the existing MHS campus Building L. The MCSA building will encompass approximately 9,125 square feet to be used for classrooms, offices, computer room, test center, and various common areas. The one-story building would be approximately 14-feet high. Fronting the building, the paved parking lot will cover approximately 18,450 square feet and provide up to 50 parking stalls and two (2) accessible stalls with a shared access aisle.

Figure 1.5 displays the exterior elevation plans of the MCSA building. The facility's main access doors would be on the south side of the building which connects to the parking lot. Two other access doors would be on the building's east and north side.

Programs included in the proposed MCSA building are reflective of the needs of the MCSA Maui Campus program as shown in Figure 1.6. For its academic programs, the interior of the facility includes three (3) large classrooms, a computer classroom, and a test center. The building also includes a large general office space, four (4) smaller staff office spaces, a lobby, and a conference room and breakroom to be used by faculty and staff. There are also two dedicated storage rooms, restrooms, and utility rooms. Interior renderings of the building are shown in Exhibit 1-6.

For several years, the proposed MCSA building will be used as a school for adults operated by DOE's MCSA Maui Campus program until they relocate back to the completed Kahului Civic Center Mixed-Use Complex. The MCSA building would be operated by at least 3 full-time DOE staff and up to 15 part-time faculty and staff working at various periods throughout the week between 7:30 a.m. to 8:00 p.m.

Academic programs at MCSA Maui Campus include an Adult Secondary Education High School Equivalency Program, Workforce Development Diploma Program, Adult Basic Education, and English Language Acquisition program. These programs are intended to prepare its students for higher education or to enter the workforce. In 2025, enrollment is projected to include up to 140 High School Equivalency Program students, 40 Adult Basic Education students, and 60 English Language Acquisition students. Academic classes would be held year-round at MCSA Maui Campus and students are offered the opportunity to also attend classes remotely.

Figure 1.4: Mowers Facility Floor Plan

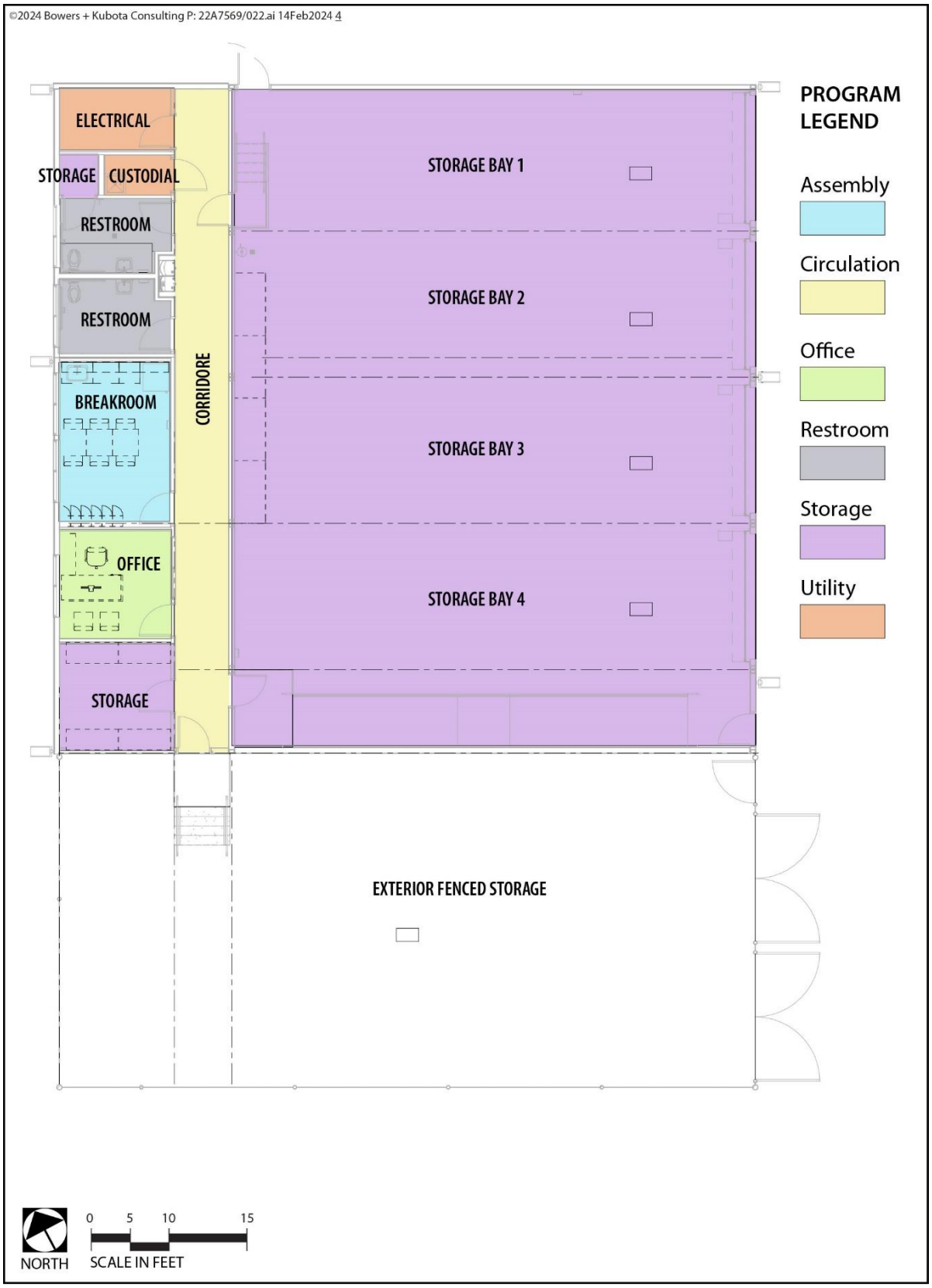


Figure 1.5: MCSA Maui Campus Building Elevations

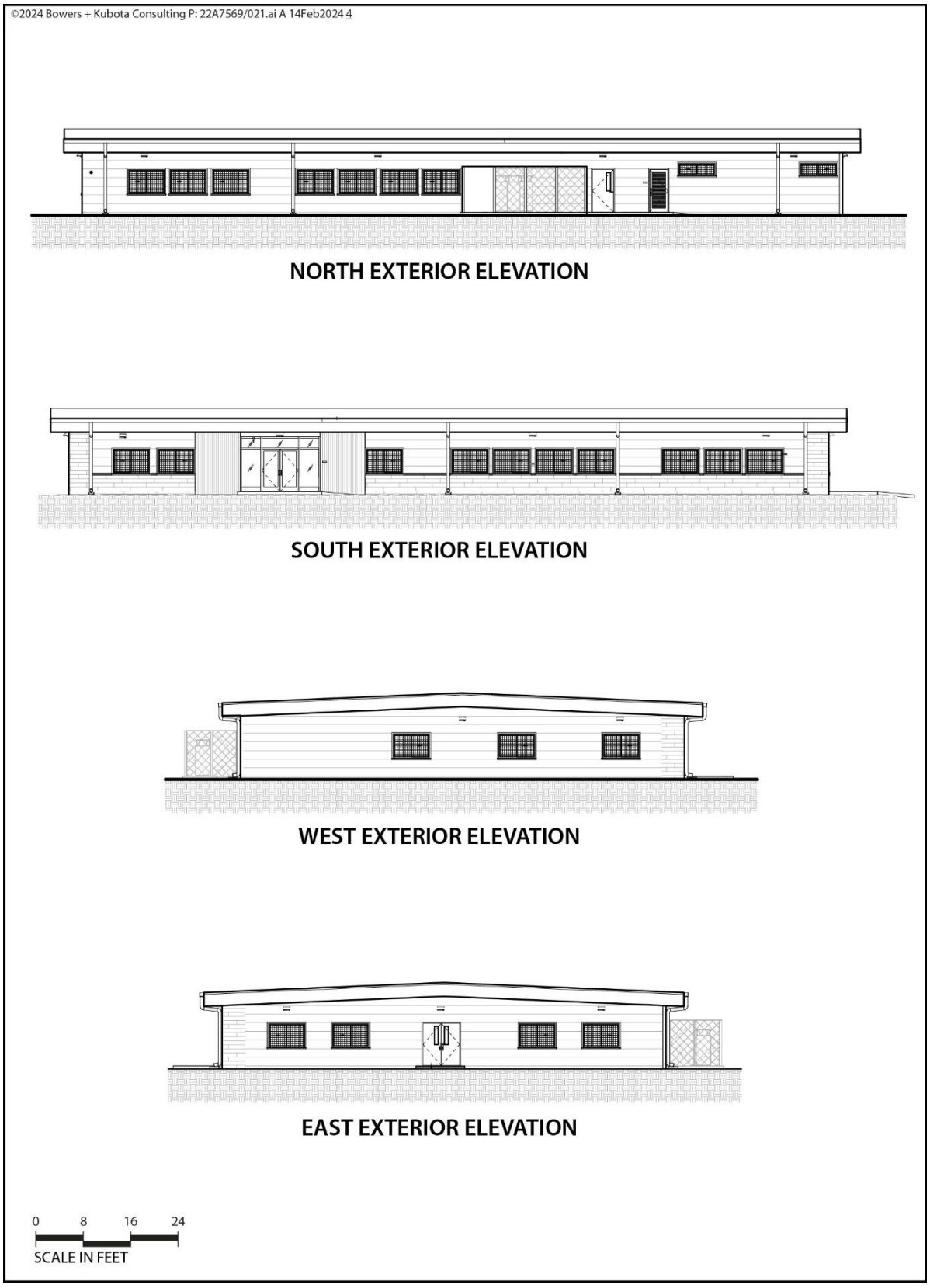


Figure 1.6: MCSA Maui Campus Floor Plan

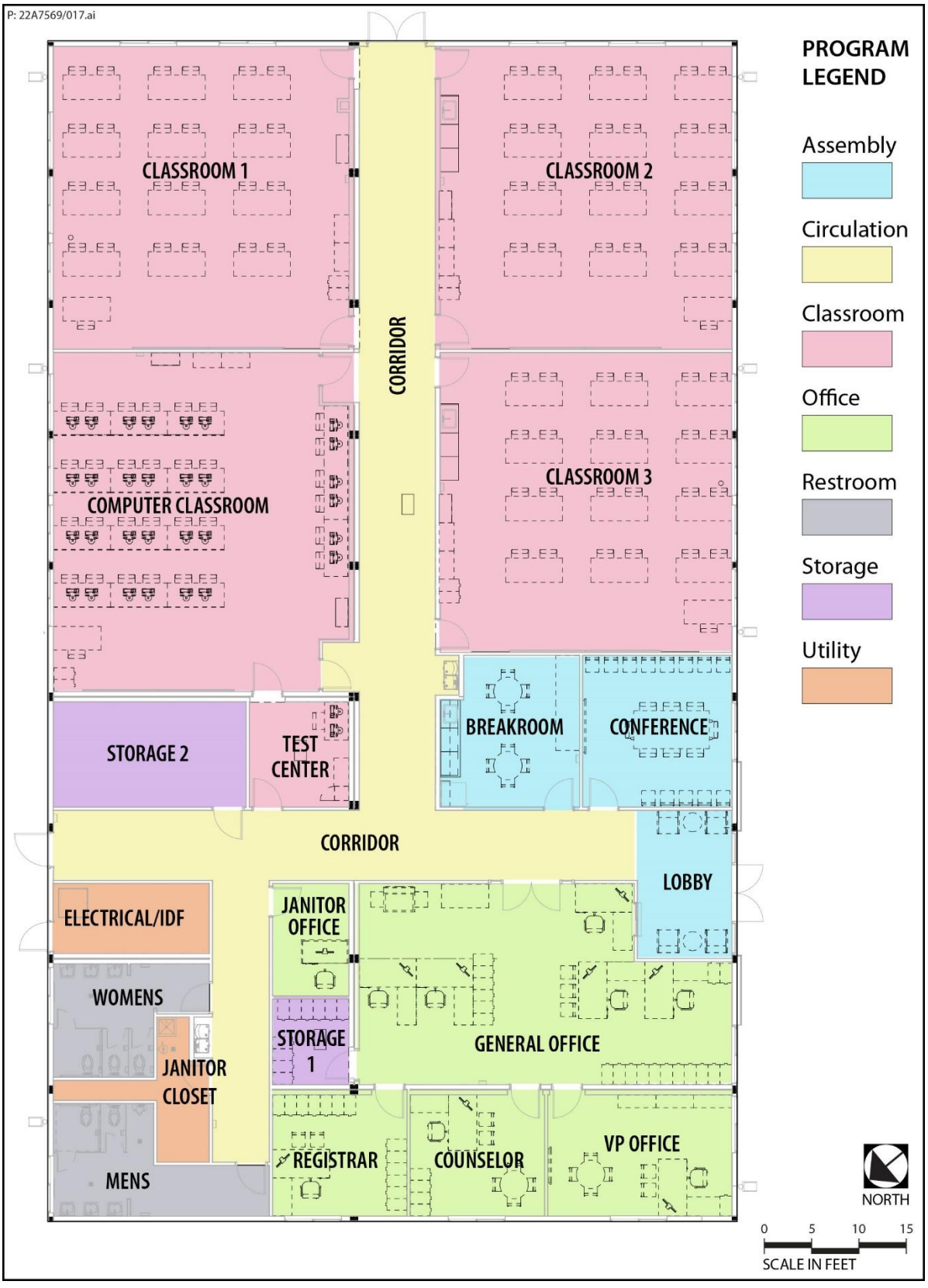


EXHIBIT 1-6: Interior renderings of the proposed MCSA Maui Campus building.

A sample of a typical weekly schedule of classes to be held at the new MCSA Maui Campus along with the possible number of students within a class are shown below. The MCSA Maui Campus program intends to add more evening and Saturday classes as a result of the new academic classrooms.

Sample of a Weekly Schedule of Classes:

Monday, Wednesday, and Friday

9:00 a.m. to 12:00 p.m.: High School Equivalency Prep course (GED) *(30-40 students)*

11:00 a.m. to 2:00 p.m.: Computer lab and one-on-one tutoring *(10-20 students)*

5:00 p.m. to 7:00 p.m.: Night classes for workers, GED, and Basic Education program *(15-20 students)*

Tuesday, Wednesday, and Thursday

9:00 a.m. to 2:00 p.m.: Competency-based assessment classes (CASAS) *(10 students)*

9:00 a.m. to 11:00 p.m.: Workforce Development Diploma Program *(20 students)*

Tuesday and Thursday

9:00 a.m. to 11:00 p.m.: English Second Language class *(20 students)*

1:00 p.m. to 3:00 p.m.: English Second Language class *(20 students)*

Tuesday, Thursday, and Friday

10:00 a.m. to 4:00 p.m.: GED of High School Equivalency Test (HiSET)

After the space designated for the MCSA Maui Campus program in the new Kahului Civic Center Mixed-Use Complex is completed in several years, the MCSA program would relocate back to its original property within the new Civic Center. Thereafter, operation of this building on the project site would be transferred to Maui High School for other educational, program or administrative uses.

Driveway, Utilities, and Fencing

The project's proposed driveway would consist of a new access connection to West Papa Avenue. This new driveway would be the main access serving both the Mowers Facility and MCSA Maui Campus from West Papa Avenue and would be about 24-feet wide. The driveway would include cattle gates for security, to manage access to both facilities, and to close the facilities after working hours. In the future, the driveway could also serve as an additional vehicular access point into the back of the MHS campus to mainly serve as an extension to MHS's service and fire lane. This is a future need of MHS. A new gate at the end of the driveway to MHS would be installed to prepare for this potential future extension.

The proposed walkway that connects the MCSA facility into the MHS campus would serve as another pedestrian access point and improve connectivity for those entering from MHS.

The project's associated infrastructures and utilities include electrical lines, outdoor light fixtures, water pipelines, sewer and drainage lines, a drainage detention basin, and telecommunication lines which would connect to existing utility lines along West Papa Avenue and within the Maui High School campus. All utility infrastructure lines would be

placed underground. The Proposed Action also includes the installation of about 1,258 feet of chain-link fencing around the proposed facilities for security.

Ground Disturbance

The approximate total area of ground disturbance would be about 95,532 square feet or 2.2 acres. Ground disturbance activities include excavation, soil moving, construction grading, staging of construction equipment, and underground utility and infrastructure installation.

The proposed buildings would reach a depth of about 4-feet deep, and utilities would reach an approximate maximum depth of 7.5-feet. The project's drainage detention basin would be at a depth of 8.5-feet.

Landscaping

Landscape improvements are planned to include the placement of some trees in both parking lots and a combination of both grass and gravel for areas around the parking lots, along driveways, and around proposed buildings. The trees would be not fruit bearing to avoid attracting significant wildlife to the area. In addition, a vegetative screen or similar would be placed along portions of the Mower Facility's fence boundary and parking lot to serve as a visual screen. Irrigation lines will be installed in the parking lot and around the buildings to water the trees and other project-related vegetated areas.

Undeveloped areas outside of the 2.2-acre project site limits would remain as is. Maui High School would continue to be responsible for maintaining vegetation in these areas and to reduce the potential for wildfire ignition.

Demolition

To prepare the project site for construction, demolition plans include the removal of some existing trees, brush, irrigation equipment, the existing chain link fence, and the existing sidewalk and landscaping at the location of the proposed driveway. An erosion and sediment control plan would be in place before grading of the site.

The demolition of the existing MCSA Maui Campus and DOE lawnmowers facility at 179 W Ka'ahumanu Avenue is an action that was already included and addressed in the Kahului Civic Center Mixed-Use Complex EA. That work is distinct and separate from this project.

Expansion Area

The DOE has identified an area adjacent to the proposed Mowers Facility and closest to MHS Building E for a possible future expansion of MHS's mowing program. The extent and specific use of this area is not yet known, but the general area for this expansion was previously shown in Figure 1.2, and is included in the physical assessment of impacts associated with this entire site.

1.6 PRELIMINARY PROJECT COST AND TIMELINE

The proposed project is estimated to cost $9 million. Projected costs include site earthwork, construction, labor, and the installation of utilities.

Construction for the project is expected to take about 10 months beginning in early 2025 and would be operational for use in the winter of 2025.

1.7 APPROVALS AND PERMITS

As a requirement of HAR §11-200.1-28 (2019), this section in Table 1.1 provides a list of all required permits and approvals (state, federal, and county).

Table 1.1 Required Approvals and Permits for the Project

APPROVAL OR PERMIT	APPROVING AGENCY
HRS Chapter 6E Compliance	State of Hawai'i: Department of Land and Natural Resources, State Historic Preservation Division
National Pollutant Discharge Elimination System General Permit	State of Hawai'i: Department of Health, Clean Water Branch
Community Noise Permit	State of Hawai'i: Department of Health, Indoor and Radiological Health Branch
Grading Permit	County of Maui: Department of Public Works
Building Permits for Building, Electrical, Plumbing, & Driveway	County of Maui: Department of Public Works
Roadway Permit	County of Maui: Department of Public Works
Sewage Connection	County of Maui: Department of Environmental Management
Water Use Permit	County of Maui: Department of Water Supply

2.0 ALTERNATIVES CONSIDERED

As a requirement of HAR §11-200.1-18 (2019), this chapter identifies and considers alternatives to the Proposed Action that achieve the purpose and need of the project as discussed in Section 1.4. These alternatives are described in this section and include the no-action alternative which involves not implementing the project. However, these alternatives were eliminated from further consideration because they would not support the project's need and objectives as well as the project (Proposed Action). There were also other factors associated with these alternatives that did not make them as feasible and practical as the Proposed Action.

2.1 ALTERNATIVE 1: NO-ACTION

The No-Action Alternative would entail DOE not proceeding with the relocation of the MCSA Maui Campus and DOE lawnmowers programs. Eventually, the existing MCSA Maui Campus and DOE lawnmowers facilities would be demolished by 2027 as that site would be redeveloped for the State's Kahului Civic Center Mixed-Use Complex.

The DOE lawnmowers facility would no longer cease to exist as the facility is not included in the mixed-use project and no new replacement facilities for the lawnmower program would be constructed under this alternative. In the future, the DOE would thus need to identify another State-owned location or multiple locations to develop or house the lawnmower facility demolished. The 2.2-acre project area would subsequently remain vacant, undeveloped, and filled with heavy vegetation.

Currently, the Kahului Civic Center Mixed-Use Complex project includes about 7,000-square feet of space for MCSA Maui Campus programs to be relocated back to this site. However, it is anticipated that this space would not be available until a later phase of the project beyond 2029 due to the availability of financial funding and the project's prioritization for the construction of affordable housing. These situations create uncertainties for when the space for the MCSA Maui Campus program would be available. Therefore, if no-action is taken to relocate the program off-site before 2027, the MCSA Maui Campus would need to cease operations until its academic spaces in the Civic Center are constructed after several years or find new locations to accommodate their programs.

Consequently, this No-Action Alternative would have a significant negative impact on MCSA because they would not have a facility to operate from and conduct their adult educational and workforce development programs. Operations may also need to be split into various locations to accommodate them until the mixed-use development is completed, impacting their operations. These programs that are important to the community would have to cease until at least 2029 or be disrupted until suitable alternative sites are made available. Students and adults would be negatively impacted by not having options on Maui to obtain such assistance that will affect their ability to pursue higher education or effectively compete in the County's workforce.

Elimination of the DOE's mowers facility with no immediate replacement facility would negatively impact their ability to properly store and maintain lawnmowers and trucks with lawnmower trailers. If another facility is not available, such equipment would likely need to be stored separately within other available schools or facilities that are likely not designed or equipped to support their storage or minor maintenance activities. This would result in inefficient maintenance operations, decrease their security in being properly stored, and make it difficult for DOE staff to efficiently operate.

The No-Action Alternative would fail to meet the purpose and need of the Proposed Action which is for the immediate relocation of the MCSA Maui Campus and DOE lawnmower programs, and the need for improved facilities for these programs. Because of its failure to meet the project's purpose and need, the No-Action Alternative was determined to not be a feasible or practicable alternative and was, therefore, dismissed.

2.2 ALTERNATIVE 2: RELOCATE ONLY THE DOE MOWERS FACILITY

Under Alternative 2, the MCSA Maui Campus would be included within the development of the State's Kahului Civic Center Mixed-Use Complex. However, the MCSA Maui Campus would need to find their own locations to accommodate their programs until they can be relocated in the new civic center complex. The Mowers Facility would be relocated to the new facility developed on the State-owned project site adjacent to Maui High School. As a result, a smaller area within the 2.2-acre site would be required to accommodate the new Mowers Facility. Under this alternative, the purpose and need for accommodating the Mowers Facility would be achieved.

This alternative also entails that the MCSA Maui Campus would need to pause their adult academic and workforce programs until construction and completion of its designated 7,000-square-foot space within the proposed 66,000-squre-foot Kahului Civic Center is completed and operational. With construction of the new civic center planned to commence in 2027, the MCSA Maui Campus would need to find a temporary alternative location or have to suspend their operations since their existing building would be demolished.

The first phase of the civic center is projected to be completed in 2029. Subject to availability of financial funding, their space within the complex would not be available until 2029 at the earliest, or it could be later as the Civic Center is developed in phases. Without sufficient funding in place at that time, future phases could take longer to complete and significantly impact MCSA's operations especially if their space is included in later phases.

Because of Alternative 2's failure to meet the need to relocate and accommodate the MCSA Maui Campus to not negatively impact continuation of their programs, this was not a practical alternative and was, therefore, dismissed.

2.3 ALTERNATIVE 3: RELOCATE TO OTHER GOVERNMENT LANDS

Under Alternative 3, other State or County-owned lands on Maui would be used to relocate the proposed MCSA Maui Campus building and the DOE Mowers Facility. In this alternative, the Proposed Action would not take place on the 2.2-acre undeveloped State-owned site adjacent to Maui High School, and the existing site of these facilities would still be demolished and used for the development of the Kahului Civic Center Mixed-Use Complex.

An evaluation of potential government sites to accommodate both programs was conducted. The criteria used to identify other potential sites for the new facilities are that the land must be owned by the State or County, is in Kahului, and must have about 2-acres of undeveloped land. Other considerations include the compatibility of the facilities with County zoning, land use, and the distance from the existing site.

Due to the need for the immediate relocation of both facilities, lands owned by the State or County provide the most feasible path to development as the DOE would not have to go through a lengthy and costly land acquisition process to relocate the facilities in a more preferred location. The existing facilities are in Kahului, therefore, keeping these programs operating in Kahului would be the most preferred and convenient option for DOE staff, employees, and students of the programs. Areas outside of Kahului would pose accessibility issues as the facilities would be further away from the population center. Additionally, some government lands outside of urban Kahului would not be ideal for development as they are in mountainous or environmentally sensitive areas. Undeveloped areas of land with about 2-acres of space would be needed for the proposed facilities. Undeveloped lands would provide the most feasible path to development as redeveloping and demolishing existing structures would be costly and would lengthen the project's construction period.

State lands

Within Kahului, many of the State-owned lands as shown in Exhibit 2-1 are already developed or already have uses that are not complimentary or accommodating to the proposed uses. In addition, existing zoning and the far distance of some parcels from the existing site would not be ideal for the programs. The feasibility of each State parcel for the proposed facilities is discussed in Table 2.1 below.

Other State parcels not discussed or not listed on Exhibit 2-1 are either way less than the 2-acres needed for the proposed facilities or already are developed with uses that would not be practical to redevelop. These parcels include sites used by the Kahului Public Library, Hawai'i National Guard, and the Maui Community Correctional Center.

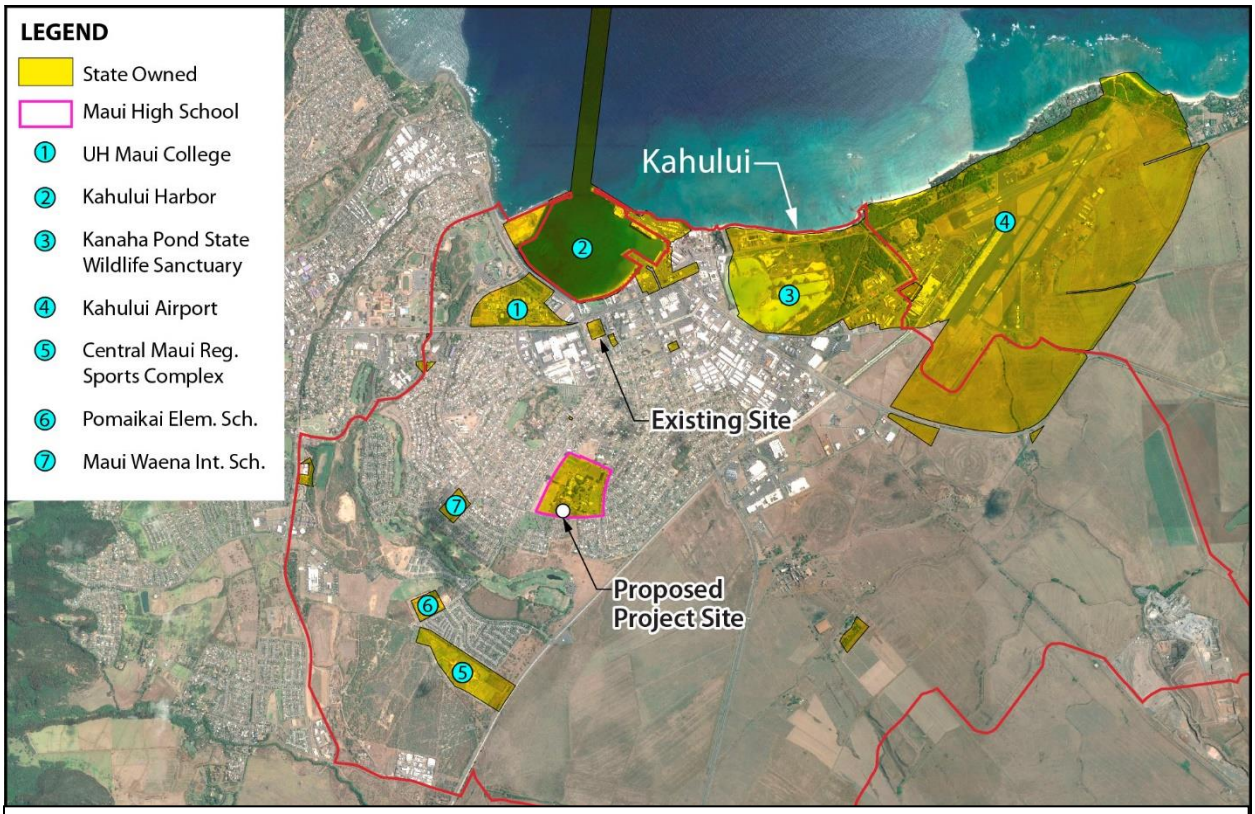


EXHIBIT 2-1: State owned lands in Kahului.

Table 2.1: Feasibility Evaluation of Other State Lands in Kahului

No.	Site	2-Acres of Undeveloped Land	County Zoning	Land Use	Discussion
1	UH Maui College	No	Residential (R-2), Light Industrial (M-1)	University	There are areas on-site that are at least 2-acres but are actively used by the school's solar farm and the agriculture program.
2	Kahului Harbor	No	Heavy Industrial (M-2)	Harbor, industrial	The site's zoning and land use is not compatible with the project.
3	Kanaha Pond State Wildlife Sanctuary	Yes	Airport	Conservation	Although the site has many acres of undeveloped land, the site is zoned for the airport and its current use is a wildlife sanctuary. Relocating the project at this site would have a significant impact on wildlife.
4	Kahului Airport and surrounding areas	Yes	Airport, Agriculture (AG), Light Industrial (M-1)	Airport	The site's land use and zoning are not compatible with the project. Undeveloped agriculture lands around the airport are designated for

					use by the State DOT, Airports Division.
5	Central Maui Regional Sports Complex	Yes	Agriculture (AG)	Park	The site's zoning code is not compatible with the project.
6	Pōmaikaʻi Elementary	Yes	Project District (PD)	Elementary school	Although these sites have about 3-acres of undeveloped space, the space is actively used by the school as its only open playing fields. Redeveloping and removing these areas from these schools would have an impact on its school programs.
7	Maui Waena Intermediate	Yes	Project District (PD)	Intermediate school	

County lands

Within Kahului, some of the large County-owned lands listed in Exhibit 2-2 are community parks and recreational spaces, and lands leased to the State DOE for use as elementary schools. However, redeveloping these parks or open spaces used by these schools and surrounding neighborhoods would negatively impact recreational users of these spaces. The feasibility of each County parcel for the proposed facilities is discussed in Table 2.2 below. In addition, the DOE may have to obtain a lease from the County to redevelop and use these parcels, which would delay the relocation of the project facilities.

Other County parcels not discussed or not listed on Exhibit 2-2 are either way less than the 2-acres needed for the proposed facilities, are already developed with uses that would not be practical to redevelop or are too far from the existing site. These parcels include sites used by multi-family housing, government offices, a landfill, and other smaller park and recreational spaces.

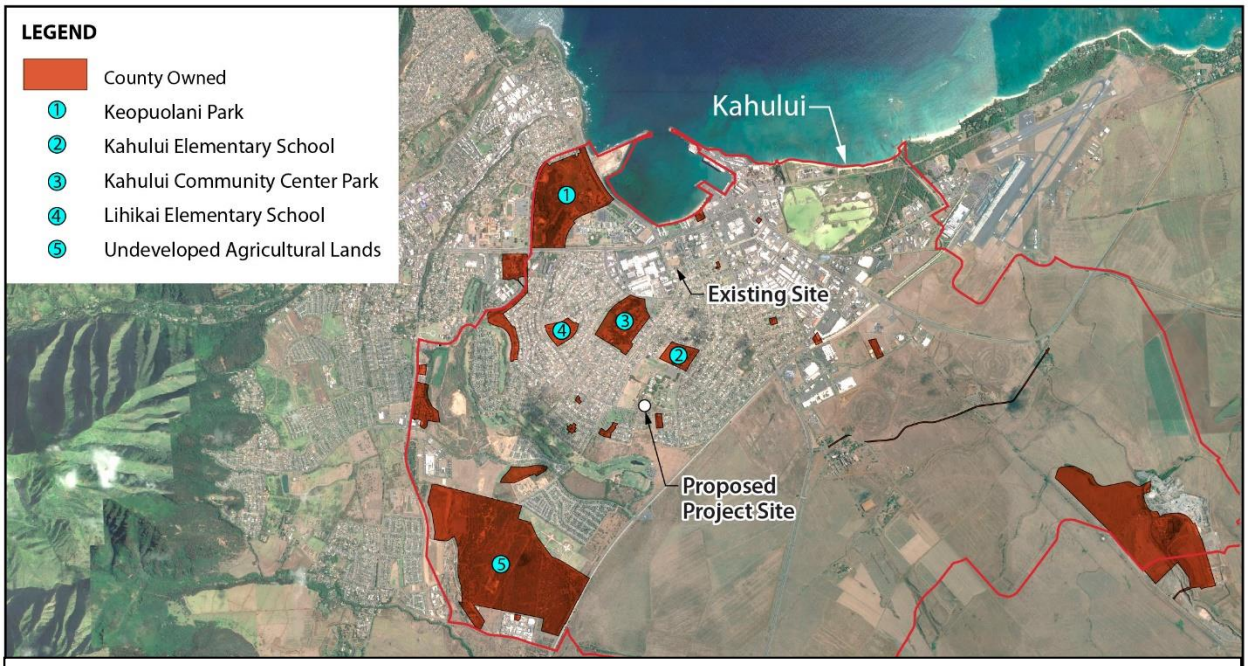


EXHIBIT 2-2: County owned lands in Kahului.

Table 2.2: Feasibility Evaluation of County Lands in Kahului					
No.	**Site**	**2-Acres of Undeveloped Land**	**County Zoning**	**Land Use**	**Discussion**
1	Keōpūolani Regional Park	Yes	Park (PK)	Park	Although the site may be compatible with the project, the County may not support the new facilities using available space. The State would also have to go through a process to obtain a lease from the County to use a portion of the parcel.
2	Kahului Elementary	No	Residential (R-2)	Elementary School, Park	The parcel does not have 2-acres of undeveloped space for the project.
3	Kahului Community Center Park	Yes	Residential (R-2), Public/ Quasi-Public (P-1), Apartment (A-2)	Park, Community Center, Multi-Family Apartments	There is enough space in the residential zoned area of the parcel for the project, particularly in areas used as soccer fields. Redeveloping these community park spaces would likely not be supported by the County losing important fields. The State would also have to go through a process to obtain a lease from the County to use a portion of the parcel.
4	Lihikai Elementary	Yes	Residential (R-2)	Elementary School, Park	Redeveloping these park spaces now used by the school and the surrounding community would likely not be supported by the County losing important open space. The State would also have to go through a process to obtain a lease from the County to use a portion of the parcel.
5	Undeveloped agriculture lands	Yes	Agriculture (AG)	Undeveloped	Although the site has many acres of undeveloped land, the site's zoning is not compatible with the project and the distance is far from the existing site.

Due to the reasons discussed, the most feasible and practical available location for the project would be the proposed State-owned site adjacent to MHS. This site would minimize the impact of redeveloping other State or County lands being used and would eliminate the need for obtaining a lease or other special use permits for the project. The project site is centrally located, addresses the uncertainty of having to relocate operations temporarily for several years, and satisfies the purpose and need of the project. Following the MCSA program's return to its original property, the DOE would simultaneously address MHS's capacity needs by transferring the building previously utilized by MCSA. Because of these reasons, this alternative of relocating the project to other government lands was dismissed.

3.0 AFFECTED ENVIRONMENT, LIKELY IMPACTS, AND MINIMIZATION MEASURES

This chapter provides a description of the project's affected environment, and includes information utilizing suitable regional, location, and site maps. This chapter identifies and analyzes the likely environmental impacts of the proposed action, and proposes minimization measures to address impacts, as applicable.

The effects on the environment from the demolition of the existing facility at 179 West Kaʻahumanu Avenue currently used by both the MCSA Maui Campus and the DOE Maui District as their lawnmower maintenance facility were previously addressed under the May 2022 Final EA and FONSI issued for the Kahului Civic Center Mixed-Use Complex by the Hawaiʻi Housing Finance and Development Corporation (G70, 2022). That Final EA addressed the environmental effects of the redevelopment of that site which included the demolition of the existing facility currently used by MCSA and DOE. The removal and disposal of hazardous materials associated with this facility was also addressed in that document and identified measures to minimize effects during demolition activity. A historic architectural review of the building and a proposed "effect with proposed mitigation commitments" determination was also included. Other relevant environmental effects associated with this facility's demolition were covered under that Final EA. Therefore, this environmental document focuses on the project effects associated with development of the new MCSA and DOE facilities at the new Maui High School site.

3.1 GEOLOGY, TOPOGRAPHY, AND SOILS

3.1.1 GEOLOGY

The Island of Maui was formed by two volcanoes consisting of Haleakalā Volcano (or East Maui) and the West Maui Volcano. The flat isthmus connecting the two volcanoes was created by lavas from East Maui banking against the West Maui mountains which created what's now referred to as Central Maui (Stearns and McDonald, 1942). According to the U.S. Geological Survey (USGS), Geologic Map of the State of Hawaiʻi – Island of Maui (Sheet 4), most of the flatter Central Maui area including the Kahului community is geologically made up of older sand dune deposits formed during the Holocene and Pleistocene geological periods identified as Qdo surficial deposits (see Exhibit 3-1). Qdo surficial deposits are only found within Central Maui (USGS, 2021). These large sand deposits in Central Maui were built up over thousands of years when the central valley was covered by the ocean and through the conveyance of winds.

No large sand dunes or significant geological formations are present within the project site. The site and surrounding MHS property appear to have been altered to allow for the school's development and adjacent ball fields. The project site appears to be a remnant area associated with the larger 73.6-acre school property based upon historic aerial photos of the region. Surrounding residential developments along with West Papa Avenue have also altered the original geological formation of this area.

EXHIBIT 3-1: Geology in the project area

Project Effects

The project would not have a significant long-term or short-term impact on the existing geography associated with the project site or surrounding MHS property. The site has no unique or large geological features and is generally flat. Construction of the new facilities, parking, and driveway improvements would involve some site grading, but would not substantially change the existing geography. No major cut or fill activities would also be required that would significantly alter the underlying geography. Some material may need to be imported to the site to prepare foundations for the buildings subject to geotechnical design recommendations. However, this would have minimal effect on the older large sand deposits of the site and surrounding areas. Other surrounding developments similarly likely imported material for foundations, roadways, etc.

3.1.2 TOPOGRAPHY

The topography associated with the project site and immediate area is fairly level and varies from about 74 feet above mean sea level (AMSL) along West Papa Avenue fronting the site decreasing to about 68 feet AMSL at the end of the proposed facilities. Exhibit 3-2 shows the existing topographic elevations associated with this area. The project site varies in depth from this road from between approximately 240 to 380 feet with the depth at the driveway entrance being about 360 feet. The site thus has a gentle slope of about 1.0 to 2.0 percent. There appears to be a slight drainage area flowing in the makai (northbound) direction through the site and between the two buildings proposed.

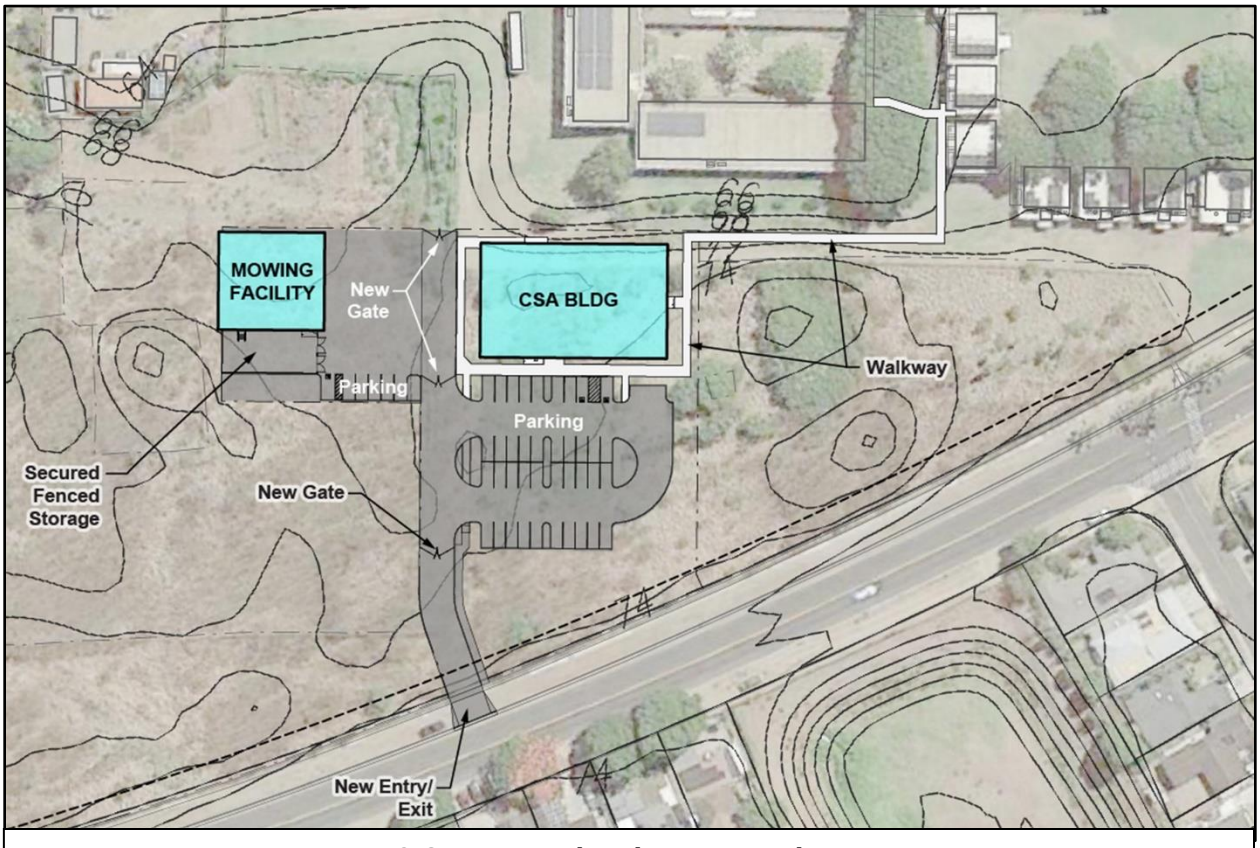


EXHIBIT 3-2: Topographic elevations in the project area

Project Effects

Proposed improvements would have minimal short- or long-term impact on the existing topography of this site. This project site is relatively level with a gentle slope from the roadway inwards towards the rear of the site where buildings would be located. Some minor grading activities would be required to level out areas used for building foundations, parking and access improvements, and to address drainage requirements. However, these improvements would not involve a significant cut or fill of areas and thus have minimal change to the existing topography of the site and surrounding area. Design plans would be prepared which would be reviewed by agencies for compliance with applicable regulations, agency requirements, or obtaining ministerial permits (e.g., grading permit) to avoid significant impacts from occurring.

3.1.3 SOILS

There are two prominent soil types that make up Central Maui: 1) Jaucus sand and 2) Puuone sand. As shown in Figure 3.1, the project site is located within the Puuone soil type (PZUE). This soil type is characterized as having between a 7% to 30% slope, high drainage ability (Ksat: Moderately high to high – 0.6 to 2.00 in/hr) and having a low tendency to flood or pond (USDA, 2019). Puuone soil is a type of calcareous sand that was created many years ago from coral, seashells, or the skeletal remains of marine organisms.

Figure 3.1: Soils

The project site is not located within any Agricultural Lands of Importance to the State of Hawai'i (ALISH) as shown in Figure 3.2. ALISH classify lands as either "Prime", "Unique", and "Other" to determine the suitability of the land for agricultural uses. Soil type and quality, slope, and drainage ability are some soil properties that determine each classification. According to the ALISH Map, the soil at the project site is not considered prime farmland material (USDA, 2019). The project site is also designated as State Urban Land and is County zoned R-2, Residential which are not intended for agricultural use.

Project Effects

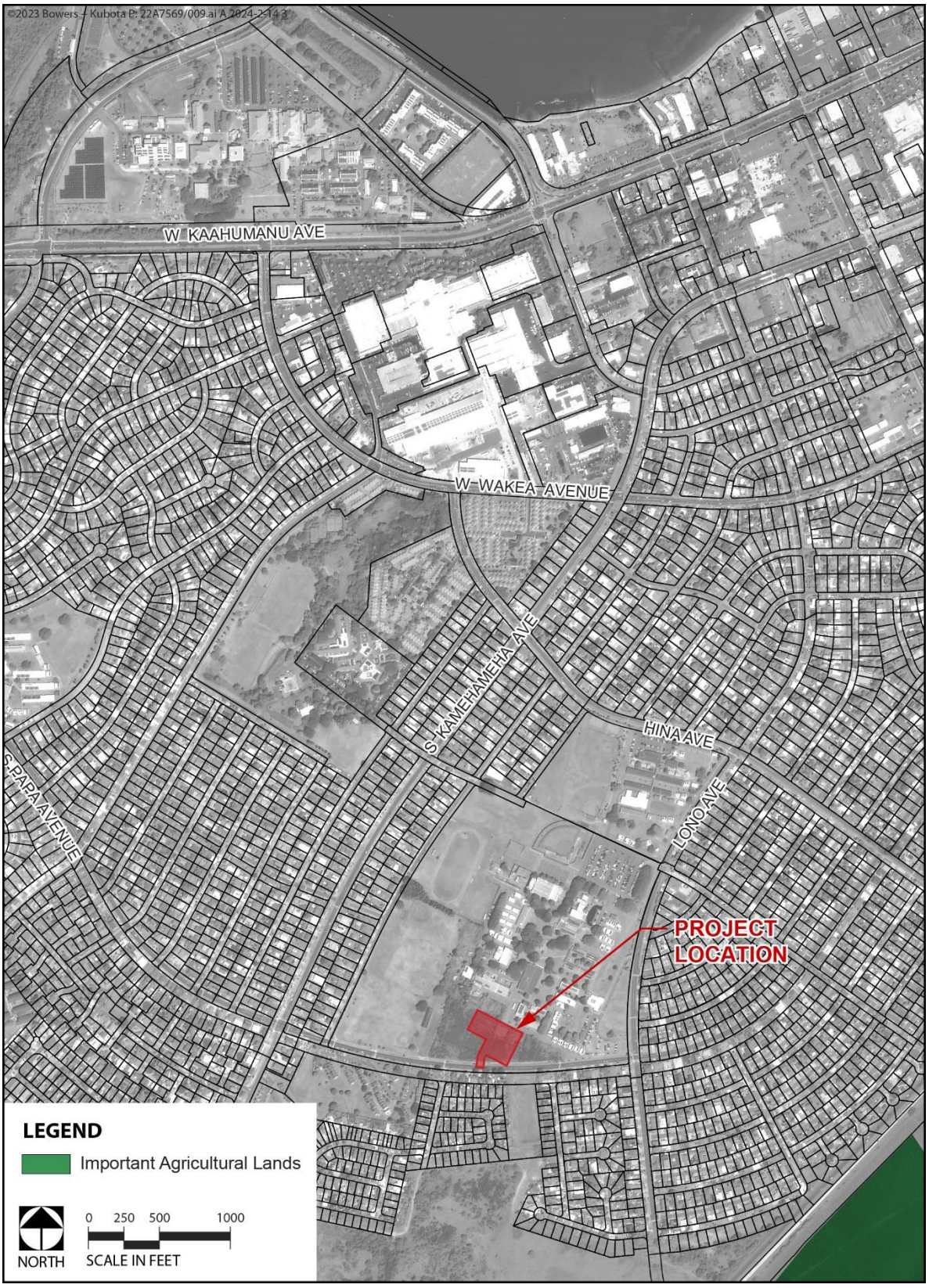
The project would have minimal short- or long-term impact on the existing soils associated with this site. No major cut or fill activities would also be required that would significantly alter soil conditions by importing or exporting significant quantities. Some material may need to be imported to the site to prepare foundations for the buildings subject to geotechnical design recommendations. However, this would have minimal effect on existing soil conditions. Other surrounding developments similarly likely imported material to use for building foundations, roadways, etc. During the operation of the proposed MCSA and Mowers Facility, such activities would have minimal long-term impact to soil conditions.

Effects on soils from construction activities would be limited to temporary ground disturbance activities such as minor grading or site leveling of the already fairly level site. Construction work associated with project improvements would inevitably involve some temporary land-disturbing activities that could cause minor short-term effects and nuisances. Such effects may be associated with some soil erosion during periods of heavy rainfall or high winds.

Various minimization measures using standard construction best management practices (BMPs) will be incorporated into the project's design plans to minimize potential discharge of pollutants from stormwater before and after construction. Such measures would be instituted following site-specific assessments during the project's design phase, and could incorporate structural and non-structural BMPs, as deemed appropriate. BMPs would be installed before construction and maintained throughout the construction period. Some BMP measures may include, but not be limited to:

- Installation of a perimeter construction fence.
- Installation of silt fence or filter socks adjacent to and down slope from disturbed areas.
- Installation of dust screens around disturbed areas.
- Utilization of methods to ensure mud, dirt, or debris would be kept onsite and minimized on roadways.
- Use of temporary sprinklers in non-active construction areas and stationing water trucks nearby during construction to provide sprinkling in active areas.
- Installing stabilized construction entrances, tire wash areas, and concrete washout areas.
- Cleaning affected pavements and roads after construction activities.
- Cleaning construction-related equipment of pollutants before and after construction.

Figure 3.2: Agricultural Lands of Importance



- Collecting and placing building debris, as it is created, into roll-off bins or trucks for hauling and removal from the site.

The Applicant would obtain all required permits and comply with permit conditions to minimize construction impacts on soils. Permits would include, but not be limited to, the following:

- *National Pollutant Discharge Elimination System (NPDES) General Permit* for construction stormwater discharge. A NPDES General Permit would be required as construction activities would disturb at least one-acre of land.
- *Grading Permit* would be obtained from the County of Maui Department of Public Works for the excavation or fill of soil, gravel, or rock and grubbing of vegetation.

3.2 CLIMATE AND CLIMATE CHANGE

Hawai'i's tropical location results in uniform weather conditions throughout the year. Climatic conditions on Maui are characterized by mild and consistent year-round temperatures, moderate humidity, and steady northeast trade winds. Variations in Maui's weather is attributed to regional topography and climatic conditions. For example, areas of higher elevation on Maui such as at Haleakalā and West Maui mountains receive the highest rainfall of about 404 inches of rainfall a year, compared to Central Maui, that has a relatively low and flat topography, with about 16 inches of rain a year (UHM, 2014).

Kahului, like the majority of Central Maui, has a moderately arid to very dry climate compared to areas of the island with higher elevations. The mean annual air temperature in Kahului is 74 degrees Fahrenheit with mean annual precipitation averaging 17 inches (UHM, 2014).

3.2.1 CLIMATE CHANGE

Climate change is a long-term alteration in an area's temperature and typical weather patterns such as local temperatures, average rainfall, humidity, and wind patterns. Scientific data has shown that over the past century, the earth's climate has been increasingly warming due to rising levels of greenhouse gas emissions (GHG) generated from human activities. These changes in climate are already impacting Hawai'i from rising sea levels, changing rainfall and wind patterns, and more frequent extreme weather events. These changes pose a threat to Hawai'i's food security, water supply, economy, cultural heritage, and overall habitability (SOH, 2023).

For instance, over the past 30 years, rainfall has declined significantly, and the islands have been experiencing more extreme and longer droughts. In addition, the number of consecutive days of extreme heavy rainfall has been increasing resulting in increased runoff, erosion, and flooding events (SOH, 2023). Simultaneously, temperatures in Hawai'i have been rising and average temperatures in Hawai'i could increase by as much as 2.4 to 7.2 degrees F by the end of the century threatening local energy and water infrastructures, risk of wildfires, and native ecosystems (SOH, 2023).

In 2017, the State of Hawai'i enacted Act 32 which reaffirmed the State's commitment to the goals of the 2016 Paris Agreement and established the Climate Change Commission, which is a multi-jurisdictional group of various departments and counties to develop strategies and recommendations for climate change adaptation and mitigation. Two major priorities of the Commission are the reduction of GHG emissions from ground transportation and adaptation to sea level rise. In addition, in 2018, the State established ambitious goals to become carbon neutral by 2045.

Project Effects from Climate Change

During construction, diesel and gasoline powered construction vehicles or equipment would contribute to short-term minor GHG emissions that contribute to climate change. However, the temporary duration and levels of emissions generated in relation to other GHG emissions occurring statewide would just have negligible or de minimus affect over a short period.

In the long-term, the operation of the facilities, the use of trucks, gasoline-powered mowers, and their transport between job sites and this new facility would contribute to minor GHG emissions. However, the Proposed Action does not include an increase in the usage of mowers or trucks with trailers since it is just providing a new relocation facility for their storage. Thus, there should be essentially no net increase in GHG emissions from operations or any change would be negligible.

Similarly, vehicles traveling to and from the newly relocated MCSA facility should essentially result in no change to current GHG emissions since this involves a relocation of their existing operations. Both facilities for the MCSA and mower storage building are still within the center of Kahului and not significantly further from the existing location (approximately 5-minute drive).

After several years, the MCSA will vacate the building and relocate back to its former property in the new Civic Center, and operation of the building on the project site would be transferred to Maui High School for educational or programmatic uses. The anticipated use of the facility by Maui High School is unlikely to result in increased traffic for the school, as the building will be utilized by students or staff who would otherwise be situated elsewhere on campus. Therefore, the project would not lead to a significant increase in the contribution of GHG emissions from existing GHG emissions occurring, and thus is not anticipated to have any significant long-term impact on climate change.

During the construction period, contractors would be required to implement emission control methods on their construction equipment as part of best management practices that help minimize GHG emissions.

Recommendations established by the Climate Change Commission to combat ground transportation emissions included carbon pricing, electrification of ground transportation including for State vehicles, and providing infrastructure to encourage various multi-modal transportation options. The project site is already along major bus routes and bike paths. Additionally, the State has already begun the electrification of some State vehicles. In time, it is anticipated that most State and County vehicles including those used by the DOE would be converted as well to reach the State's zero emissions goals.

3.2.2 SEA LEVEL RISE

The 2022 Update of the Hawai'i Sea Level Rise Vulnerability and Adaptation Report is a report by the State of Hawai'i that aimed to assess Hawai'i's exposure to climate change induced sea level rise and provide updated recommendations to reduce the State's vulnerabilities to sea level rise. The current best available science has pointed to 3 to 4 feet of sea level rise by 2100 as a mid-range scenario for Hawai'i (HSCC, 2022). An increase in sea level rise to Hawai'i means damage or loss of critical infrastructures, properties, natural resources, ecosystems, and land use in many low-lying coastal areas.

The Sea Level Rise Exposure Area (SLR-XA), a combined projected footprint that maps three chronic flooding hazards with a 3.2-feet sea level rise scenario: passive flooding, annual high-wave flooding, and coastal erosion, is a tool used extensively by state and county agencies for adaptation planning purposes (HSCC, 2022). As shown in Figure 3.3, the entire property containing the project site is not anywhere near areas that may be affected by the 3.2-feet SLR-XA. Such exposure areas are predominantly located along the shoreline at Kahului Harbor and would increase water levels at the Kanahā Pond Wildlife Sanctuary.

Project Effects from Sea Level Rise

The project site and new facilities developed should not experience any short- or long-term impact from sea level rise or contribute to issues associated with projected sea level rise. The project site is situated well inland away from the shoreline where most sea level rise effects occur. Therefore, project improvements and operations occurring would not be affected.

Figure 3.3: Sea Level Rise

3.3 HYDROLOGY

3.3.1 SURFACE WATERS

Review of the State CWRM's *Hawai'i Stream Assessment* (HCPSU, 1990) did not identify any perennial streams in the vicinity of the project site. GIS data and aerial imagery of the area also show no perennial or intermittent streams located in the vicinity. The area located mauka (south) of the site is developed with single-family and multi-family residential developments. A County drainage detention basin serving that developed area is located across the project site along West Papa Avenue. The developed area makai of the project site consists of Maui High School and ballfields. Additionally, the project site is located more than one mile inland from the nearest coastal water at Kahului Harbor.

There are no existing wetlands present within the project site or in the immediate vicinity. Review of the U.S. Fish and Wildlife Service (FWS), National Wetlands Inventory Online Wetlands Mapper (the "Mapper") was used to confirm this (FWS, 2023). Areas immediately surrounding these parcels consist of roadways and other industrial uses along with the harbor situated on the makai (north or seaward) side of them. The Kanahā Pond Wildlife Sanctuary is a major wetland that is located along the coastline about 1.54 miles away from the project site.

Project Effects on Surface Waters

Construction of improvements would not involve any work within or across existing streams or major drainageways because there are none associated with the project site. Improvements would primarily consist of site-related work involving minor grading and leveling of areas and improving surfaces with pavement, building construction, etc. Site work would include addressing drainage conditions associated with the project from increased impervious surfaces created. This work should have minimal effect on existing drainage patterns in the area since no major site improvements are necessary. The project should thus have no long-term impact on surface water resources such as streams or wetlands.

3.3.2 GROUNDWATER

Groundwater is one of the most important natural resources in Hawai'i as it is the main source of freshwater statewide. Located beneath the water table within volcanic rock aquifers, groundwater provides about 99% of Hawai'i's domestic water use and about 50% of all freshwater used in the state (USGS, 2016). Much of this groundwater comes from rainfall, fog drip, and irrigation water that isn't lost to runoff or evapotranspiration.

The island of Maui is divided into six aquifer sectors that are distinctive hydrological units established by the State Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM). The project site is located within the Central Aquifer Sector that is further divided into four aquifer systems: Kahului, Pā'ia, Makawao, and Kama'ole. As shown in Figure 3.4, the project site is located within the Kahului Aquifer System.

Figure 3.4: Aquifers

The Kahului Aquifer System encompasses most of Kahului and Central Maui stretching south towards Kīhei. This aquifer system is not classified by DLNR CWRM as a Groundwater Management Area, therefore, water resource owners in this area would not be required to obtain water use permits to withdraw groundwater.

According to the County of Maui, Department of Water Supply (DWS), the Kahului Aquifer System has a groundwater sustainable yield (SY) of 1 million gallons per day (MGD) which is the maximum rate that groundwater can be withdrawn without impairing the water source (DWS, 2016). The project site is served by DWS's Central Maui System which provides 20,116 meters of water service from Kahului towards Wailea-Mākena. The Central Maui System receives 95% of its water from groundwater and 5% from surface waters (DWS, 2011).

To safeguard groundwater sources and Maui's drinking water supply from contamination, DWS has delineated Wellhead Protection Overlay Zones that would cover Wellhead Protection Areas or the surface to subsurface areas surrounding a water well through which contaminants can move toward and reach important water wells (DWS, 2023). The Wellhead Protection Overlay Zones are divided into three zones based on the time it takes a drop of water to travel to the drinking water well. Zone A are areas nearest the well with the most potential to contribute to groundwater contamination. Zone B areas take 2 years or less and in Zone C it takes up to 10 years of travel time for water or contaminants to reach the water supply. As shown in the following Exhibit 3-3, the 'Īao Stream to Waikapu Wellhead Protection Overlay District is the closest to the project site, however, the project is not within the delineated Overlay Zone.

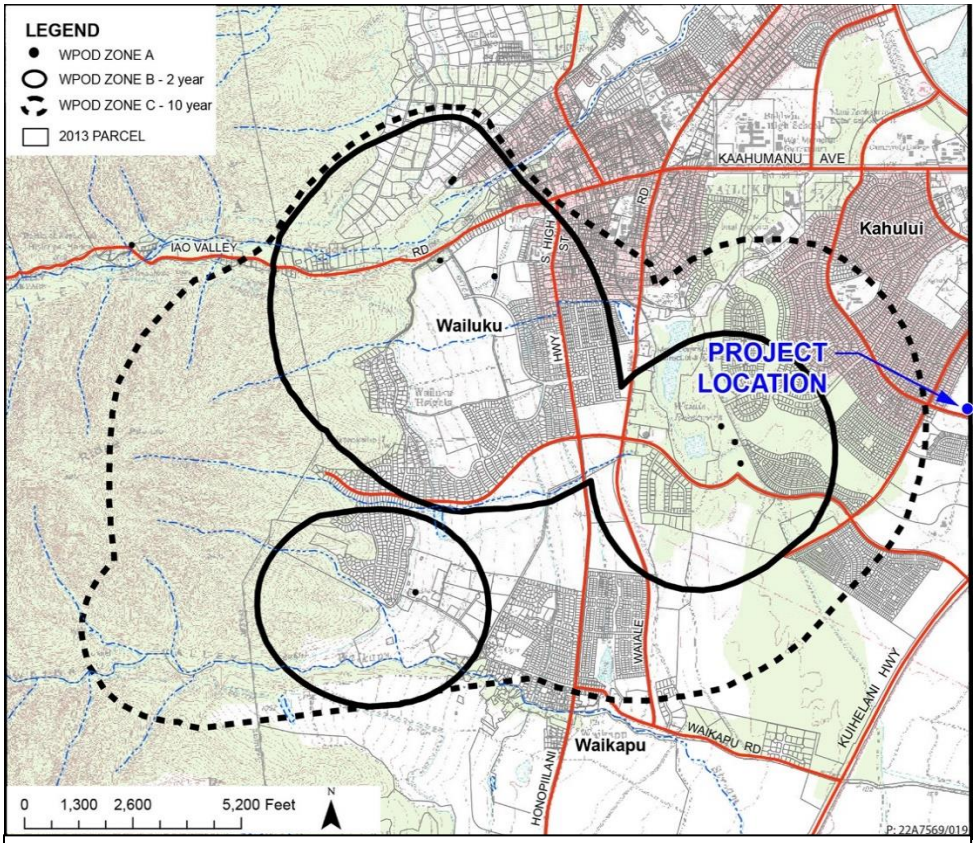


EXHIBIT 3-3: Depiction of the 'Īao Stream to Waikapu Wellhead Protection Overlay District

As described in Section 3.2 (Climate and Climate Change), climate change impacts such as rising sea levels, rising temperatures, and changes in rainfall patterns would pose a threat to Hawai'i's natural resources such as freshwater supply. Currently, the main factors threatening groundwater availability in Hawai'i are saltwater intrusion, the reduction of discharge to streams and the ocean, and lowering of water levels from water usage (USGS, 2016). It is anticipated that an increase in sea levels will increase the threat of saltwater intrusion into Hawai'i's aquifers, and that rising temperatures and changes in rainfall patterns would increase the frequency of extended droughts and water contamination which would all negatively affect Hawai'i's water supply in the future (SOH, 2023).

Project Effects on Groundwater

Short-term construction related activities should not have any effect on the underlying aquifer system. Site grading activities would be minor given the site's already fairly level topography and thus not involve any major cutting into a hillside or topographic features that may affect groundwater infiltration. Water used for construction activities would similarly be minimal and short-term not negatively impacting the underlying aquifer's sustainable yield.

New structures and site improvements constructed would increase the amount of impervious areas within the currently undeveloped site. Actual areas improved would be subject to the design phase in finalizing site and building improvements, parking, and access road for construction. The total increase in impervious areas based upon current project concepts is estimated to generally be in the range of about 1.0 acre. This small increase in impervious area should have minimal impact on the underlying aquifer in terms of groundwater recharge.

Site design for improvements would incorporate measures to address increased runoff generated likely using a detention basin that would support groundwater recharge and minimize the project's effect. As a result, the net increase in stormwater runoff discharged from this site to surrounding areas of MHS should generally be comparable to existing conditions. This change is not expected to have a significant impact on the underlying aquifer systems and groundwater and is outside of the County's wellhead protection zones.

Increased potable water demand generated from the project should have minimal impact on groundwater resources because the project involves relocating these existing MCSA and mower operations from their current location to this new project site. Therefore, the net change in water demand resulting from these operations at the new site should generally remain the same as currently occurring. Restrooms included within the new buildings are expected to connect to the County's existing sewer system for treatment and disposal and would therefore not discharge treated sewage into the site's underlying aquifer system.

The expected future use of the MCSA facility by Maui High School when they relocate back to the developed civic center is unlikely to lead to a significant increase in water consumption beyond what would already occur. The building will now be occupied by students or staff resulting in a net decrease in water consumption with the MCSA relocation. Thus, the only long-term net increase in water consumption would be due to the mower facility at this project site having minimal effect on groundwater.

3.4 AIR QUALITY

The Clean Air Act of the 1970s with subsequent Amendments in the 1990s, is the U.S. federal air quality law intended to reduce and control air pollution nationwide. The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA) and in coordination with state and local governments established both National and State Ambient Air Quality Standards (AAQS) to protect both public health and welfare from the harmful effects of "criteria" pollutants (DOH, 2015). These criteria pollutants include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10}), particulate matter ($PM_{2.5}$), and ozone, sulfur dioxide (SO_2). The State also set a standard for hydrogen sulfide (H_2S). The State of Hawai'i, Department of Health (DOH), Clean Air Branch is responsible for air pollution control in Hawai'i through permitting, monitoring air quality, and enforcing federal and state standards.

According to the U.S. Air Quality Index (AQI), the EPA's index for reporting air quality provided by the DOH's Environmental Health Division, air quality in the Kahului area is rated as "good" meaning air quality is satisfactory and air pollution poses little or no risk to public health (EPA, 2023). The project site is surrounded in the immediate vicinity mainly by residential uses, Maui High School facilities, ball fields, and a golf course. These existing land uses are not expected to be notable sources generating significant emissions affecting air quality.

Further mauka (southeast) away from the site are active agricultural lands. Vehicles traveling along roadways in the vicinity are also a source of emissions in the area. Therefore, the largest activities in the project vicinity generating pertinent emissions of pollutants are most likely associated with agricultural operations and motor vehicles using the roadway network near the project area. Emissions from these sources generally consist primarily of particulate matter (agriculture activities), carbon monoxide, and nitrogen dioxide.

In addition to the AAQS, the DOH regulates fugitive dust emissions. HAR Section 11-60.1-33, Fugitive Dust, states that no person shall cause or permit visible fugitive dust to become airborne without taking reasonable precautions, and no person shall cause or permit the discharge of visible fugitive dust beyond the property lot line on which the fugitive dust originates (DOH, 2019). Fugitive dust particles from activities such as soil moving, earthwork, and heavy construction have the potential to be lifted into the air and pollute air and surface waters posing a public health risk. This rule applies to construction projects and would therefore be applicable to the Proposed Action.

Project Effects

With the project, the main effects on air quality would be from short-term construction activities as compared to the long-term activities occurring with the relocated MCSA Maui Campus and lawnmower operations. The only source of potential long-term effects on regional air quality would be CO from localized traffic congestion at the project driveway.

Short-Term Construction Related Effects

Short-term construction-related impacts to air quality are anticipated with the implementation of the Proposed Action. There are two potential types of air pollution emissions that could result in direct short-term air quality impacts during the project's construction period:

(1) Fugitive dust from earth-moving activities, crushing and screening activities, unregulated stockpiling of soil material, and construction vehicle movements.

(2) Diesel and/or gasoline-powered emissions from construction vehicles and equipment.

Indirectly, there could also be short-term air quality impacts from the addition of construction vehicular traffic, from slow-moving construction equipment traveling to and from the project site, and from a temporary increase in local traffic caused by commuting construction workers.

During the operation of the facilities, the use of trucks, gasoline-powered mowers, and the travel of motor vehicles to and from the facilities will continue to contribute to air pollution emissions. The Proposed Action does not include an increase in the usage of mowers or trucks with trailers. However, because levels of criteria pollutants in Kahului are consistently below National and State AAQS and because trade winds rapidly carry pollutants offshore, slight increases in the levels of criteria pollutants on site are not expected to be significant, and not anticipated to exceed AAQS.

BMPs would be described in construction plans and specifications to minimize the discharge of air pollutants before and after construction. BMPs for fugitive dust and engine emissions would be installed before construction and maintained throughout the construction period. Some BMPs which are consistent with measures recommended by DOH in the Fugitive Dust Fact Sheet (DOH, 2019), may include, but not be limited to:

- Designing, developing, and implementing a dust control plan.
- Applying water, dust suppressants, or suitable compounds on roads, material stockpiles, and on construction areas.
- Establish and monitor speed limits for onsite vehicles.
- Cover all moving, open-bodied trucks transporting soil or dusty material.
- Install dust screens or wind barriers around the construction site.
- Stabilize and cover stockpile materials.
- Limiting areas to be disturbed at any given time.
- Clean nearby pavements and paved roads affected by construction.
- Providing a buffer zone between the construction site and residential areas.
- Moving heavy construction equipment during periods of lower traffic volume.
- Adjusting schedules of commuting construction workers to avoid peak hours in the project vicinity.
- Implementing emission control methods on construction equipment.

Long-Term Effects

Long-term impacts on air quality from vehicle emissions could potentially occur at locations that attract large volumes of motor vehicle traffic. The project's Traffic Impact Report (as mentioned in Section 3.12) indicates that the existing traffic level of service along West Papa Avenue operates reasonably satisfactory, and in the future condition with the project, it would continue to operate satisfactory. The anticipated relocation of MCSA allowing the future use of that building by Maui High School is unlikely to also result in increased traffic for the school. The building will be utilized by students or staff who would otherwise be situated elsewhere on campus. Considering the small project-related traffic volumes that are expected, traffic from the proposed project should have no measurable long-term impacts on air pollution levels in the project area. These existing operations would be relocated to this new site and are not expected to result in excessive congestion that would lead to vehicular CO emissions exceeding the State one-hour AAQS (9 ppm). CO emissions should be well within the National AAQS (35 ppm).

Federal air pollution control regulations also require new motor vehicles to be equipped with emission control devices that reduce emissions significantly. Amendments to the Clean Air Act require further emission reductions that have been phased in since 1994. The added restrictions on emissions from new motor vehicles would lower average emissions each year as a greater number of older vehicles leave the state's roadways. This would further reduce the potential for incidences of CO concentrations exceeding state standards.

3.5 NOISE

The Noise Control Act of 1972 is the U.S. federal noise law intended to protect residents from noise that would jeopardize public health and welfare. Under the Noise Control Act, the EPA in coordination with state and local governments, required noise control standards which is now law under the Hawai'i Environmental Quality Act and is codified under HRS Chapter 342F (DOH, 2017). Administered by the State Department of Health Indoor and Radiological Health Branch, HRS Chapter 342F regulated noise pollution and developed community noise controls.

Noise is affected by several factors including the frequency of the sound, period of noise exposure, and changes or fluctuations in the noise levels during exposure. The DOH regulates noise exposure in the following rules:

- HRS, Section 342F – Noise Pollution
- HAR, Section 11-46 – Community Noise Control
- HAR, Section 12-200.1 – Occupational Noise Exposure

HAR, Section 11-46, Community Noise Control, defined maximum permissible sound levels for certain zoning districts and provided minimization and mitigation controls for stationary noises, and equipment related to agriculture, construction, and industrial activities in occur in the zones (HAR, 2015). Accordingly, as shown in Table 3.1, noise emitted from the Proposed Action would be regulated under the Class A Zoning District as the project site is located in a County zoned R-2 residential area.

Table 3.1 MAXIMUM PERMISSIBLE SOUND LEVELS IN DBA[1]

ZONING DISTRICTS	DAYTIME (7 A.M. TO 10 P.M.)	NIGHTTIME (10 P.M. TO 7A.M.)
CLASS A (LANDS ZONED RESIDENTIAL, CONSERVATION, PRESERVATION, PUBLIC SPACE, OPEN SPACE, OR SIMILAR TYPE)	55 dBA	45 dBA
CLASS B (LANDS ZONED FOR MULTI-FAMILY DWELLINGS, APARTMENT, BUSINESS, COMMERCIAL, HOTEL, RESORT, OR SIMILAR TYPE)	60 dBA	50 dBA
CLASS C (LANDS ZONED AGRICULTURE, COUNTRY, INDUSTRIAL, OR SIMILAR TYPE)	70 dBA	70 dBA

Existing noise in and surrounding the project area is consistent with that of a residential environment. These existing noises include typical noise generated from residential homes, high school activities, park activities, motor vehicles traveling along West Papa Avenue and adjacent roads.

Project Effects

Noise generated from the project would be primarily associated with short-term construction activities versus the long-term activities occurring at the site. Construction activities would be short-term and would mostly be limited to the project site. These short-term effects would not have a significant impact on the surrounding environment and typical BMPs would help minimize effects. Noise generated off-site would include construction vehicles traveling to or from the construction site typically when starting or ending activities for the day. Construction activities on-site would be generated from construction equipment that would likely include, but not be limited to excavators, bulldozers, water trucks, chain saws, and trucks. Exhibit 3-4 shows typical noise levels from commonly used heavy equipment 50 feet away from the source.

Exhibit 3-4.
Construction Equipment Noise Levels

Equipment	Typical Noise Level 50 Feet from Source
Backhoe	80 dBA
Dozer	85 dBA
Generator	81 dBA
Grader	85 dBA
Loader	85 dBA
Paver	89 dBA
Scraper	89 dBA
Truck	88 dBA

[1] Hawaii Administrative Rules, Section 11-46, Community Noise Control. 2015.

Earthmoving equipment such as bulldozers would probably be the loudest equipment used during construction. However, the site does not require major cutting or filling activities that should reduce the use of such equipment. These construction-related noises may be audible at Maui High School buildings located adjacent to the site if occurring during school hours. Building L of the high school would be the closest to the project site and is situated about 85 feet away. Typical noise levels decrease 6 dBA when doubling the distance away. Therefore, noise levels at this building should be lower than that shown on the exhibit. In comparison, average noise from a washing machine is about 70 dBA and gas-powered lawnmowers or leaf blowers are about 90 dBA.

Construction noise may also be audible for residences located across the street. Construction of the MCSA building would be about 170 feet away from the nearest residence. Therefore, noise levels at residences would be lower (>6 dBA) than the noise levels indicated in the exhibit for major construction equipment. Being within a home structure would further shield and reduce construction noise levels. The actual noise levels produced during construction activities would be a function of the methods employed during each stage of the process by the contractor. Although the specific equipment used would be determined by the contractor, the equipment identified represents a reasonable approximation of what likely noise levels would be generated.

Therefore, construction activities would inevitably result in short-term, but minor to moderate noise impacts. The extent of these impacts would vary depending on the stage of construction, wind direction, specific equipment being used, distance to the receptor, and the duration of each activity. Therefore, the ability to control construction noise levels relates primarily to the duration and time of construction activity in any one day.

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels, a permit must be obtained from the State DOH to allow the operation of vehicles, construction equipment, power tools, etc., which emit such noise levels. This ministerial permit is typical for construction activities. Prior to issuing the noise permit, DOH may require the contractor to incorporate noise mitigation into the construction plan or require the contractor to conduct noise monitoring or community meetings to discuss construction noise.

The DOH noise permit does not limit the noise level generated at the construction site, but rather the times at which noisy construction can take place. Specific permit restrictions for construction activities are:

1. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels ... before 7:00 AM and after 6:00 PM of the same day, Monday through Friday.
2. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 AM and after 6:00 PM on Saturday.
3. No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays.

The project's contractor would ensure that the operation of construction equipment and activities would occur during acceptable times to minimize the short-term on high school activities and classrooms. The contractor would coordinate with DOH and DOE to ensure compliance and provide the high school with sufficient advanced notice of construction activities.

No significant increase in noise levels over existing levels is anticipated from the operation of the proposed facilities. MCSA Maui Campus operations would occur within the new air-conditioned building and are not expected to generate significant noise sources outside of the building that may negatively impact high school activities and classrooms. The new lawnmower facility would be used to store and repair equipment. Thus, repair activities would occur periodically and may result in some noise generated. However, such intermittent noise generated is not expected to be significant impacting high school activities and classrooms. This enclosed building would be located over 175 feet away from the schools nearest main classroom building.

Future use of the MCSA building by Maui High School is also not expected to generate significant noise sources outside of the building from that would already occur on other parts of the campus during school hours.

In addition, according to HAR Section 11-46-5, any school activity which is approved by school authorities is exempt from State noise controls if activities are from the hours of 7:00 a.m. to 10 p.m. (HAR, 2015). Operation of the facilities would occur during these hours and is not expected to exceed the maximum permissible sound levels for the area.

3.6 FLORA AND FAUNA

A team of biologists from SWCA Environmental Consultants conducted a terrestrial flora and fauna biological survey covering approximately 6.5 acres of the undeveloped area associated with the Maui High School property on July 24, 2023. This includes the undeveloped area makai of West Papa Avenue up to the high school's buildings and westbound up to the existing ballfields. The approximately 2.2-acre project site is located within the 6.5-acre undeveloped area surveyed. During the survey, all vascular plant species, vegetation, and wildlife species were recorded. No special-status species were detected in the survey area. A copy of the Flora and Fauna Survey Report is included in Appendix C.

Review of the State GIS data of established critical habitat areas determined that the project site is not within or adjacent to any critical habitat or ecosystem or reserves. There are no critical habitat areas within the entire Wailuku to Kahului communities, and the nearest critical habitat areas are located over 3 miles away within the West Maui Mountains.

In addition, the project site is in an area with little or no threatened and endangered plant species according to the State Department of Land and Natural Resources, Division of Forestry and Wildlife map shown in Figure 3.5.

Figure 3.5: Threatened and Endangered Plants

3.6.1 FLORA

Most of the interior of the survey area consist of two vegetation types, koa haole scrubland and Napier grassland.

The survey area was almost entirely (>80%) covered by the koa haole scrubland vegetation type. This vegetation type is dominated by koa haole (*Leucaena leucocephala*) overstory (see Exhibit 3-5). Other woody overstory species such as hau, ʻopiuma (*Pithecellobium dulce*), tree tobacco (*Nicotiana glauca*), and fiddlewood (*Citherexylum spinosum*) can occasionally be seen in the survey area. The understory is largely dominated by Guinea grass (*Urochloa maxima*) and buffelgrass (*Cenchrus ciliaris*), with ruderal weed species such as hairy spurge (*Euphorbia hirta*), coatbuttons (*Tridax procumbens*) and the indigenous species ʻuhaloa distributed throughout. *Macroptilium atropurpureum*, a vining species in the pea family, was seen twining through the midstory in some areas. ʻUhaloa and hau are both very common native species in lowland areas of the Hawaiian Islands.

Exhibit 3-5. Photo of typical koa haole scrubland vegetation on site (SWCA, 2023)

A small portion of the northern edge of the survey area was a cultivated edible plant garden, likely associated with the high school, that contained a wide variety of edible fruit and vegetable species. These edible plant species includes banana (*Musa hybrid*), tapioca (*Manihot esculenta*), papaya (*Carica papaya*), long beans (*Vigna unguiculata* subsp. *sesquipedalis*), kalo (*Colocasia esculenta*), okra (*Abelmoschus esculentus*), eggplant (*Solanum melongena*), tomato (*Solanum lycopersicum*), dragonfruit (*Selenicereus undatus*), wingbeans (*Psophocarpus tetragonolobus*), pumpkin (*Cucurbita pepo*), chili peppers (*Capsicum annuum*), and lime trees (*Citrus × aurantiifolia*).

In total, forty-four (44) plant species were recorded in the survey area, two of which, hau (*Hibiscus tiliaceus*) and ʻuhaloa (*Waltheria indica*), are native to Hawaiʻi. No special-status plant species were observed in the survey area. A list of all plant species observed is included in the Flora and Fauna Survey Report in the Appendices.

Project Effects on Flora

The Proposed Action would lead to the clearing of vegetation within the 2.2-acre ground disturbance area as part of site development activities to allow construction of buildings, access road and parking areas. The Proposed Action should not have a significant adverse impact on State or federally listed, threatened or endangered, or rare native Hawaiian plant species as none were detected within the survey area. Most of the flora found were nonnative species. The native hau and ʻuhaloa are common plant species throughout Hawaiʻi, and the elimination of these plants within the project site would not affect the distribution or survival of these species. Landscaping consisting of grass and other appropriate plants would be incorporated into the site development plans that would also reduce potential erosion.

Construction-related activities could contribute to the minor spread of invasive species, such as koa haole, present on the site to new areas or habitats through the movement of vehicles and materials within and off the site. To minimize the effects of the unintentional spread of invasive species, the following BMPs would be utilized:

- Washing and inspecting of construction equipment, vehicles, and materials imported from outside of the island of Maui for excessive debris, plant materials, and invasive or harmful nonnative species at a designated location before entering or exiting the project site.
- When possible, purchase raw materials (e.g., gravel, rock, soil) from local suppliers on Maui to avoid introducing nonnative species to the island.
- The use of appropriate native Hawaiian plants or non-invasive plants to the maximum extent possible for landscaped areas.

3.6.2 FAUNA

Avifauna, mammals, insects, and other invertebrates or evidence of the presence of these species were observed in the survey area during the biological survey. No reptiles or amphibians were found.

Three (3) nonnative bird species were observed consisting of the spotted dove (*Spilopelia chinensis*), house finch (*Haemorhous mexicanus*), and the zebra dove (*Geopelia striata*). All three bird species are common in disturbed low-elevation areas throughout Maui.

Endangered Hawaiian waterbirds were not detected during the field survey, and the project footprint does not consist of potential foraging habitat such as lowland streams with herbaceous riparian vegetation or tidal mudflats that would support waterbird foraging. Seabirds were not observed in the survey area but may potentially fly over the survey area to and from higher elevation nesting areas during the seabird fledging period. No other native or special-status birds were detected in the area.

No mammals were detected on-site during the survey period. However, feral cat (*Felis catus*) scat was found on site indicating the likelihood for feral cats to frequent the area. Although not detected, the house mice (*Mus musculus*) and rats (*Rattus spp.*) are also likely to occur in the survey area. The Hawaiian hoary bat (*Lasiurus cinereus semotus*) on Maui may occur in native, nonnative, agricultural, and developed landscapes, however, none

were detected during the survey period. Potential roosting trees for the Hawaiian hoary bat, a federally and state-listed endangered mammal, exist in the survey area.

Although not detected, the endemic pueo or Hawaiian short-eared owl *(Asio flammeus sandwichensis)* could also potentially nest on the ground or in trees in the project area.

No native insects or invertebrates were observed during the survey. Tree tobacco, which serves as a nonnative host plant for the federally and state-listed endangered Blackburn's sphinx moth (*Manduca blackburni*), was found on-site and examined, but no eggs or larvae of this species were seen. Blackburn sphinx moths are found in topographically diverse landscapes and in areas with low to very high levels of nonnative vegetation. Nonnative invertebrates observed were wandering glider (*Pantala flavescens*) and Surinam cockroach (*Pycnoscelus surinamensis*).

The invasive Coconut Rhinoceros Beetle (CRB) or *Oryctes rhinoceros* is a significant pest in Hawai'i that pose a serious threat to palm trees, especially coconut trees. CRB are usually found in host material or plants such as dead trees, mulch, compost, vegetative trimmings, and decaying stumps. CRB are mostly limited to O'ahu and Kaua'i, however, they have been detected on Maui and Hawai'i Island. The CRB was not detected on the project site, however, the State is actively working to reduce risks for potential CRB infestations for all islands.

Project Effects on Fauna

The Proposed Action would lead to the clearing of vegetation within the 2.2-acre ground disturbance area to prepare the site for construction. However, no native, endangered, threatened, or State or federally listed fauna were detected during the survey, and it is unlikely that these special-status species would reside in the area as there are no critical resources needed for these species within the site.

Short-term disruptions to nonnative bird species that may be present on the site on in the immediate area would occur because of construction-generated noise, site work, construction, etc. However, these nonnative bird species are expected to retreat to other areas with less human activity and may return to frequent the area after construction activities. The elimination of existing koa haole scrubland vegetation serving as potential habitat on the site would not have a significant adverse impact to these nonnative bird species. These birds are common on the island and are highly adaptable to live in other areas of Kahului. On a long-term basis, such bird species could return to the site using grass and other landscaped areas as habitat.

No construction activities are anticipated to occur at night that require utilizing bright lights for operational areas. Outdoor lighting for buildings (e.g. for security) may pose a threat to endangered birds such as the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and threatened Newell's shearwater (*Puffinus newelli*). Adult and newly fledged juvenile birds of both species may be attracted to bright lights while transiting between their nest sites and the ocean. Juvenile birds are particularly vulnerable to light attraction and are sometimes grounded when they become disoriented by lights. Grounded birds may then be vulnerable to mammalian predators or to be struck by vehicles. Measures to avoid or minimize such effects are discussed later.

Although Hawaiian hoary bats were not detected within the project area, the bats may be present on a seasonal basis. The principal potential impact the project may have on bats is from construction activities during the clearing and grubbing phase of construction. The trimming or removal of tall foliage and/or trees within construction areas may temporarily displace individual bats that may use vegetation as a roosting location. As bats use multiple roosts within their home territories, the potential disturbance resulting from vegetation removal is likely to be minimal. Therefore, the clearing of large trees and shrubs during birthing and rearing season (June 1 through September 15) may impact Hawaiian hoary bat. During this period, female bats and their pups may be unable to quickly vacate their roosts as vegetation are cleared. If trees or shrubs suitable for roosting are cleared during birthing and rearing season, there is a risk that juvenile and adult bats could inadvertently be harmed.

Therefore, potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet), between June 1st and September 15th, the pupping season. Deleterious impacts to bats, if present within the area, from construction activities are not expected with the implementation of this minimization measure.

Although no Blackburn sphinx moth eggs or larvae were initially discovered during the biological survey, vegetation removal could pose a direct impact to the endangered moth as the disturbance can dislodge moth eggs and or larvae and can result in the crushing of pupae. The Blackburn sphinx moth population in the short-term would be impacted with the death of individual moths, but the insect's vulnerability is even more closely tied to the availability of host plants within suitable habitat such as that in the project site. Therefore, disturbance of a site containing Blackburn's sphinx moth larval host plants may result in a decline in successful Blackburn's sphinx moth breeding. Minimization measures are proposed to address this.

Proposed Minimization and BMP Measures

To avoid and minimize the impact from light attraction to endangered seabirds such as the Hawaiian petrel and Newell shearwater, the following BMP measures would be incorporated into the design of the project:

- Restricting construction activities to daylight hours as much as practicable during the seabird breeding season (April – November) to avoid the use of nighttime lighting that could attract seabirds.
- Shielding all outdoor lights to prevent upward radiation which has been shown to reduce the potential for seabird attraction.
- Turning off outside lights that are not needed for security and safety from dusk through dawn during the fledgling fallout period (September 15 – December 15).

To minimize impacts to the Hawaiian hoary bat, the following measures would be implemented:

- No trimming or removing of trees taller than 15 feet (4.6 m) in the project area between June 1 and September 15 when flightless juvenile bars may be roosting in the trees.

- Any fences that are erected for the project should have a barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire.

To minimize impacts to the endemic pueo, the following measures would be implemented in the project area:

- Before any potential vegetative alterations occur, especially during ground disturbance activities, field inspections for pueo nests or line transect surveys should be conducted during crepuscular hours.
- If a pueo is discovered, a minimum buffer distance of 100 meters (328 feet) from the nest should be established until pueo chicks are capable of flying.

To minimize the potential for Blackburn sphinx moth pupae being crushed as a result of soil disturbance in the project area, the following measures are recommended to be taken one year prior to groundbreaking to remove larval host plants (particularly tree tobacco) from the site and to stop attracting moths to the area to prevent direct impacts.

- Host plants without eggs or larvae should be cut to minimize the chance that a moth may use the plant and pupate in the surrounding soil. Paint cut stems with herbicide to prevent use by the Blackburn sphinx moth. Leave soil and plant roots undisturbed for one year by creating a 10-meter (33-foot) buffer around host plants to prevent disturbance to pupating larvae in the soil. After one year, root removal and ground disturbance may take place.
- If Blackburn sphinx moth eggs or larvae are present on the plant, wait until the plant is free of eggs or larvae before following the step above for plant removal or follow protocols in to relocate the plant.
- Once the tree tobacco host plant is removed from the project site, keep the area free of tree tobacco regrowth by covering disturbed areas to minimize likelihood for moth to breed in the area.
- Removing plants less than one meter in height or during the dry season.
- If removing tree tobacco over one meter in height or disturbing the ground around the plants, they must be inspected by a qualified entomologist for the presence of moth eggs and larvae.

To minimize the risk of a potential spread of Coconut Rhinoceros Beetle on Maui, the project would follow the measures provided in the Hawaii Department of Agriculture's approved Plant Quarantine Interim Rule 22-1. This rule serves to restricts the movement of CRB host material within, to, and from Oʻahu, which is defined as the Quarantine Area. Additionally, the following methods would be used to control the spread of CRB.

- Proper disposal and removal of CRB breeding habitat including mulch, compost, stumps, dead trees, and plant waste piles.
- Avoid the transport of mulch, especially from Oʻahu.
- Avoid cutting down infested trees to reduce the spread of CRB.
- If the CRB is detected on the project site, the Hawai'i Invasive Species Council shall be immediately notified.

3.7 NATURAL HAZARDS

Due to Hawai'i's location in the Pacific Ocean, the island's topographic landscape, geologic makeup, and climate, Hawai'i is vulnerable to several natural hazards that can threaten both communities and physical infrastructure. These hazards include flooding, sea level rise, hurricanes, tsunamis, earthquakes, volcanic eruptions, and wildfires. Some of these hazards have the potential for greater impacts in the future due to climate change. The vulnerability of the project to these hazards are described below:

3.7.1 FLOODING

The Federal Emergency Management Agency (FEMA) has identified Special Flood Hazard Areas or high-risk areas that are vulnerable to flooding. These Flood Hazard Areas are delineated on FEMA's Digital Flood Insurance Rate Maps (DFIRM). Two of the most common types of flooding are river and coastal flooding, however, heavy rains, poor drainage, and construction projects can put certain areas at risk for flood damage (FEMA, 2023). The County has established rules and regulations in Chapter 19.62 of the Maui County Code to minimize risks to life and property from developments or activities in special flood hazard areas (COM, 2023).

As described in Section 3.2 (Climate and Climate Change), climate change has the potential to increase variations in rainfall patterns and may increase the frequency of and extent of flooding in Hawai'i (SOH, 2023). As a result, increased flood events will pose a higher risk to communities, developments, and infrastructure in the future especially in those areas that are in existing Special Flood Hazard Areas.

According to FEMA's DFIRM map shown in

Figure 3.6, the project site is within an area designated as Zone X that is not within a Special Flood Hazard Area. Zone X is comprised of areas determined to be outside the 500-year flood and protected by levee from 100- year flood, and thus has minimal risk of flooding. Annual rainfall along this central Maui region is generally low compared to other areas of the island with an average annual rainfall of only about 16 inches per year. Therefore, the project site along with surrounding areas are not subject to frequent or notable flooding concerns that reflect the site's Zone X designation.

There is an undeveloped County-owned parcel of about 2.85 acres situated across the street from the site that is used as a detention basin by the County. This detention basin appears to serve mauka (southbound) areas such as the golf course and surrounding residential developments. Storm water from this basin is then discharged into the County's drainage system within West Papa Avenue.

Figure 3.6: Flood Zones

Project Effects from Flood Hazards

The project should have minimal short- or long-term impact on potential flood hazards associated with the site and surrounding high school area. Site improvements for the project would slightly change existing topographic conditions to accommodate buildings, parking, and other accessory improvements. However, this should have minimal effect on potential flood conditions that are already low risk (Zone X) for this area because improvements would not be large enough to significantly change the overall flow of regional drainage conditions in the area.

Structures would increase impervious areas at this site, however, site design would include measures to minimize increased stormwater discharges and provide sufficient drainage improvements. Increased runoff from the developed site should not affect the County's drainage basin located across West Papa Avenue since site runoff would flow north toward the high school buildings and not mauka across this road. A later section on drainage effects covers this. Therefore, existing flood hazard conditions at this site and at other adjacent existing uses would not be changed or significantly impacted by the project.

3.7.2 TROPICAL STORMS AND HURRICANES

Tropical storms (winds between 39 to 73 mph) and hurricanes (winds greater than 74 mph) are tropical cyclones that occur over tropical or subtropical oceans and gain their energy from warm ocean waters (NOAA, 2020). Characterized by high winds, heavy rainfall, and large storm surges, these tropical cyclones can have devastating impacts to coastal areas. The Hawaiian Islands are seasonally affected by tropical storms and hurricanes in the Pacific Ocean from June to November.

In the near future, it is expected that warmer oceans due to climate change would create better conditions for more frequent, irregular, and intense tropical cyclones to form in the Pacific Ocean and approach the Hawaiian Islands.

Exhibit 3-6 shows the paths of prior hurricanes and tropical storms that affected the Hawaiian Islands from 1950-2016 based upon information from the National Oceanic Atmospheric Administration (NOAA). Hurricane Darby recently impacted the State in the summer of 2016, bringing heavy rain and widespread flash flooding to windward areas across the state. The Central Pacific basin had a record number of storms (15) in 2015. Not all of these storms pass directly through the state, and actual hurricane strikes on the Hawaiian

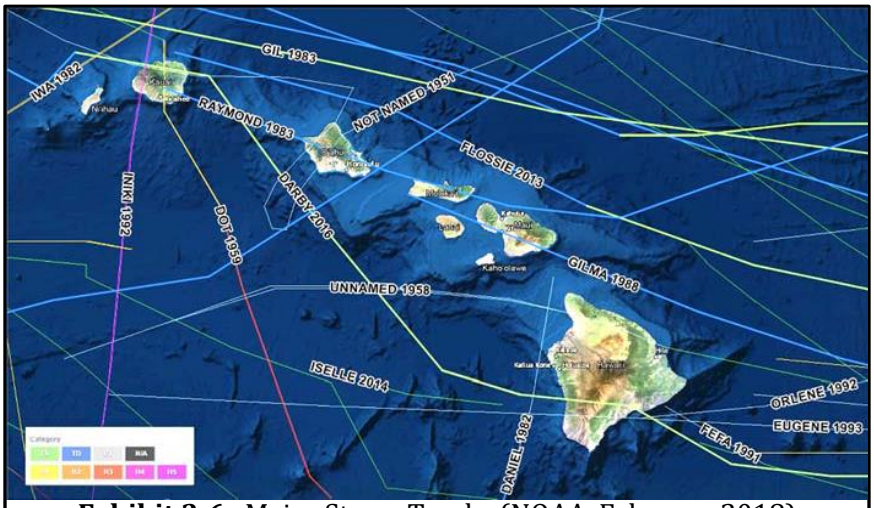


Exhibit 3-6. Major Storm Tracks (NOAA, February 2018)

Islands are relatively rare in the modern record. More commonly, hurricanes pass close to the islands generating large swells and moderately high winds causing varying degrees of damage (USGS, 2002). Of these storms, Hurricanes Dot (1959), Iwa (1982) and Iniki (1992) directly hit the Island of Kaua'i.

Project Effects from Hurricanes

The three major elements making a hurricane hazardous are: 1) strong winds and gusts; 2) large waves and storm surge; and 3) heavy rainfall (FEMA, 1993). Impacts from hurricanes can thus be severe and lead to beach erosion, large waves, high winds, and marine over-wash despite the fact that the hurricane may have missed a particular island (USGS, 2002). Study of the aftermath of Hurricane Iniki found that a significant threat related to hurricane overwash along the coastline in the Hawaiian Islands is due to water-level rise from wave forces rather than wind forces.

The project site may be impacted in the future by a tropical storm or hurricane that comes directly to or near Maui Island. A hurricane of significant strength and high winds passing directly over or close to the Island of Maui could cause damage to project improvements along with surrounding areas. However, proposed improvements are located a considerable distance away from the shoreline and should not be affected by large waves or storm surge.

Heavy rainfall and high winds may cause some damage to project improvements along with other structures in the surrounding area. To minimize potential hurricane damage, facilities, structures and other improvements would be designed and constructed in conformance to applicable State and County design standards and building codes. Therefore, the susceptibility of being damaged from a hurricane would be no different from other structures or buildings present in the surrounding area.

3.7.3 TSUNAMI RISK

A tsunami is a series of extremely long ocean waves caused by a large and abrupt displacement of the ocean that are mostly generated by earthquakes in marine or coastal regions, undersea volcanic eruptions, or landslides (NOAA, 2019). A tsunami can cause widespread destruction of coastal structures and communities. Over the past centuries, about 78% of tsunamis have occurred in the Pacific Ocean (NOAA, 2019). Predicting when and where a tsunami will strike is currently impossible. Therefore, the tsunami evacuation zone has been established throughout the State of Hawai'i as areas that should serve as a guideline as the minimum safe evacuation distance in the event of a tsunami (HIEMA, 2020).

As shown in Figure 3.7, the project site is not located within the tsunami evacuation zone or the extreme tsunami evacuation zone. That evacuation zone includes the shoreline area up to about West Wakae Avenue that is located over 3,000 feet away from the project site. The extreme tsunami evacuation zone extends further inland generally up to the edge of the high school, but still does not include the project site. The project site is also located at a higher elevation of about 75 AMSL reducing the risk and susceptibility of being affected by a tsunami.

Project Effects from Tsunami

The project's improvements have a low likelihood of being significantly impacted and damaged by a tsunami based upon the evacuation zones discussed because the site is located outside of these areas. However, a tsunami of significant magnitude could impact the project along with other surrounding developments. To minimize potential damage, facilities, structures and other improvements would be designed and constructed in conformance to applicable State and County design standards and building codes.

3.7.4 EARTHQUAKES

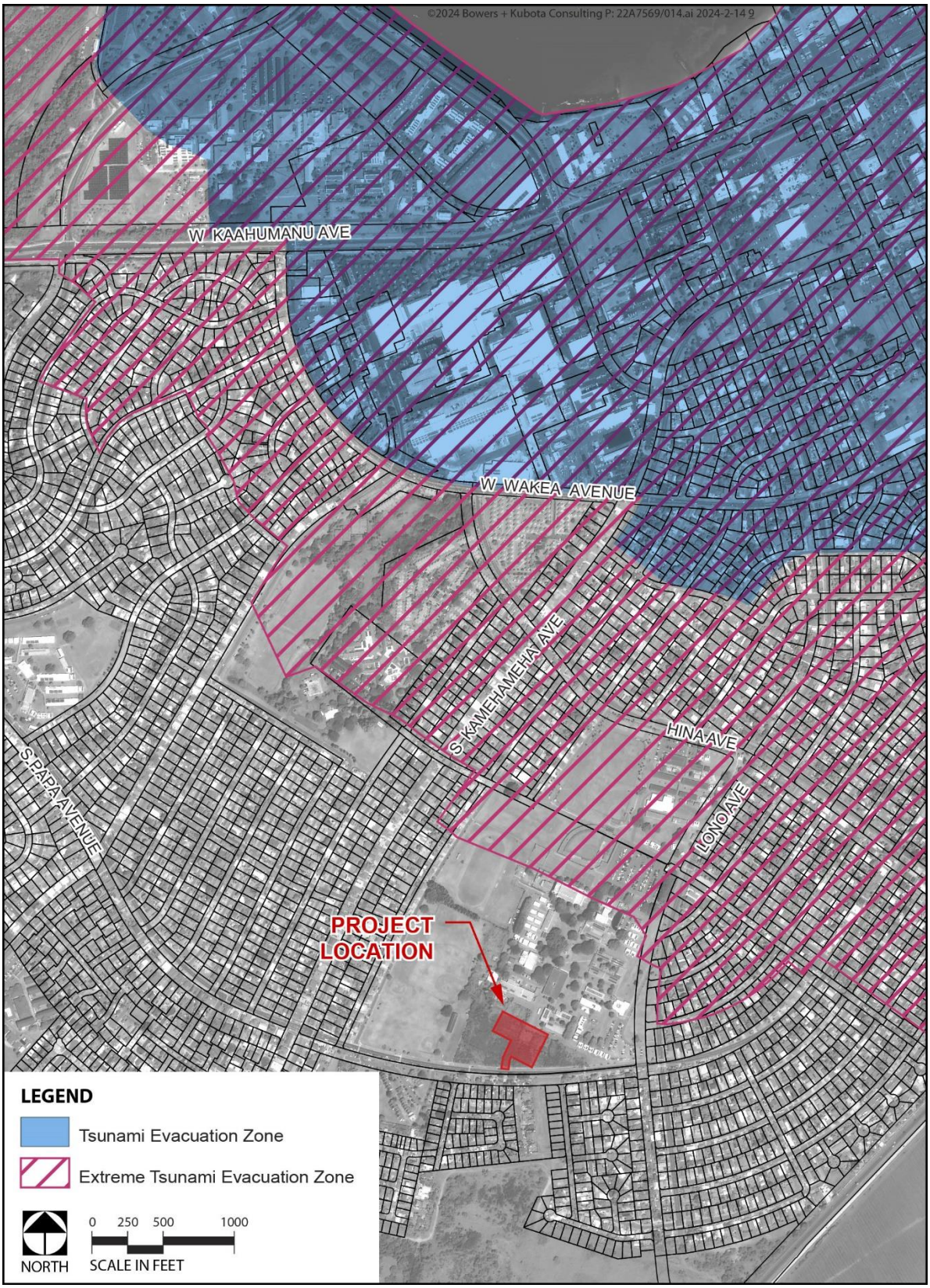
Thousands of earthquakes occur every year in Hawai'i because of the presence of active volcanoes and the weight of the islands on Earth's underlying crust (USGS, 2017). Most earthquakes in Hawai'i today occur on or near Hawai'i Island in active volcanic areas such as Kīlauea, Mauna Loa, and Kama'ehuakanaloa (formerly Lō'ihi Seamount) volcanoes. However, only very few earthquakes from Hawai'i Island have been documented to be large enough to cause significant damage and impact residents across the State including Maui Island (USGS, 2017). Major earthquakes in the future that would most likely occur near Hawai'i Island's volcanoes may be large enough to impact the project site.

The Moloka'i Fracture Zone is an extension of a transform fault from the East Pacific Rise that extends from Moloka'i to the Gulf of California. This fracture is tectonic in origin and suspected to contribute to central region seismicity associated with an active seafloor. Because two known earthquakes (1871 and 1938) have occurred along the fracture, it is referred to as the Moloka'i Seismic Zone.

Project Effects from Earthquakes

The USGS has assigned seismic hazard intensity ratings to all islands on a scale from 1 to 4, with 1 representing lowest hazard and 4 the highest (USGS, 2002). Maui possesses a seismic risk ranking of 2 indicating a lower hazard. Earthquake hazard risk within the project area is comparable to other areas of the island. Project buildings and infrastructure improvements should not be significantly impacted by most earthquakes occurring within the state due to the island's lower risk rating. To minimize potential damage, facilities, structures, and other improvements would be designed and constructed in conformance to applicable State and County design standards and building codes.

Figure 3.7: Tsunami Zones



3.7.5 VOLCANIC ERUPTIONS

To date, there are six active volcanoes throughout the Hawaiian Islands, most of which are located on or near Hawai'i Island. The Island of Maui has one active volcano, East Maui Volcano or Haleakalā, which has erupted at least 10 times during the past 1,000 years (USGS, 2023). The West Maui Volcano is now considered to be extinct. Haleakalā's long eruptive history and recent activity about 400 years ago indicate that the volcano could erupt in the unforeseen future.

Project Effects from Volcanic Eruptions

The project site in Kahului is straddled between both volcanoes that make up Maui Island. Past lava flows from Haleakalā were mainly focused along the southwest and east rift zones away from Kahului. The most likely impacts to the project site from volcanoes would be from more active volcanic eruptions on Hawai'i Island that may bring heavy volcanic smog or "vog" that would affect public health as has occurred in the past.

The County of Maui's Emergency Management Agency directs and coordinates the County's emergency management operations in the event of a natural disaster to Maui County. Construction personnel and users of the proposed facilities would respond to any County of Maui emergency alerts, as appropriate, to ensure safety.

3.7.6 WILDFIRES

Wildfires are uncontrolled fires that burn wildland vegetation, often occurring in undeveloped or rural areas. Increased wildfires in the State have been occurring from declining managed agricultural land leaving more fire-prone dry invasive grasses and shrubs, and the changing native Hawaiian wilderness to one comprised of drying grasslands. Prolonged periods of drought exacerbated from climate change also contribute to these conditions. Human caused ignitions are the main cause (95%) of starting wildfire incidents. Statewide, data from 2002 to 2012, indicated that about 76 percent were accidentally caused, 19 percent were intentional, and 5 percent from lava and lightning. Accidental ignitions include campfires, fireworks, equipment, and vehicles (HWMO, 2013).

The summer to fall months of the year in Hawai'i is the period of greatest fire risk as areas are hotter and drier, and along with strong trade winds could provide ample fuel for a wildfire. The project site along with most of Kahului is within a High Fire Risk Area as shown in Figure 3.8.

In the last five years, average annual temperatures have peaked across all islands including Maui Island (SOH, 2023). Rising temperatures in Hawai'i because of climate change are already bringing more intense and longer drought conditions, increasing the likelihood for more wildfires in the future that could impact areas around the project site.

Figure 3.8: Fire Risk Areas

Project Effects from Wildfires

The potential for wildfires may occur from undeveloped areas around a few holes of an existing golf course and large agricultural fields present further inland (south) from the project site. Wildfire risk from areas below (makai or north) of the site should be less since the area consists of the high school, ballfields, and developed residentials areas that would be associated with more common urban-related fires.

The mowing facility and MCSA building are set back a considerable distance away from West Papa Avenue and mauka residences developed along that street. This provides a large frontage area to help buffer the buildings from undeveloped mauka areas helping minimize risks of the project being affected by wildfires. Landscaped areas for the project would be maintained and thereby reduce dry grass or brush areas on the property that could help fuel wildfires. Design plans would be coordinated for ministerial review and obtaining necessary permits by County agencies which would include the Department of Fire and Public Safety to ensure that fire apparatus access, water supply for water protection, and fire and life safety requirements are included where appropriate.

3.8 HAZARDOUS MATERIALS

EnvironMETeo Services, Inc. (EMET) conducted a Soil Characterization Report in July 2023 for the undeveloped areas to the south of the MHS campus that contain the project site. Soil samples were collected in the project area to provide information about the presence or absence of soil contamination from pesticides, lead, and arsenic which were identified by DOE as contaminants of potential concern in advance of construction activities. A copy of the report is included in Appendix B of this document.

Many areas around buildings constructed before 1980s, such as the MHS campus which was constructed in 1972, have been found to contain organochlorine pesticides like chlordane, which was used until 1988 as a termiticide. Chlordane was banned after 1988 due to its known health effects and the termiticides persistence in remaining in up to 6-inches of soil below the ground surface. Lead contamination, a neurotoxin, in soil likely originated from lead-based paints used until the 1970s. Arsenic which was used as a pesticide and rodenticide through the 1940s is a contaminant commonly found in areas where sugarcane or pineapple was once grown. Areas in Kahului and around the project site historically contained sugarcane and pineapple plantations in the 1800s.

Contaminants found in soil samples were tested against the State's DOH Fall 2017 Tier 1 Environmental Action Levels (EAL). EALs are standards for a chemical contaminant's potential for adverse health and environmental effects. A concentration equal to or greater than the corresponding EAL for a chemical contaminant may pose a health and environmental risk. A concentration less than the corresponding EAL generally does not pose a health and environmental risk and does not require further action on the soil.

Results from the soil samples in the report found that pesticides and lead were not present in the soil at the project site, however, arsenic was detected, but not at a EAL level that would pose a health and environmental risk.

Project Effects from Hazardous Materials

The Soil Characterization Report for the project did not find any pesticides and lead within the project site. Arsenic was detected but was not at a level that would pose a health or environmental risk to construction personnel or users of the proposed facilities in the future. Therefore, hazardous materials would not be a concern for the project and no further action is recommended on the soil of the project site.

3.9 HISTORIC AND ARCHAEOLOGICAL RESOURCES

An archaeological literature review and field inspection (LRFI) was conducted by Nohopapa Hawai'i, LLC (Nohopapa) for the project, and is included in Appendix D. The results of the LRFI would provide preliminary historic preservation compliance review next step recommendations. Work conducted for the LRFI included the following:

1. Ethnohistorical background research that included a review of previous archaeological and historic studies conducted in the area from Nohopapa's internal database or those in public records.
2. A field inspection to record current conditions and generate information that could be used to understand the presence of known or newly noted historic properties and the potential for the presence of historic properties. The field inspection was conducted for about 95% of the 6.5-acre undeveloped area of the property. Limitations of the field inspection included 5% of the area that was inaccessible due to overgrown vegetation.

Background Research Results

A summary of the history associated with the Wailuku area, which includes the MHS property and project area, is provided in the following sections below based on the research in the LRFI. The studies provided background on the area's early historical period, and changes to landownership and land use to the present day. More information on the ethnohistorical background of the area is available in the LRFI in Appendix D.

Early Historical Period

Encompassing the project area, the Wailuku ahupua'a is the largest land division within the moku of Wailuku. It straddles Kahului Harbor and is bounded to the east by the lands within the moku of Hāmākuapoko and Kula, to the south by Waikapū Ahupua'a, and to the west by the ahupua'a of Waiehu, both in Wailuku Moku. The ahupua'a encompasses the waters of Kahului Harbor, the Central Maui Plains as well as the eastern reaches of the West Maui Mountains and lands on the western slopes of Haleakalā. Hawaiian oral traditions, or mo'olelo, associated with Wailuku include many references to rain and wind. The makani (winds) and ua (rains) featured here were integrated into dynamic, storied, intertwined Hawaiian ocean, land, and skyscapes.

The project area is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians. These areas in Wailuku were heavily cultivated with terraces, running waters, and fishponds comprising of a large abundant food system. Ke Kula o Kama'oma'o, the central plains of

the isthmus region of Maui, is comprised of dune systems oral traditions identify as battlefields and burial grounds. Four decades of previous archaeological studies support the Hawaiian cultural understanding of the dune systems in Central Maui, including those underlying the project area, as a burial ground.

During the 18th century, Wailuku was a known location of early Hawaiian settlements. At this time, Wailuku contributed to "the largest continuous area of taro cultivation in the islands".

Mid- to Late- 1800s

The project area and surrounding areas underwent a substantial amount of change during the 1800s as sugar cane began to take over former taro lands. Beginning in the 1820s, the sugar industry began in Central Maui and on the lands west, south, and east of the project area. The industry began a long-term boom in the 1860s, enhanced by the ratification of the Reciprocity Treaty of 1875 that allowed free trade between the sovereign Hawaiian Kingdom and the United States.

Several prominent sugar companies had plantations active in the project area vicinity that included the Hawaiian Commercial Company which merged with the Maui Agricultural Company to become the Hawaiian Commercial and Sugar Company. Maps of the area in the 1890s show the project area in the Central Maui Plains surrounded by roads, railroads, and other plantation infrastructure.

In 1882, the project and study area were components of an illegal and unauthorized sale of the 24,000 acres of Crown Lands in the Wailuku ahupuaʻa to California sugar baron Claus Spreckles by Princess Ruth Keʻelikolani. The land deal allowed Spreckles to acquire inalienable Crown Lands from an individual who had no authority or right to sell them.

1900s to Present Day

Historical and modern accounts, maps, and photos provide an understanding of the cultural landscape, settlement and land use of Wailuku ahupuaʻa and the project area during the 20th century to present day. In 1929, the Central Maui Plains and location of the project area are undeveloped, with natural topography, and bounded by the settlement of Kahului to the north, and infrastructure like roads and railroads to the west, south, and east.

Previous archaeological studies had described the project area as a natural sand dune topography and sediment that served as pasture lands until the late 1960s. Extensive ground disturbance and the modification, reduction, and leveling of the natural sand dune associated with the installation of a papaya and lilikoi fruit plantation in the area by Orchards Hawaiʻi occurred in 1968. Concurrently, intact or partially intact sand dune systems are recorded south and west of the project area through the 1980s.

In 1972, the Maui High School campus opened in its present location. Historical photos of the project area and vicinity in the 1970s show MHS on the fringes of encroaching Kahului suburbs. The project area in the southern part of MHS is undeveloped with forested and vegetated segments that were also observed roughly intact during the LRFI field inspection, roughly four decades later. Photos of the area corroborate previous archaeological studies describing sugar cane fields and extensive ground disturbances from farming and

recreational activities like sand mining, dirt biking, the use of informal roads, installation of a drainage pond, and trash dumping observed in lands to the south and west in the 1980s and 1990s.

Previously Identified Historic Properties

Background research had identified three archaeological studies for the study area that included the 2.2-acre project area. These studies included an archaeological monitoring report, draft archaeological monitoring plan (AMP), and LRFI. From these studies, no historic properties, cultural deposits or materials were initially identified within the area. The area of coverage of the previous studies and previous historic properties identified in the vicinity are graphically shown in Exhibit 3-7. Table 3.2 includes a list of these studies and the historical and archaeological findings in the vicinity of the project.

Background research had found that because the Central Maui region contains Jaucas and Puuone dune sand deposits, significant cultural materials may be potentially present on the MHS campus. This idea had led to a previous 2009 State Historic Preservation Division (SHPD) determination requiring an AMP prior to ground disturbing activities for a previous project on the northeastern part of the MHS campus.

At least eight previous archaeological studies have occurred directly south and southwest of the project area. From the studies, burial sites and historic properties have been identified mainly in undeveloped areas to the south of the project area. These previous archaeological studies spanning at least 40 years further reveal the Hawaiian cultural understanding of the dune systems in Central Maui as battlefields and a burial ground. All previous archaeological studies noted that burials are an obvious and heightened concern in the project area and vicinity, as do the background research efforts performed for this study.

Background research and previous studies for the MHS property, however, did not record any historic properties within the MHS campus. Given the extensive land use change that occurred over the decades and absence of documentary evidence of subsurface excavations in the project area, it was determined that not enough information is available to know the likelihood of subsurface historic properties in the project area.

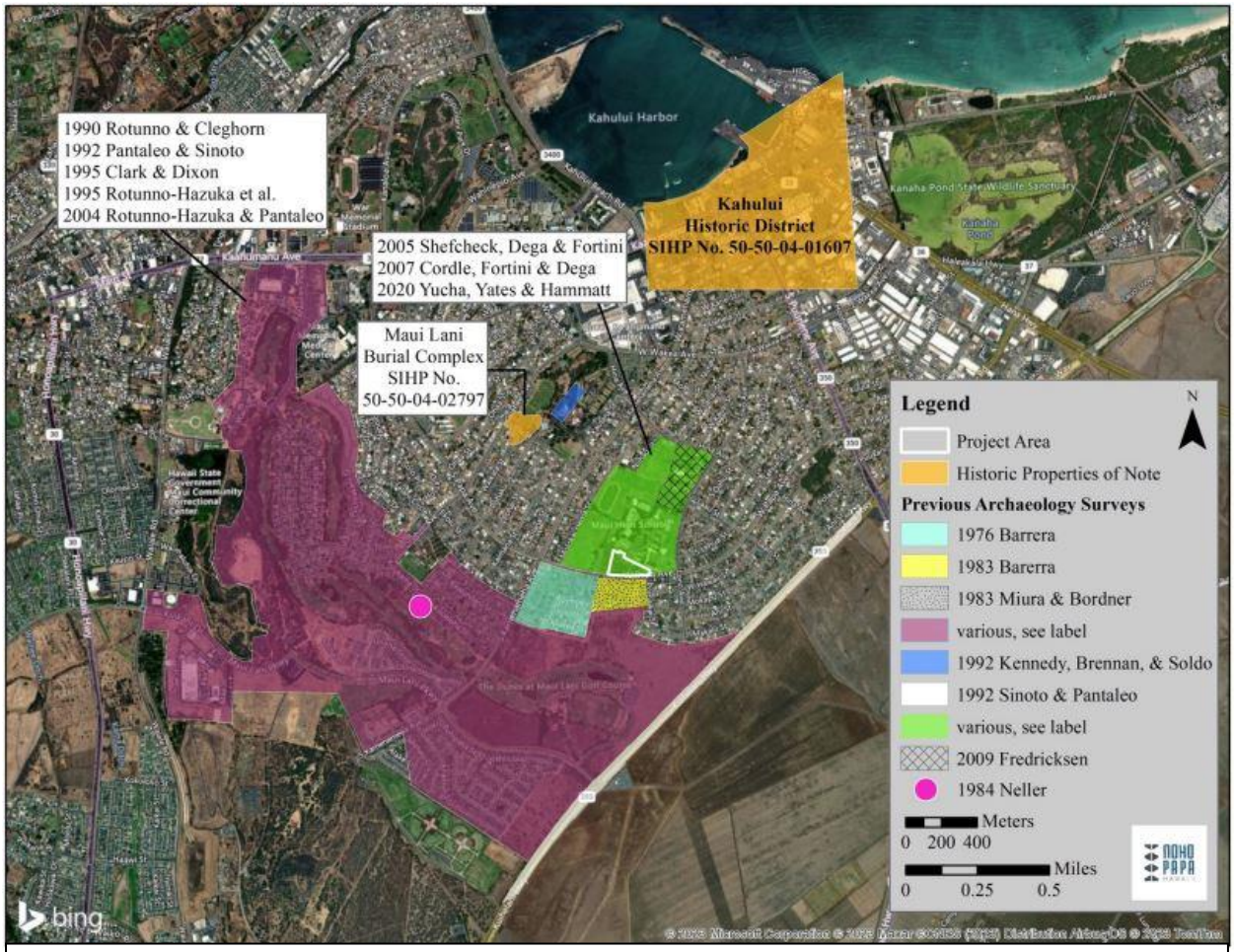


EXHIBIT 3-7: Previous Archaeology Studies and Historic Properties in the Project Vicinity.

Table 3.2
Previous Archaeological Studies Within the Project Vicinity.

Previous Archaeological Research within the Project Area			
Reference	**Type of Study**	**Location**	**Documented Sites/Results**
Shefcheck, Dega, & Fortini, 2005	Archaeological Monitoring Report	Maui HS, TMK: 3-8-007:098	This study was not available.
Cordle, Fortini & Dega, 2007	Archaeological Monitoring Report	Maui HS, TMK: 3-8-007:098	No cultural deposits or isolated cultural materials were identified during this project.
Fredricksen, 2009	Archaeological Monitoring Plan	Kahului Elementary, TMK: 3-8- 007: Portion of 041 & 098	AMP and SHPD recognized that significant cultural materials are potentially present on the MHS campus. No final version of the AMP was found.

Yucha, Yates & Hammatt, 2020	Draft LRFI	Maui HS, TMK: 3-8-007:098	No historic properties were observed in the project area during the field inspection. Archaeological monitoring was recommended based on previous finds within sand deposits northwest and southwest of MHS.
Previous Archaeological Research within the Project Area Vicinity			
Miura & Bordner, 1983	Archaeological Reconnaissance Survey	Directly south of MHS, TMK 3-8-07-106	The site had undergone tremendous land modifications in the last 20 years. Due to the very disturbed nature of the study area, no further surface work was recommended. A previous caretaker did not recollect any artifacts or burials at any time.
Neller, 1984	Letter Report of Test Excavation Results	Wailuku sand hills, in the dunes mauka of Onehee Street, west/northwest of the current study area.	Burials were discovered on site. The burial was excavated and buried in the woods nearby, outside of the sand mining area. Additional bones on the ground surface were attributed to at least three and potentially more undetected burials in the area.
Rotunno & Cleghorn, 1990	Archaeological Reconnaissance Survey	Directly south and across the street from the current project area, TMK 3-8-07:02	Two potential historic properties identified: a sand cobble walkway and rock mound. Neither historic property are located in the vicinity of the current project area.
Pantaleo & Sinoto, 1992	Draft Archaeological Inventory Survey	Central and northern coastal Maui	Unknown – the version of the report available from SHPD was incomplete.
Kennedy, Brennan, & Soldo, 1992	Inventory Survey	Kahului Park, roughly 500 m northeast of the MHS project area	The excavation on the subject property did not encounter human remains in the sand dune. No features or deposits of historic significance were encountered.
Rotunno-Hazuka, et al., 1995	Archaeological Subsurface Testing	Maui Lani property, TMKs 3-8-07:2 and 110, directly south and across the street from the current project area	One burial site has been discovered and designated as Site # 50-50-04-2797 (Bishop Museum Site 50-Ma-C9-40).
Rotunno-Hazuka & Pantaleo, 2004	Draft Archaeological Monitoring Report	Maui Lani subdivision, TMK 3-8-07:121, 130, 131, roughly 400 m south/southwest of the project area	Two inadvertent burial sites (SIHP #4146 & SIHP #5404) were identified and left *in situ*. Results have noted numerous burial sites in the Maui Lani subdivision. Another burial (SIHP #50-50-04-5504) was left *in situ* along Kuikelani Highway in the area.
Source: Nohopapa, 2023			

Field Inspection Results

The purpose of the field inspection was to record current conditions and generate information that could be used to understand the presence of known or potential historic properties in the project area. A field inspection of 95% of the project area was performed. Limitations of the field inspection included a small section that was inaccessible due to overgrown vegetation and an area that contained utility fixtures.

The field inspection of the project area yielded evidence of current and past cultivation activities. Most of the ground surface was observed to be leveled and graded. Aside from overgrown and invasive ʻUhaloa *(Waltheria indica)* shrubs, koa haole and fiddlewood *(Citharexylum fruticosum)* trees, and grasses, active and abandoned māla *(garden plots)* were observed nearest to the MHS campus and within the project area (Exhibit 3-8). Also observed were a calcerous sand-soil surface matrix in the southeastern portion of the project area, a mound with intermixed calcerous sand-soil matrix from possible past mechanized land clearing and modification activities in the western project area, and an exposed PVC piping in the project area.

EXHIBIT 3-8: Photo of land cleared for māla

At the conclusion of the fieldwork, Nohopapa field technicians observed a surface scatter of midden along the north central border of the project area as shown in Exhibit 3-10. This midden consisted of shell and possible coral fragments that extended to unknown lengths as seen in Exhibit 3-9. The midden scatter was only present in disturbed areas and was observed absent from manicured segments of the MHS lawn. Results have noted that while the source of the midden scatter was indeterminate, it could potentially indicate a cultural layer or feature and is therefore a potential historic property that requires additional investigation. No other definitive historic properties were located in the project area during the field inspection.

EXHIBIT 3-9: Photo of scatter of shell midden.

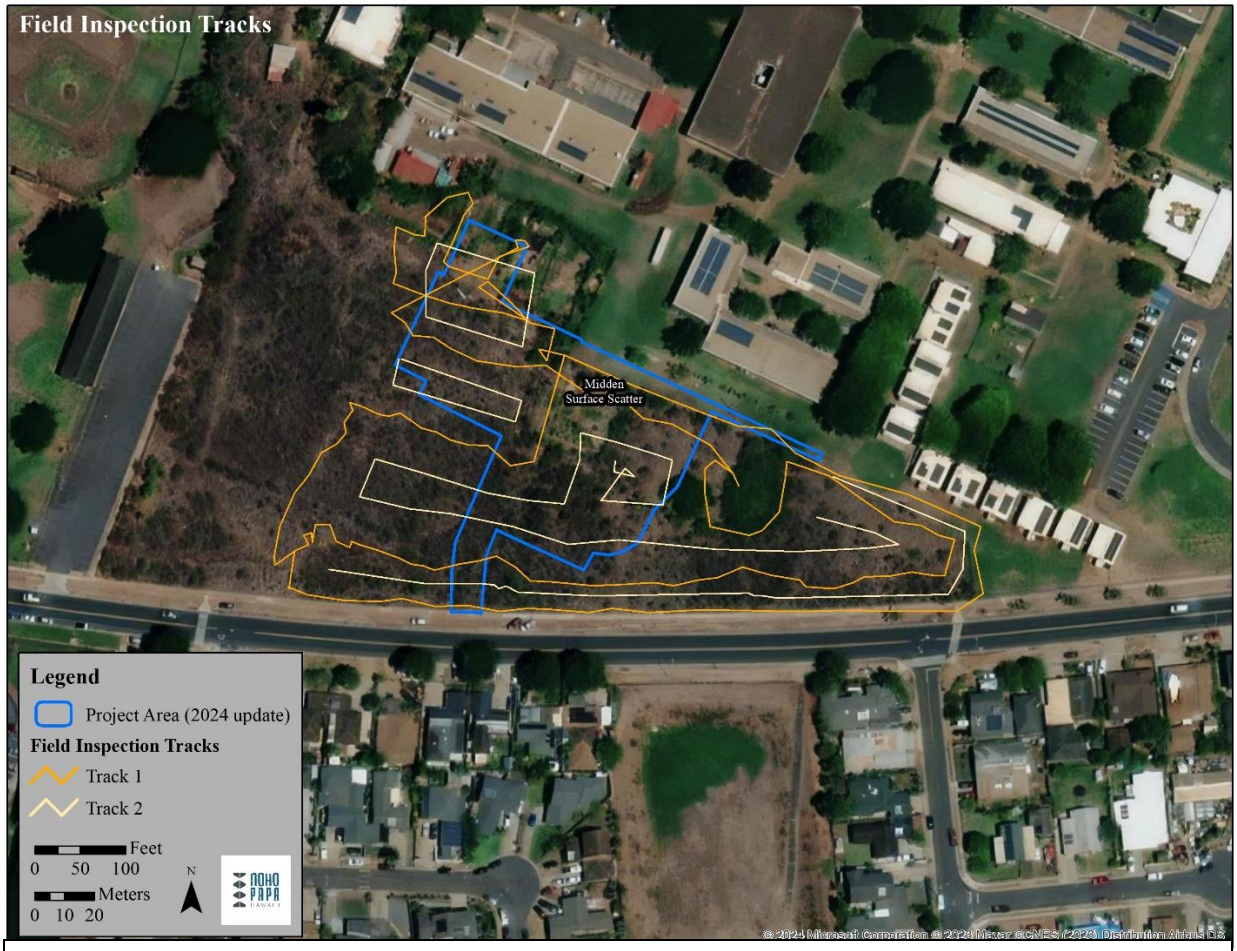


EXHIBIT 3-10: Location of the surface scatter of shell midden found during field inspection.

Project Effects on Historic Properties

Background research and field inspection conducted for the project area have documented in the LRFI that the project site is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians that lived in the region. Ke Kula o Kamaʻomaʻo, the central plains of the isthmus region of Maui, is determined to be comprised of dune systems that Hawaiian oral traditions identify as battlefields and burial grounds. This reasoning has been reinforced by previous archaeological studies of the area, historic properties identified, and previous burials discovered in the region particularly in the Maui Lani area to the south of the project site.

Heavy development, extensive landscape alterations in the area over time, and the lack of historic preservation laws of the past decades have attributed to the likely destruction of some burial sites in the past and lack of detailed archaeological data. Not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area beyond the heightened probability for burials.

Most previous archaeological studies available that had been conducted for the area, including a 2009 SHPD determination for a previous project in the northeastern MHS campus, had recommended archaeological monitoring due to the increased likelihood of burials. Based on these findings and the discovery of a surface shell midden scatter as a evidence of a potential historic property, the LRFI recommended further investigation through an Archaeological Inventory Survey Plan (AISP), a SHPD-reviewed and approved Archaeological Inventory Survey Report (AISR), and a SHPD-approved Archaeological Monitoring Plan (AMP) be developed before commencing construction.

The DOE had consulted with the SHPD through the HRS 6E-8 review process to assess impacts of the project to historic properties. A consultation letter from DOE along with the archaeological LRFI report, project plans, and other relevant maps and photos were submitted to SHPD through SHPD's online Hawai'i Cultural Resource Information System (HICRIS) portal. In a response letter dated July 19, 2024, SHPD stated that not enough information was available to evaluate the potential adverse effects on significant historic properties. As a result, SHPD had requested that an AIS with a subsurface testing component and an AMP be prepared and approved by SHPD before any ground disturbance activities begin. A copy of DOE's consultation letter and SHPD's project effect determination letter is provided in Appendix A-3.

The AIS and AMP work is proposed to be conducted during the project's design phase as construction plans are being finalized, and archaeological monitoring occurring during construction. With these measures, the project effect recommendation should be "effect, with agreed upon mitigation measures" subject to SHPD review and concurrence. The measures implemented would thus minimize the potential for the project's effect on significant historic subsurface properties.

Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

3.10 CULTURAL RESOURCES

The State and its agencies have an affirmative obligation to preserve and protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible. State law further recognizes that cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including but not limited to hunting, fishing, gathering, and religious practices. In what's referred to as the Hawai'i Supreme Court's September 2000 Ka Pa'akai decision, government agencies are provided an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. The analytical framework guiding Ka Pa'akai analyses involves:

1. The identification of valued cultural, historical, or natural resources in the project site, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project site;
2. The extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the Proposed Action; and
3. The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

The archeological LRFI conducted by Nohopapa for the project included historical background research and review of previous archaeological studies on file at the SHPD, review of documents available from other sources, and review of their internal database. Nohopapa also conducted a field inspection of the project site and larger undeveloped area of the high school property. Based upon these research, there are no cultural practices occurring on this site nor is it used to access areas that are used for such practices. The area below the site consists of the high school buildings and facilities, and West Papa Avenue and residential homes are located adjacently inland.

A Cultural Impact Assessment (CIA) was conducted by Nohopapa to identify cultural resources within the project area, potential impacts to those resources, and recommended measures to mitigate impacts. A copy of the CIA is included in Appendix F. The CIA is comprised of four primary tasks: (1) ethnohistorical background research, (2) community ethnographic interviews, (3) cultural impact assessments, and (4) recommendations. Consultation was conducted over a span of four months from November 2023 to March 2024.

Background research included a review of previous ethnohistorical resources such as Hawaiian oral traditions, historical accounts, land documents, photos, records, newspapers, and archaeological studies. Community consultation efforts included identifying appropriate and knowledgeable individuals, gathering input through phone calls and emails, and summarizing the input to include in the report.

Background Research

Findings of the ethnohistorical research are similar to the background research findings detailed in the LRFI, and as presented in Chapter 3.9. The research reiterated that the

project area in Wailuku is in the Ke Kula o Kamaʻomaʻo, the plains of Central Maui, which comprise of expansive sand dune systems that culturally served as a battlefield and burial grounds. This is evident in the numerous burials found to the south of the project site. Subsequently, land use in this area has evolved, transitioning from large sugar plantation operations to the urbanized residential districts that are evident in the present day.

The project area has remained undeveloped with its mostly intact topography until the late 1960s with the installation of papaya and lilikoi fruit plantations which involved extensive ground disturbance and the modification, reduction, and leveling of its natural sand dunes. Thereafter, the Maui High School campus was constructed in 1971 with the project site remaining undeveloped.

Community Consultations

A total of 24 individuals were invited by Nohopapa to engage in consultations for the project. One individual confirmed their interest in participating and completed an interview for the CIA. Twenty-three of the remaining individuals who were contacted to take part in the study were unable to participate for various reasons. Three of those remaining individuals contributed to the ethnography process by offering their recommendations on who to contact to participate in the study, all of whom were contacted with no response.

The one individual who participated is a descendant of Wailuku who is dedicated to the protection of iwi kupuna (ancestral bones). Her concerns related to the potential of discovering burial sites in the project area, given the known existence of other burials found to the south and southwest of the project, specifically in the Maui Lani area.

Her recommendation to protect burial sites included reducing ground disturbance activities and constructing facilities above ground. Additionally, she emphasized the importance of including cultural consultants in the development process alongside archaeologists. She also shared that students of Maui High School should have a "newer school that was built into the ʻāina" as a solution for the sand dunes which would "build balance and the future of the community in the best way possible."

Project Effect on Cultural Resources

Development of the facilities and site improvements on the site would have no short- or long-term effect on existing cultural practices because the site is not used to access areas for such practices. The State-owned property, that includes the project site, is associated with Maui High School and has been used for educational activities and programs. After the MCSA program moves from this new site back to its original location, the MCSA building would be utilized by students and staff of Maui High School for its educational programs.

The sand dune systems throughout Central Maui and beneath the existing urban and residential developments of Kahului, traditionally served as cultural burial grounds. A SHPD-approved AIS and AMP would be prepared and implemented, thus, would minimize the potential for the project's potential effect on significant historic subsurface properties.

To also minimize adverse effects to any potential burials on the project site, cultural monitoring would be used alongside archaeological monitoring, subject to SHPD review

and concurrence. Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

3.11 VISUAL RESOURCES

According to Section 19.04.040 of the Maui County Code, a "viewplane" means open space and significant vistas, particularly toward the ocean, the mountains, or into the valleys. The Kahului community is situated in a relatively low and flat isthmus connecting the island's two volcanoes which are Maui's highest point at Haleakalā Volcano and the West Maui Mountains.

The County's Scenic and Historic Resources report prepared in 2006 as part of the County's General Plan 2030 update was reviewed to identify significant scenic resources in the vicinity of the project. Based upon the scenic corridor protection map for West and Central Maui, West Papa Avenue and adjacent roads are not identified as being scenic roadway corridors.

Existing views from the project site are of heavily vegetated and overgrown areas on the property when looking west, West Papa Avenue and one to two-story residential homes when looking south, other residential areas when looking east, and the Maui High School campus when looking north. Being within the high school campus property, there are no established public scenic viewing locations. Beyond the immediate project area lies the West Maui Mountains when looking into the distance to the west, and Haleakalā Volcano when looking to the distant east.

Public views of the project site would generally occur from West Papa Avenue, which runs east to west on the southern side of the property. These views would be of the property's existing chain-link fence and of the existing koa haole scrubland and Napier grassland as shown on Exhibit 3-11. Views of the site from within the high school campus would be similar and is shown on Exhibit 3-12. Therefore, there are no important scenic resources or viewing locations associated with the project site. The current view of this site is not considered an important scenic resource with distinctive or noteworthy views. The site lacks unique visual elements, is not an important landform, and does not have high visual intactness or distinctiveness.

EXHIBIT 3-11: Public view of the project site from West Papa Avenue

Project Effects on Views

The Project would alter existing views from West Papa Avenue of the heavily vegetated and overgrown area as the site would be improved. Vegetation would be cleared at the site, parking and an access road constructed, and the two buildings for the Mowers Facility and MCSA would be visible. Open space areas would be landscaped with grass, trees, and other vegetation. Overall, views of the site would thus change from an undeveloped scrubland to an improved facility.

This change should not have a significant long-term impact on views because the site currently lacks distinctive or noteworthy visual qualities. The project would improve views of this area that is more complementary to the existing school campus and nearby ballfields.

EXHIBIT 3-12: View of the project site from Maui High School campus

It is expected that the proposed facilities would pose minimal visual impacts to users of Maui High School and to surrounding residential areas as building height would remain similar to the surrounding areas. Both buildings would be single-story structures with the MCSA having an approximate building height of about 15 feet and the Mowers Facility with an approximate height of 17 feet.

Where appropriate, landscaping and the design of the building's exterior will be considered to integrate and complement views of the project with the high school campus.

Construction activities should not have short-term impacts on this present view or affect views of surrounding areas. Views of the site would include the staging of construction equipment, vehicles, materials, and BMP measures such as fugitive dust screens.

3.12 TRANSPORTATION FACILITIES

A Traffic Impact Report (TIR) has been prepared by Wilson Okamoto Corporation to identify and assess the traffic impacts resulting from the project. The TIR included establishing existing traffic conditions in the vicinity of the project area, forecasting trips generated from the project, assessing its anticipated impact on traffic, and recommended design measures to improve driveway access, internal circulation, and other measures to minimize traffic effects.

Field investigations for the TIR were conducted in September 2023. These investigations included pedestrian and vehicular turning movement traffic counts taken during morning and afternoon peak hours at five study intersections in the vicinity of the project. These intersections were analyzed for existing traffic conditions (2023), future traffic volumes

(2025) without project, and future traffic volumes (2025) with project conditions. A summary of the TIR is provided in this section and a copy of the full TIR is provided in Appendix E.

3.12.1 EXISTING ROADWAYS AND FACILITIES

In the vicinity of the project, West Papa Avenue is a County of Maui roadway oriented in the east-west direction serving as a connector road between Kaʻahumanu Avenue (State Route 32) and Puʻunēnē Avenue. Four two-lane, two-way, north-south, unsignalized, and stop-controlled roads intersect West Papa Avenue in the vicinity of the project. These roads which primarily serve residential uses in the area are Lono Avenue, Pōmaikaʻi Street, Honowai Street, and Molokaʻi Hema Street. South Kamehameha Avenue is a major signalized intersection along West Papa Avenue.

The project site is located within a residential community where there is a network of pedestrian facilities including overhead streetlights, sidewalks, and curb ramps that provide access to the nearby schools, transit facilities, and surrounding residential uses. All traffic study intersections in the vicinity of the project site have at least one marked crosswalk on West Papa Avenue. The primary access to the MHS campus is provided via an existing driveway off Lono Avenue.

Existing dedicated bicycle facilities around the project are limited. Bicyclists traveling through the vicinity of the project site along West Papa Avenue must share the road with vehicles. However, bike lanes are provided on this road further west of the intersection of South Kamehameha Avenue. Thus, conditions for bicyclists in the project vicinity are generally more suited for those who are experienced.

Transit service in the project vicinity is provided by the County's Maui Bus. Bus stops along West Papa Avenue are provided near the intersections with Lono Avenue and Molokaʻi Hema Street, both of which are within a five-minute walk from the project site. These bus stops are served by Route 5 and 6 (referred to as the Kahului Loop) which operate between 6:30 A.M. and 10:00 P.M.

The proposed project is approximately 1.4 miles southwest of the Kahului Airport (OGG) and may be subject to potential single-event effects (i.e., noise, fumes, smoke, vibrations) from aircraft flight operations over or near the project.

3.12.2 EXISTING TRAFFIC CONDITIONS

Traffic conditions were analyzed and based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic. LOS are defined by LOS "A" to LOS "F" representing ideal or free-flow traffic operating conditions to unacceptable or congested traffic conditions as described in Table 3.3. The analysis was based on peak hour time periods for each intersection to identify the traffic impacts resulting from the project. The AM peak hour of traffic occurs between 7:15 AM to 8:15 AM while the PM peak hour of traffic occurs between 4:45 PM to 5:45 PM.

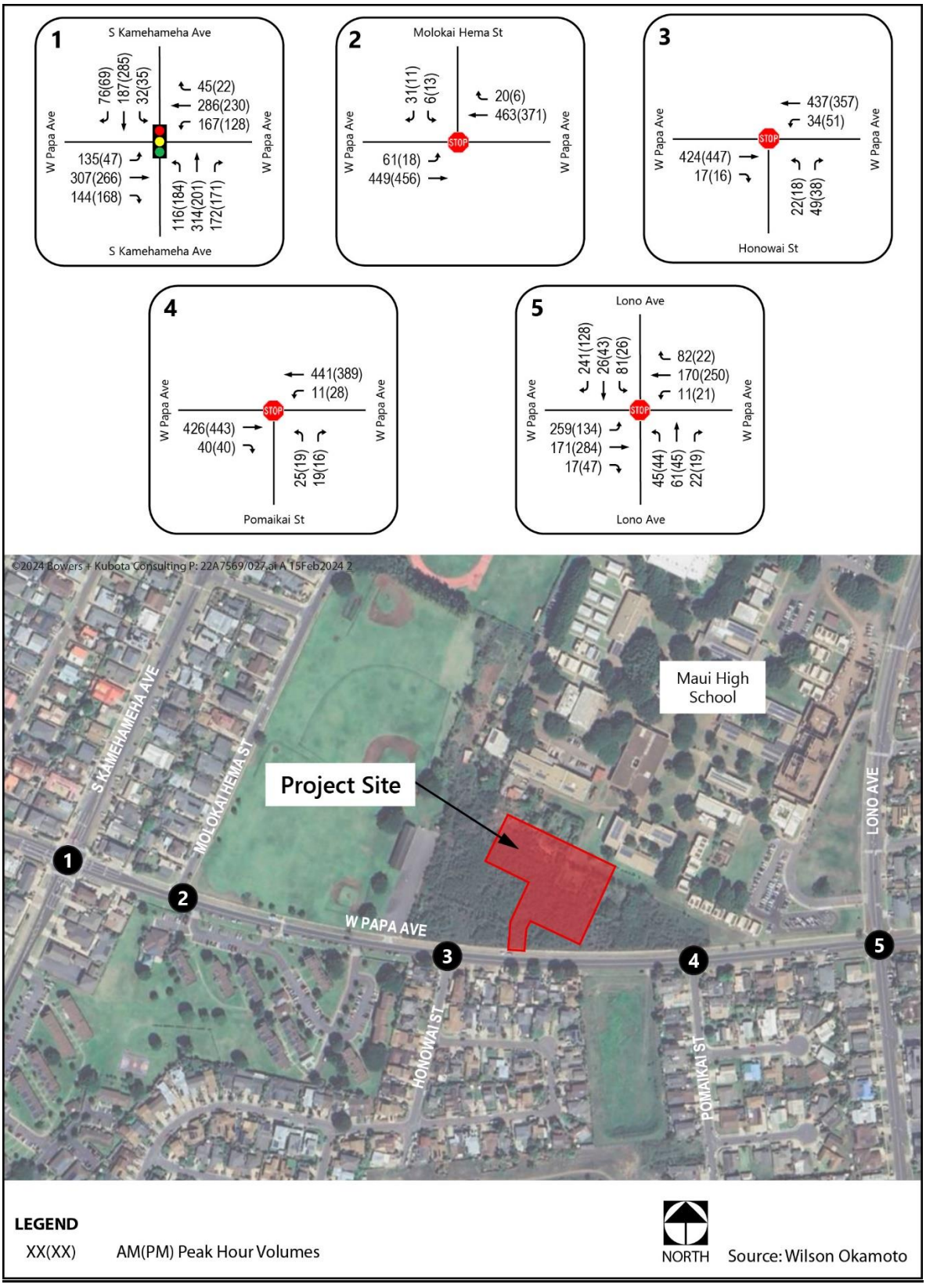
Table 3.3 LEVEL OF SERVICE DESCRIPTIONS

LOS	GENERAL DESCRIPTION	ACCEPTABLIITY
A	Free-flow traffic	Ideal
B	Reasonable free-flow traffic	Satisfactory
C	Stable or near free-flow traffic	Satisfactory
D	Approaching unstable traffic flow	Acceptable
E	Unstable traffic flow	Unsatisfactory
F	Congestion/Forced traffic flow	Unacceptable

Figure 3.9 shows the location of the five study intersections along with existing traffic counts collected. There was a total of approximately 910 to 920 cars traveling along West Papa Avenue fronting the project site during the AM peak hour and about 870 to 900 cars during the PM peak hour. The directional split in traffic was fairly even during the morning peak hour with about 52 percent traveling westbound (48% eastbound) while the afternoon peak hour had more vehicles traveling in the eastbound direction (53%).

The intersection analysis results determined that most approaches at each study intersection operated at satisfactory levels ranging between LOS B and LOS C. The eastbound approach at the Lono Avenue intersection was the only approach operating lower, but still at an acceptable level, at LOS D during both peak periods. Field observations determined this condition to be attributed to vehicles queuing to access the nearby schools and the all-way stop-controlled intersection. These queues were primarily clustered around the start of the school day and dissipated once school was in session.

Figure 3.9 : Existing Traffic Conditions in 2023



Pedestrian Traffic Observations

Crosswalks are provided across West Papa Avenue on the east and west sides of the Lono Avenue intersection, as well as across Lono Avenue on the north and south sides of the intersection. During the AM peak period, a total of 26 pedestrians were observed crossing West Papa Avenue (both sides) while a total of 10 pedestrians were observed crossing Lono Avenue. During the PM peak period, just five pedestrians were observed crossing West Papa Avenue and just one pedestrian crossing Lono Avenue.

3.12.3 PROJECTED TRAFFIC CONDITIONS WITHOUT AND WITH THE PROJECT

Future Traffic Conditions Without Project (2025)

The travel forecast is based upon Historical State DOT, Highways Division traffic count data was used to project future traffic conditions without the project in 2025. The historical data indicated fluctuating/declining traffic volumes in the project vicinity. Thus, an annual traffic growth rate of approximately 0.5 % was conservatively assumed. Using 2023 as the Base Year, a growth rate factor of 1.02 was applied to the existing through traffic demands along the surrounding roadways to achieve the projected Year 2025 traffic demands.

Traffic operations without the project are generally expected to remain similar to existing conditions. Along West Papa Avenue, the approaches at the intersection with Lono Avenue are expected to continue operating at LOS "D" or better during both peak periods. At South Kamehameha Avenue, the approaches at the intersection with West Papa Avenue are expected to continue operating similar to existing conditions at LOS "C" or better during both peak periods. The remaining study intersections along W. Papa Avenue are also expected to continue operating at LOS "C" or better during both peak periods.

Future Traffic Conditions With Project (2025)

Project site-generated traffic associated with the Mowers Facility are expected to be primarily attributed to employees and the transport of mowing equipment to various schools within the DOE Maui District during their expected operating hours. The Mowers Facility is expected to have three employees whose work hours are from 6:00 AM and 2:30 PM and a total of three trucks are used to transport mowing equipment. Based on the activities and operating hours of the Mowers Facility, only the mowing equipment trucks exiting the project site in the morning were assumed to occur during the AM peak period and thereby incorporated into the analysis.

Trips associated with the MCSA are expected to be attributed to employees and students. Site-generated trips associated with the employees of the MCSA were determined based on their expected work hours while those attributed to students were based on an assessment of the schedule, duration, and maximum capacity of classes. As such, trips by employees of the MCSA were assumed to occur during both peak periods. The only trips of significance were those associated with students entering the project site for evening classes which is expected to occur during the PM peak hour. Table 3.4 shows the project trips generated.

Table 3.4 Project Generated Trips		
DOE MOWERS FACILITY	**AM Peak Hour**	**PM Peak Hour**
Enter	0	0
Exit	3	0
Total	3	0
MCKINLEY COMMUNITY SCHOOL FOR ADULTS	**AM Peak Hour**	**PM Peak Hour**
Enter	3	23
Exit	0	3
Total	3	26

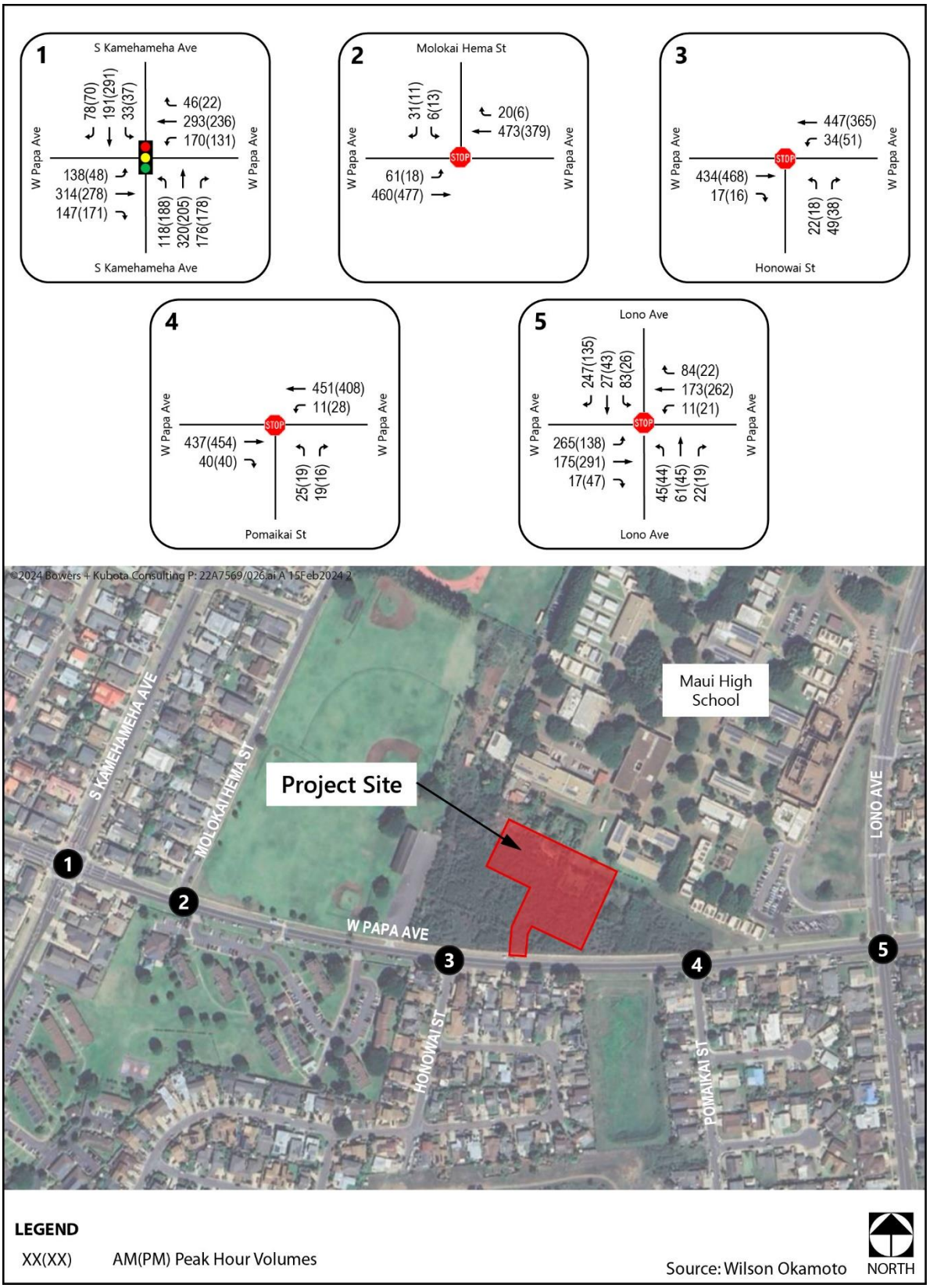
The projected Year 2025 cumulative AM and PM peak hour traffic conditions resulting from the project is shown in Figure 3.10. Table 3.5 includes a summary of the existing, without project and with project intersection analysis results.

Under the project conditions in 2025, traffic operations in the area are expected to remain similar to without the project. Most intersections were expected to continue operating at LOS "C" or better. Based on the daily operations associated with the proposed uses including the anticipated class schedule of the MCSA, the majority of trips accessing the project site are not expected to overlap during the operations of MHS. As such, the project is not expected to have a significant impact on the surrounding roadways.

Table 3.5 LEVEL OF SERVICE (WITHOUT AND WITH PROJECT) IN YEAR 2025

Intersection	Approach	AM			PM		
		Year 2025			Year 2025		
		Existing Condition	Without Project	With Project	Existing Condition	Without Project	With Project
W. Papa Ave + Lono Avenue	Eastbound	D	D	D	D	D	D
	Westbound	C	C	C	B	C	C
	Northbound	B	B	B	B	B	B
	Southbound	C	C	C	B	B	B
W. Papa Avenue + Pōmaikaʻi Street	Northbound	C	C	C	C	C	C
W. Papa Avenue + Honowai Street	Northbound	C	C	C	C	C	C
W. Papa Avenue + Molokaʻi Hema St.	Southbound	B	B	B	C	C	C
W. Papa Ave + S. Kamehameha Avenue	Eastbound	B	B	B	C	C	C
	Westbound	B	B	B	B	B	B
	Northbound	C	C	C	B	B	B
	Southbound	C	C	C	C	C	C

Figure 3.10: Future Traffic Conditions With Project in 2025



Future use of the MCSA building by Maui High School is also not expected to have a significant impact on the surrounding roadways. Trips generated would be reduced by 3 vehicles during the morning and 26 vehicles during the afternoon peak hour. Thus, the only additional traffic to this site would be from the mowers facility. Trips associated with the use of the building by Maui High School for educational or programmatic purposes would not change the net traffic generated from the school.

The proposed driveway linking the new facility to West Papa Avenue has the potential to alleviate existing traffic congestion and queues during peak hours for commuters traveling along West Papa Avenue to access the school at the Lono Avenue intersection. After these normal peak hours, local traffic is still expected to dissipate once school is in session. Therefore, it is expected that traffic conditions would remain acceptable with the future use of the building by MHS.

Project Effect on Multimodal Facilities

The project improvements would not change existing multimodal facilities in the vicinity of the project and should thus have no or de minimus effect on these facilities or their current operations. Internal pedestrian walkways would be constructed as part of the project to provide pedestrian connectivity between the site and the existing MHS campus.

There are "near-term" plans to implement Complete Streets improvements by others along W. Papa Avenue in the vicinity of the project, as it is included in the Maui Metropolitan Planning Organization's Long-Range Transportation Plan "Hele Mai Maui 2040". These improvements include construction of bike lanes, multi-use paths, traffic calming features, wide sidewalks, trees and landscaping, and intersection improvements. These improvements constructed by others are expected to provide added safety measures for all modes of travel in the area of the project site.

Project Effect on Airports

All projects within 5 miles of State airports are advised by the State DOT to ensure activities will not adversely impact airport operations. The project is about 1.4 miles from OGG and, thus, would need to ensure that the project's development and activities would not have any adverse impacts. The project would not conflict with the Technical Assistance Manual provided by the State DOT which discusses a Federal Aviation Administration's (FAA) Order 5190.6B on the use of land in the vicinity of airports.

The tallest structures in the project would be the one-story Mowers Facility building (approximately 17-feet) and the one-story MCSA building (approximately 14-feet). These structures would be similar in height to the surrounding neighborhood and the design of the building will not produce significant glint or glare that may be an aerial obstruction to OGG's aircraft operations. Additionally, the project would not provide landscape and vegetation that would create a wildlife attractant that would become a hazard to OGG.

Recommended Design Measures

The following site design-related recommendations were identified to improve traffic circulation within the site as part of minimization measures.

1. Provide sufficient sight distance for motorists to safely enter and exit the project driveway.
2. Provide adequate on-site loading and off-loading service areas and prohibited off-site loading operations.
3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto public roadways.
4. Provide sufficient turning radii at the project driveway to avoid vehicle encroachments to oncoming traffic lanes.
5. Provide adequate pedestrian connections between the on-site and off-site facilities. All pedestrian connections would be made accessible in conformance with the ADA.
6. Consider incorporating bicycle facilities within the project boundaries including designated and secured bicycle parking to encourage the use of alternate modes of transportation.

3.13 PUBLIC INFRASTRUCTURE AND PRIVATE UTILIITIES

The Proposed Action includes the construction and installation of public and private utilities to service the proposed facilities. These utilities include sewer, water, drainage, solid waste, electrical, and telecommunication infrastructure.

3.13.1 WATER FACILITIES

Water utility service to the proposed facilities would be provided by the County of Maui Department of Water Supply. The project's water system would provide domestic water, irrigation supply, and fire protection to the site. DWS serves five sections within the County: Central Maui, East Maui, Moloka'i, Upcountry Maui, and West Maui. The project site is served by DWS's Central Maui System which provides 20,116 meters of water service from Kahului towards Wailea-Mākena (DWS, 2011). DWS waterlines run along West Papa Avenue and Lono Avenue which provide water to Maui High School. One existing 4-inch water meter is located along Lono Avenue.

Project Effects on Water Facilities

The project would have minimal short-term construction-related effects on the County's water system and supply. Such water use would likely be associated with watering developed site conditions to minimize erosion, seeding landscaping improvements, and BMPs for trucks and vehicles accessing the site (e.g., cleaning tires of debris).

The operation of the new MCSA and mower facilities under this project should have minimal net change in the long-term water demand that now occurs at their current site. Because these operations would be relocated to their new facilities under this project, the potable water demand from operations should generally remain the same and not have a

significant impact on the County's water supply. Slightly additional water demand may be required to support irrigational demands depending upon the final landscape improvements implemented. These facilities including irrigation demands are projected to result in water demand of about 14,460 gallons per day (gpd). With relocation of the MCSA program back to the developed civic center, water demand generated from this project site would be reduced further minimizing impacts to the County's water supply and system.

Service extensions (2-inch and 4-inch lines) for the new buildings would be connected to an existing waterline serving the high school. An extension for a fire water line serving a fire hydrant would be connected to the existing line along West Papa Avenue.

Potable and non-potable water demands and calculations would be coordinated with DLNR's Engineering Division for inclusion in the State Water Projects Plan update. The project would also meet the criteria for water service outlined in the Rules Relating to Water Service in Maui County's Administrative Rules (Title 16, Chapter 201), which clarify large quantities of water usage from DWS. However, under section 19.04.040 Maui County Code (MCC), the project would be considered exempt because it is a State public facility project that is located within the service area of DWS's Central or West Maui water system (DWS, 2018). In addition, the project's water system would comply with the building permit requirements for fire protection and backflow prevention.

Design plans will be coordinated with the County DWS during the design phase and necessary ministerial permits will be obtained. Any water use along with any applicable water system facilities charges would be funded by the State DOE when water is made available for project improvements.

3.13.2 WASTEWATER FACILITIES

Wastewater collection and disposal are provided by the County Department of Environmental Management (DEM), Wastewater Reclamation Division. DEM responsibilities include the management, installation, maintenance, and repair of all County wastewater collection lines, force mains, and manholes.

The project site is located within the County's wastewater collection system serving the Wailuku to Kahului community that is comprised of a network of gravity collection lines and force mains with pump stations. The main collection route runs along a "spine" following the coastline leading to the Wailuku-Kahului Wastewater Reclamation Facility. In the project area, existing sewer lines gravity feed wastewater along major roadways toward the coastline. There is an 8-inch sewer gravity main line along West Papa Avenue fronting the project site that eventually connects to a 15-inch sewer main line running makai along Lono Avenue along the east edge of the Maui High School property.

The Wailuku-Kahului Wastewater Reclamation Facility (WWRF) is owned and operated by the County and serves as a regional wastewater reclamation facility for the communities of Kahului, Wailuku, Pāʻia, Kūʻau, and Spreckelsville. This WWRF is situated along the coastline east of the Kahului Harbor facility. This facility provides secondary treatment of sewage and features an activated sludge biological treatment process, secondary clarification, and filtration. The final effluent is disposed of by eight gravity injection wells.

The principal solids treatment and handling processes are aerobic digestion and centrifuge dewatering. The dewatered cake is composted at the Central Maui Landfill.

Project Effects on Wastewater Facilities

The project would have minimal short-term construction-related effects on the County's wastewater collection system and WWRF. Construction workers would likely use portable restrooms at the site that would be properly disposed of.

The operation of new MCSA and mower facilities under this project should have minimal net change in the long-term wastewater generated that now occurs at their current site. Because these operations would be relocated to their new facilities under this project, the wastewater generated from operations should generally remain the same and not have a significant impact on the County's sewer system or WWRF. These facilities are projected to result in about 7,040 gallons per day (gpd) of wastewater generated. With relocation of the MCSA program back to the developed civic center, wastewater generated from this project site would be reduced further minimizing impacts to the County's system.

Sewer line connections from the new buildings would be provided to connect to an existing sewer line serving the high school. Design plans will be coordinated with the County DEM during the design phase and necessary ministerial permits will be obtained. The future use of the MCSA building by the high school is not expected to significantly increase wastewater generation beyond existing levels and what would already occur on the existing campus.

3.13.3 DRAINAGE FACILITIES

The County Department of Public Works (DPW), Engineering Division is responsible for overseeing drainage systems and improvements. The project site is presently undeveloped and thus has no existing drainage improvements. The undeveloped site's Puuone soil type (PZUE) is characterized as having rapid permeability for drainage, slow runoff, and thus a low tendency to flood or pond (USDA, 2019). Stormwater runoff discharged during periods of high rainfall within the site would sheet flow in the makai (north) direction following the natural topography and drainage patterns toward existing high school facilities (Buildings E and L and maintenance building). Based upon the site's topography, it appears runoff would discharge toward an open grassed area generally between the high school's Buildings E and L.

The County has existing drainage improvements along West Papa Avenue consisting of curbs and gutters that transport runoff to either Lono Avenue or Moloka'i Hema Street where it is collected and transported makai toward the coastline. It is likely that most stormwater runoff collected along West Papa Avenue fronting the project site occurs from discharges associated with mauka residential developed areas.

An undeveloped County-owned parcel of about 2.85 acres situated across the street from the site is used as a detention basin for stormwater runoff before discharging into the County's drainage system along West Papa Avenue. This detention basin appears to serve mauka (southbound) areas such as the golf course and surrounding residential developments.

Project Effects on Drainage Facilities

The project would include developed buildings, parking areas, and a driveway access road that would increase the amount of impervious area on the site over existing conditions. This would increase the amount of stormwater runoff being discharged from developed surfaces estimated to be about 9.72 cubic feet per second (cfs) from the existing 4.10 cfs. To minimize the effects from increased runoff, an underground stormwater chamber system is proposed as part of a stormwater management solution. This chamber system would be located under the new mowing facility's parking lot. Drainage inlets within parking lots and building sites would collect runoff to detention in this chamber system. Stormwater discharges from this system would then connect to the high school's existing drainage system generally between Buildings E and L.

This drainage system would allow for the detention of runoff and manage the release of detained water to not impact the school's existing drainage system. Therefore, the project should not have a significant impact on existing drainage facilities or negatively impact surrounding downstream school facilities. Design plans would be coordinated with the County DPW for review during the design phase and necessary ministerial permits will be obtained.

3.13.4 SOLID WASTE DISPOSAL SERVICES

The Maui County Department of Environmental Management's Solid Waste Division is responsible for solid waste collection services and disposal at landfills for the County. The County provides residential curbside refuse pick up and disposal services in four major districts on the island: Central Maui (including Wailuku, Kahului and South Maui), Makawao (including Kula, Pukalani, Pāʻia and Haʻikū), Lahaina (West Maui), and Hāna. Non-residential and commercial uses contract with a private waste hauler for collection services. This would include Maui High School and the project.

There are currently four active County landfills. Two landfills are located on Maui and consist of the Central Maui Landfill and the Hana Landfill. The Central Maui Landfill, located in Puʻunēnē, is the municipal refuse and recycling center serving the project area. The landfill facility, located about 3 miles east of the project site, also provides composting and motor oil and residential recycling services. Construction and demolition waste produced from the project's construction activities would also be disposed of at the Central Maui landfill. Wildfire ash and debris removal from the Lahaina wildfire disaster would not impact the Central Maui Landfill because those contaminated debris are not allowed for disposal at this landfill.

Project Effects on Solid Waste Facilities

The project would have minor short-term construction-related effects on the Central Maui Landfill due to the disposal of construction waste. The project's long-term operations should have minimal change to the amount of waste currently being generated from existing activities because these activities from the MCSA and mower facilities are being relocated to the new site. Thus, there should be minimal long-term impact on solid waste facilities from this project.

Solid waste generated from construction of these improvements would be typical of construction related activities and would have a short-term impact. This waste would consist primarily of vegetation, construction materials, and other associated debris. The amount of construction debris generated is not expected to be significant because the site grubbing, excavation and preparation activities would not be significant given the site's relatively level topography not requiring significant cutting and filling of material. The construction contractor would be responsible for the disposal of this waste at the Central Maui Landfill and would dispose of material in accordance with the County's procedures (e.g. having a valid landfill account and C&D Number).

Waste generated from MCSA, and mower facility operations would be typical of office and light industrial activities. Typical solid waste generated would consist of organics, paper, and plastics. Green waste from mowing operations would continue to be recycled or taken to the appropriate recycling center (Central Maui Landfill) for disposal. It should be noted that the mower facility would be used for equipment storage and repairs. Solid waste from these activities will also continue to be collected by a private disposal service.

The future use of the MCSA building by the high school after their relocation back to the developed civic center would reduce the amount of solid waste generated from this project since the building would be used by school students and administrative staff. These would consist of typical office and school waste such as paper, food, and stationary items.

3.13.5 ELECTRICAL AND TELECOMMUNICATION FACILITIES

Electrical power would be provided by the Maui Electric Company, a subsidiary of the Hawaiian Electric Company (HECO) who provides electricity for 95% of residents in the State. HECO serves about 73,933 customers throughout Maui County and its energy is generated from various sources including oil plants and renewable energy (about 35.6%) (HECO, 2023). Electrical lines servicing the area in and around the Maui High School campus are located underground.

HECO's electricity would be used to support the electrical needs of the proposed classrooms, offices, and to maintain the temperature in these facilities.

Telecommunication infrastructure would be included in the proposed Site Plan to provide cable and internet service to the proposed facilities. These services may be provided by Hawaiian Telcom, Maui's largest local-access landline service provider, and/or Spectrum Charter Communications, a broadband connectivity company.

Project Effects on Electrical and Telecommunication Facilities

New underground electrical and telecommunication utility lines are proposed and would connect to MECO's and telecommunication providers' existing utility infrastructure under West Papa Avenue and the Maui High School campus. Providing underground utilities should not pose a threat to the general public, the high school, natural resources, or any identified cultural and archaeological sites.

It is anticipated that the extension of both electrical and telecommunication services to the project's new buildings would have minimal impact to these providers since it would essentially involve relocating existing services to the new site. Access to any existing HECO easements and facilities around the project site would be maintained. Therefore, the project is not expected to have a significant impact on private utilities and proposed usage would not strain existing service capacity.

Additionally, the DOE is actively incorporating renewable energy initiatives for its schools statewide and has set a goal to reduce its reliance on fossil fuel-based energy by 90% by 2040 with the direction of the Board of Education and the passage of Act 96, Session Law of Hawaii 2006. Specifically, the DOE has already installed or is in the process of constructing solar photovoltaic (PV) systems for 32 schools on Oʻahu, and 15 schools on Kauaʻi. If additional funding becomes available in the future, the DOE may consider including Maui High School in its list of schools for installing solar PV systems. These systems would help to power the campus, including the proposed new buildings.

3.14 PUBLIC SERVICES

See Figure 3.11 for locations of police stations, fire stations, educational facilities, medical services, and parks and recreation areas in relation to the project site.

3.14.1 EDUCATIONAL FACILITIES

The project site is located within the Maui High School property identified as TMK: (2) 3-8-007: 098 that is comprised of 73.5-acres. The project would be sited within an approximately 2.2-acre undeveloped area associated with this school property. Maui High School is part of the State DOE's Baldwin-Kekaulike-Maui Complex Area that generally includes most the central Maui region. The Maui High School complex includes Maui Waena Intermediate School, three elementary schools (Kahului, Lihikai, and Pōmaikaʻi), and the Kīhei public charter school. Maui High School serves the central and southeastern districts of the island that is an established, working class, suburban community of residences, small businesses, and light industry. The southeastern district is a newly built and generally transient community surrounded by large resorts and hotels. The high school offers extensive and varied programs for students in grades 9 to 12 and serves approximately 2,000 students.

Project Effects on Educational Facilities

The project should not have a long-term impact on the high school's existing programs, activities, and student enrollments. Other schools within the Maui High School complex are located a considerable distance away from the site and would not experience either long-term or short-term construction-related impacts.

Figure 3.11 : Public Services

The project site is located within a larger undeveloped area on the mauka (south) end of the high school campus and property. The project's new MCSA and lawn mower buildings and associated site would be fenced with a six-foot-tall chain-link fence to restrict and manage access between this use and the high school campus activities. This project would not include new residential housing or other land uses that would increase the resident population. Thus, there would be no increase in student enrollment or place additional demands on related educational facilities and faculty in the long-term.

Construction of the project would inevitably have a minor short-term effect on the high school due to site improvements, building construction, etc. Buildings E and L along with a maintenance building are situated nearest to the project site that may be affected.

However, other buildings are located further away within the large school property and should not be affected by construction activities. Such temporary effects may include additional noise from activities, fugitive from site improvements, and stormwater runoff.

Various minimization measures using standard construction BMPs would be incorporated into the project's design plans to minimize potential short-term effects. Design plans would incorporate structural and non-structural BMPs to address potential discharge of pollutants from stormwater before and after construction. Such measures would be instituted following site-specific assessments during the project's design phase.

Construction activities would inevitably result in minor to moderate noise impacts. The extent of these impacts would vary depending on the stage of construction, wind direction, specific equipment being used, distance to the receptor, and the duration of each activity. Therefore, the ability to control construction noise levels relates primarily to the duration and time of construction activity in any one day. However, the site does not require major cutting or filling activities that should reduce the use of large earthmoving equipment such as bulldozers. These construction-related noises may be audible at Buildings E and L located adjacent to the site. Building L would be the closest to the project site and is situated about 85 feet away.

BMPs in design plans would also include specifications to minimize the discharge of air pollutants before and after construction. BMPs for fugitive dust and engine emissions would be installed before construction and maintained throughout the construction period. Measures such as installing dust screens or wind barriers around the construction site, stabilizing, and covering materials, and the watering of exposed areas should help minimize potential affects.

Future use of the MCSA building by MHS would have a beneficial impact to the school in the future providing needed additional classroom and/or administrative space. The additional classrooms and office spaces have the potential to broaden MHS's academic programs and alleviate the issue of overcrowding in its existing classrooms.

3.14.2 RECREATIONAL FACILITIES

The nearest recreational facilities to the project site are the ballfields associated with the Maui High School Park located to the west that is part of the State DOE school property. This park includes baseball and softball fields, parking, and restroom supporting the community's recreational activities. The County's Kahului Park is located adjacent to the northern boundary of the Maui High School property and adjacent to Kahului Elementary School along Hina Avenue. This park includes baseball and softball fields, basketball courts, and picnic areas. Other public recreational facilities are located further away from the project site. Both parks are maintained by the County of Maui, Department of Parks and Recreation.

Project Effects on Recreational Facilities

The project should not have a long-term impact on the existing recreational facilities in the vicinity or activities conducted there. This project does not include new residential housing or other land uses that would increase the resident population that may place additional demand and increase congestion at public recreational facilities.

Construction of the project would inevitably have a minor short-term effect on the high school park site due to site improvements, building construction, etc. Kahului Park is located a considerable distance away and would not be affected. The ballfields associated with Maui High School Park are located nearest to the project site being about 250 feet away. Construction activities would typically occur on weekdays during normal business hours (e.g. 7:30 a.m. to 4:30 p.m.) and not occur on weekends. Thus, during school session, activities occurring at that park would occur after school and not have much conflict with construction activities. During the summer, construction activities should similarly not negatively impact or prevent recreational activities from occurring.

Such temporary effects may include additional noise from activities, fugitive from site improvements, and stormwater runoff. Various minimization measures using standard construction BMPs would be incorporated into the project's design plans to minimize potential short-term effects, and such plans would be reviewed by the County as part of ministerial permits obtained.

3.14.3 POLICE AND FIRE PROTECTION

The County of Maui Police Department serves Maui County which consists of six districts and three islands: Maui, Lānaʻi, and Molokaʻi. Four police stations are located on Maui Island: Wailuku Main Station, Hana Station, Kīhei Station, and Lahaina Station. Police service in the Kahului area is provided by the department's main station located at 55 Mahalani Street in Wailuku, approximately two miles from the project site.

The Maui County Department of Fire and Public Safety provides emergency and non-emergency services for the islands of Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe. There are 14 fire stations throughout Maui County, 10 of which are located on Maui Island. As shown in Figure 3.11, one fire station is located in Kahului at 200 Dairy Road. Response time to the project site from the Kahului Fire Station, a distance of about 1.5 miles, is estimated at 5 to

6 minutes. The second closest fire station is located about 3 miles away in Wailuku, with a response time of about 7 to 8 minutes.

Project Effects on Police and Fire Protection

The project should not have a significant long-term impact on the police and fire department's ability to provide protection services or their operations. The project involves relocating the existing MCSA and mower facilities to the new site. Therefore, there shouldn't be a significant change to the current level and demand for protection services that are already occurring. These facilities would be situated at a new site only about one mile away from their present location. This project does not include new residential housing or other land uses that would increase the resident population that may place additional demand on protection services.

Construction of the project would not have any short-term impact on the nearest police and fire stations that are located over one mile away. Temporary effects such as additional noise from activities, fugitive from site improvements, and stormwater runoff would thus not affect these stations or their operations. If an incident were to occur during construction activities that requires emergency attention, it is anticipated that the level of demand could be met by all these emergency and public safety services. Additionally, the State DOE will coordinate with the Maui County Department of Fire and Public Safety during the building permit review process to ensure that fire apparatus access, water supply for fire protection, and fire and life safety requirements are included where appropriate in design plans.

3.14.4 MEDICAL SERVICES

The closest health care and emergency facility to the project site is the Maui Memorial Medical Center located at 221 Mahalani Street in Wailuku. Maui Memorial Medical Center, operated by Maui Health and Kaiser Permanente, is the only acute care hospital on Maui Island. The medical center is about 2.5 miles west from the project site, with an estimated 8-minute drive to the facility.

Project Effects on Medical Facilities

The project should not have a long-term impact on the medical facilities. This project does not include new residential housing or other land uses that would increase the resident population that may place additional demand at this medical center and staff operating there.

Construction of the project would not have any short-term impact on this medical center as well due to the facility's location being several miles away. Temporary effects such as additional noise from activities, fugitive from site improvements, and stormwater runoff would thus not affect that medical center site.

3.15 SOCIOECONOMIC CHARACTERISTICS

3.15.1 POPULATION AND HOUSING

The County of Maui, accounting for about 11.4% of the State's population, has a resident population estimated to be about 164,351 according to the 2020 U.S. Census Bureau. As shown in Figure 3.12 the Kahului Census Designated Place (CDP) is the most populous CDP on Maui, with a population estimate of 28,219 in 2020 (USCB, 2020) and with about 8,150 housing units in Kahului in 2021 (USCB, 2021).

According to the 2022 state population estimates by the U.S. Census Bureau, the State resident population has declined by 0.48% or 19 people a day over the past year mainly due to residents moving out of the State (DBEDT, 2022). In addition, Maui County has followed state trends with an increase in the out-migration of residents resulting in a decrease in population at a rate of 0.1% a year.

The project site is located within the County's Wailuku-Kahului Community Plan Area which is expected to remain the economic and population center of Maui Island. The County's 2030 Socio-Economic Forecast has projected that the Wailuku-Kahului Community Plan Area will grow faster than other parts of the island, as former agriculture lands are developed into residential subdivisions (COM, 2012).

Between 2017 to 2021, 92.6% of the Maui County population over 25 years old was at least a high school graduate (USCB, 2021). Additionally, about 65.4% of the 16+ population was in the civilian labor force between 20117-2021.

Project Effects on Population and Housing

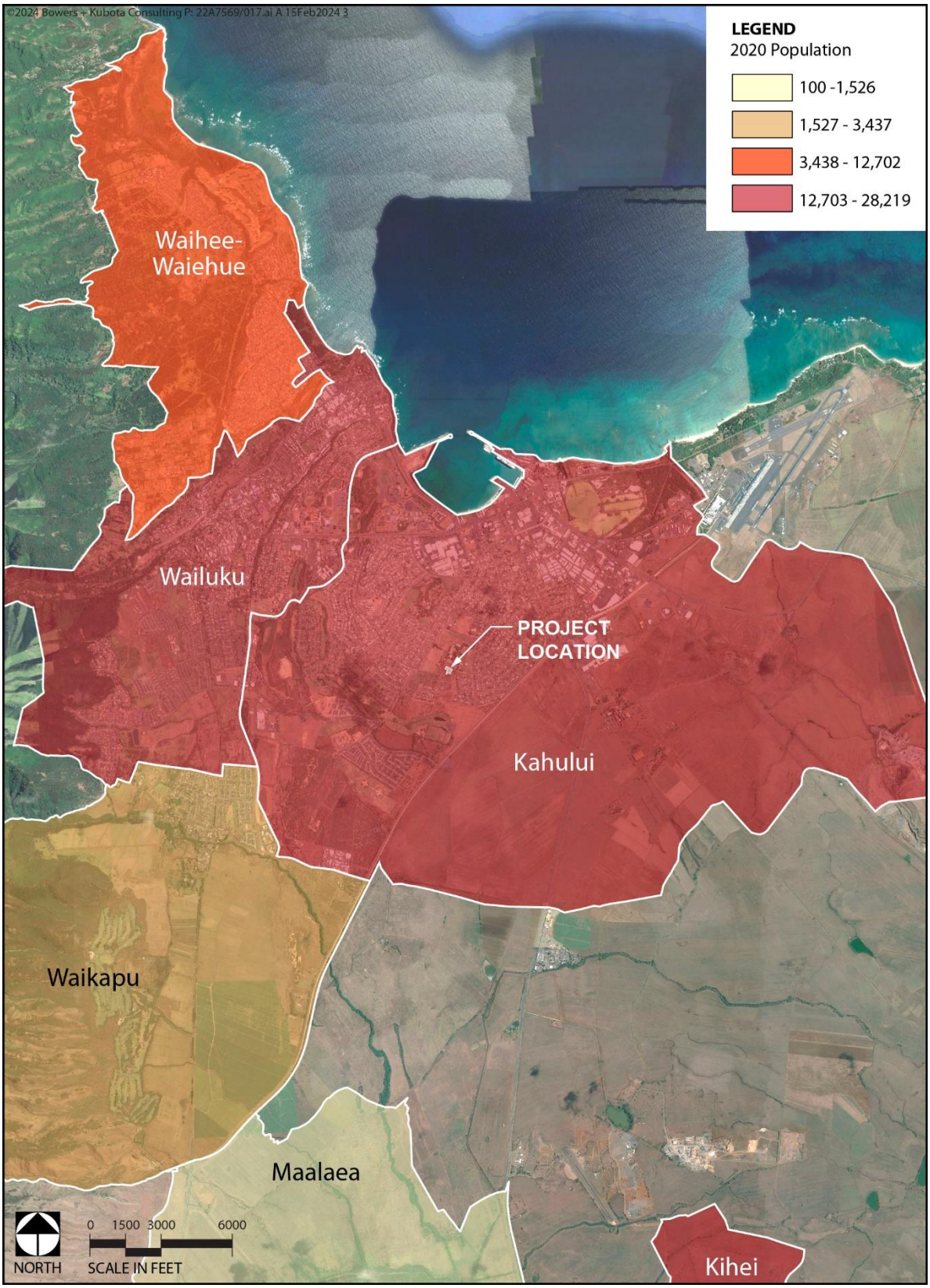
The project should not have an impact on population and housing conditions within the Kahului community or island wide. There are no new housing units or visitor units included under this project since it just involves relocating these existing operations to the new facilities on the project site. Therefore, the project would not add new resident or visitor populations to the area or influence future demographic trends projected for the region.

3.15.2 CHARACTER OF KAHULUI COMMUNITY

The Kahului community encompasses many of the island's civic and business centers serving both the Wailuku and Kahului regions of central Maui and includes the major seaport of Kahului Harbor and Kahului Airport. Wailuku continues to serve as the civic, financial, and cultural center while Kahului has developed into its role as the business and industrial center.

Most of Kahului's commercial and industrial uses are concentrated along the coastline area surrounding Kahului Harbor. Residential uses encompass the majority of uses inland (mauka) of these commercial and industrial uses. Surrounding outlying areas of urban Kahului are large tracts of agricultural lands associated with Central Maui.

Figure 3.12: Population



Project Effects on Community Character

As evident by the census data, a large number of the island's resident population is concentrated in the urban centers of this Kahului community. The residential districts surrounding the Kahului and Wailuku business centers are significantly different in character. Kahului's residential areas are generally newer, with wide curvilinear streets. Wailuku, however, is generally composed of older residential areas, intermixed with business uses, varying lot sizes, and street patterns representative of older subdivision designs. The Wailuku-Kahului region is also the cultural center of the island. Major educational and public facilities include Maui Community College, the War Memorial Center, community theaters, major sports facilities, and the central Keōpūolani Park.

In the vicinity of the project site are primarily residential uses consisting of mostly single-family subdivisions and some multi-family developments. These residential uses generally surround the Maui High School property which includes the project site along West Papa Avenue. Several parks are also present in the vicinity. The Dunes at Maui Lani Golf Course is located further inland (mauka) of the high school.

Development of the MCSA and mower facility within the high school property would not have a significant impact that greatly changes the character of the Kahului community or uses in the immediate project site vicinity. MCSA and the mower operations are already existing uses within the community being relocated from their present site that is located only about one-mile further north. These operations and activities would thus continue occurring within the Kahului community with the only difference being at the project site with new and improved facilities.

This project does not include new residential housing, visitor units, or other major land uses that would increase the resident or visitor population occurring in the Kahului community and change the character of the area around the project site. The project includes uses that are compatible with the large State-owned high school property. The mission of the MCSA is to provide basic, remedial, and continuing education opportunities, including information technology, for the adult and community population of Maui. These activities are thus complementary to other educational programs and activities occurring at the high school and wouldn't significantly change the character of that school property.

The McKinley School for Adults Maui Campus serves a majority of students from Maui County who are enrolled in the GED or High School Equivalency Test (HiSET). Instructional services in basic skills and Workforce Development Diploma Program are offered by MCSA to encourage an effective student transition to the labor force, military, and post-secondary education (MCSA, 2020). A 2020 Self Study conducted by MCSA has shown a school enrollment of 960 registrations at the Maui Campus in 2019 with majority of students being between 16-18 and 25-44 years old since 2017. Relocation of this program to the new temporary facility would have a positive benefit for the community by providing new and updated facilities for staff so that they can be more effective and efficient in operations and conducting programs.

Future use of the MCSA building by Maui High School would be beneficial to both MHS and the community in the future by providing updated facilities for local students and staff.

3.15.3 ECONOMIC AND FISCAL EFFECTS

The project would not have a significant long-term impact on economic conditions associated with Maui's economy because it essentially involves developing new facilities so that the present MCSA and State DOE lawn mower storage operations can be relocated to a new site. Therefore, there would not be a significant change in these operations in terms of staffing and activities that would noticeably impact economic conditions.

MCSA would continue to employee up to three full-time staff and up to 15 part-time staff at their new temporary facility. The MCSA may look to provide more classes and programs in the future to support the community using their new facilities. However, that situation would be evaluated over time based upon the community's need. If future additional classes are added, these are not expected to significantly increase present staff requirements. Perhaps a few more part-time staff may be added to support such classes. After the MCSA program relocates back to its original site in several years, existing MHS staff would support the school's academic programs in the new facility. If needed, the addition of new staff to aid these programs is anticipated to have a beneficial impact on the local economy.

The proposed DOE Mowers Facility will continue to employ up to three existing full-time staff. This condition would thus have minimal change and associated effect on the number of jobs, staff wages, and income that is spent within the local economy.

The project would have a minor short-term positive effect on both the City and State's economic and fiscal factors due to construction activities. Therefore, further discussion of these short-term effects is provided.

Short-Term Construction-Related Economic Effects

Construction activities would result in a short-term positive economic impact for Maui due to construction-related spending and employment. The estimated construction cost for this project of $9.0 million would create construction jobs during the duration of construction activities over an approximately 15-month period, as well as support industries that service construction activities directly and indirectly. Three broad types of jobs are distinguished below:

- Direct jobs are immediately involved with construction of a project or with its operations.
- Indirect jobs are created as businesses directly involved with a project purchase goods and services in the local economy.
- Induced jobs are created as workers spend their income for goods and services.

Direct construction jobs typically consist of on-site laborers, tradesmen, mechanical operators, supervisors, etc. These short-term jobs created would generate additional personal income for construction workers with wages paid directly to them or operational employees associated with construction activities.

Direct construction jobs created would also stimulate indirect and induced employment and spending of wages within other industries located in the Wailuku-Kahului district and elsewhere on the island, such as retail, restaurants, material distributors, and other related

businesses supporting the construction industry. Island residents employed within the construction industry would likely fill these construction jobs.

The project would create a small number of direct new jobs over the construction period. Therefore, the total employment impact (direct, indirect, induced) generated by this project over the construction period would create a relatively small but positive impact in employment for the island. These short-term construction jobs would generate additional personal income for construction workers employed. Indirect and induced income would also be generated from wages spent. This additional induced income would have a relatively minor positive impact to businesses and residents on the island.

Fiscal Effects of Project

Fiscal impacts would primarily involve additional tax revenue to the State from construction of this project. Tax revenue sources for State government are composed primarily of general excise taxes (GET) on development costs and construction materials, along with corporate income tax, and personal income tax from construction workers. The $9.0 million project construction budget expended would generate a relatively small amount of additional tax revenue to the State. These construction-related tax revenues would have a relatively minor positive effect on the State's fiscal condition because of the short-term increase in revenue associated with construction activities.

County revenues generated are primarily limited to tax revenues on privately-owned property and improvements, and to a lesser extent fees charged for various activities such as water, sewer, permits, etc. Because the project site is located within the State-owned Maui High School property, no additional revenue would be generated for the County from property taxes.

3.16 SECONDARY AND CUMULATIVE IMPACTS

3.16.1 SECONDARY EFFECTS

Secondary effects, also referred to as indirect effects or secondary impacts, are effects caused by an action that is later in time or farther removed in distance but is still reasonably foreseeable as defined under Hawai'i Administrative Rules Title 11-200.1-2 (2019). A secondary effect may include a growth-inducing effect and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems. Secondary impact assessments are concerned with impacts that are sufficiently "likely" to occur and not with the speculation of any impact that can be conceived of or imagined.

The project would not result in secondary impacts that would have significant or adverse long-term impacts on the natural and human environment including ecosystems, social-economic conditions, infrastructure, or public facilities. The construction of the MCSA and mower's facilities would not contribute to growth inducing effects or changes to resident population densities. There are no new housing units or visitor units included under this project. This project just involves relocating these existing operations to the new facilities on the project site. As a result, the operations occurring at the new site would be the same

as those already occurring at their present location only about one mile away within the urbanized community of Kahului.

Such growth inducing impacts are typically associated with more large-scale or intensive developments such as new residential subdivisions. New subdivisions would increase resident populations in the area and subsequently have a secondary impact by placing more demand on public facilities like schools and parks serving this area. The project does not include major commercial or industrial uses that could generate substantial secondary impacts from residents or visitors now traveling to this location and subsequently changing the community's character. The project would not induce additional development in the surrounding area such as higher density residential uses or generate economic stimulus for new commercial or industrial uses in the vicinity similar to redevelopment along transit lines. The Mower Facility is intended to support existing State landscape maintenance activities and the MCSA operations would remain the same, just at a new temporary location. Future use of the MCSA building by MHS is not expected to lead to secondary effects as the facility will continue to serve educational functions, will not necessitate additional residential development, and is unlikely to exert a greater adverse effect on natural resources.

3.16.2 CUMULATIVE IMPACTS

"Cumulative Impact" as defined in HAR §11-200.1-2 is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time associated with the study year. The focus is on "reasonably foreseeable" actions that are those likely to occur or probable rather than those that are merely possible or subject to speculation. The prediction of reasonably foreseeable impacts thus requires judgment based on information obtained from reliable sources such as approved development plans and land use entitlements received.

There are no other known developments in the immediate area that are reasonably anticipated to be completed within the 2025 study year and contribute to a cumulative impact on the project area's environment or infrastructure facilities serving this site and Maui High School. The discussion of impacts presented within this document has thus provided sufficient information to assist in addressing the applicable cumulative effects associated with the project because no other reasonably foreseeable future actions are being completed and operational within the project's 2025 study timeframe.

The discussion of impacts includes the full development of the project on the site, including the additional storage expansion area for the mower's facility. There are no phases planned for the incremental construction of improvements as the project would be funded, constructed in its entirety, and operational by the projected fall of 2025. The future possible expansion of the mower's facility would be a minor building addition to support their operations and would not result in any significant cumulative impacts on the environment.

4.0 RELATIONSHIP TO PLANS AND POLICIES

As a requirement of HAR §11-200.1-24 (2019), this chapter provides a description of the relationship and compatibility of the Proposed Action to other land use plans and policies. This chapter discusses the proposed project's conformance with pertinent State and County land use plans and policies, which include the State Land Use District regulations, State Environmental Policy (Chapter 344, HRS), and the regulations, policies, and goals set forth by the County's General Plan, and Special Management Area (Chapter 205A, HRS).

4.1 STATE OF HAWAIʻI PLANS AND POLICIES

4.1.1 HAWAII REVISED STATUTES CHAPTER 343

Hawaiʻi Revised Statutes (HRS) Chapter 343 is the environmental review law of the State of Hawaiʻi. HRS §343 applies to all agency or applicant actions that include one or more of the following triggers as identified in HRS §343-5(a):

1) Propose the use of state or county lands or the use of state or county funds;
2) Propose any use within any land classified as a conservation district by the state land use commission under chapter 205;
3) Propose any use within a shoreline area as defined in section 205A-41;
4) Propose any use within any historic site as designated in the National Register or Hawaiʻi Register, as provided for in the Historic Preservation Act of 1966, Public Law 89-665, or chapter 6E;
5) Propose any use within the Waikiki area of Oahu, the boundaries of which are delineated in the land use ordinance as amended, establishing the "Waikiki Special District";
6) Propose any amendments to existing county general plans where the amendment would result in designations other than agriculture, conservation, or preservation, except actions proposing any new county general plan or amendments to any existing county general plan initiated by a county;
7) Propose any reclassification of any land classified as a conservation district by the state land use commission under chapter 205;
8) Propose the construction of new or the expansion or modification of existing helicopter facilities within the State;
9) Propose any:
    a. Wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent;
    b. Waste-to-energy facility;
    c. Landfill;
    d. Oil refinery; or
    e. Power-generating facility.

DISCUSSION: The Proposed Action involves the use of State lands and funds. Therefore, the Draft and Final EA documents were prepared in accordance with Chapter 343 HRS, and HAR Title 11, Chapter 200.1.

4.1.1 STATE LAND USE DISTRICTS, CHAPTER 205, HRS

Hawai'i remains unique in the country with respect to the extent of control that the State exercises in land use regulation. Pursuant to Title 13, the State Land Use Law, Chapter 205 HRS, established the State Land Use Commission (LUC), which classified all lands in Hawai'i into four land use districts: Rural, Agricultural, Conservation, and Urban. Changes to these districts for areas less than 15-acres can be approved at the County level; larger modifications must be approved by the Land Use Commission by super-majority vote. Only the Land Use Commission can take land out of the Conservation District.

Permitted uses within the State Land Use Districts are prescribed under Title 13, Chapter 205, HRS, and the State LUC's Administrative Rules (HAR) prescribed under Title 15, Subtitle 3, Chapter 15, Land Use Commission Rules. Permitted activities or uses in the State Urban District are governed by ordinances or regulations of the County within which the urban district is situated.

DISCUSSION: As shown in Figure 4.1 the Proposed Action is within the State's Urban District. The Urban District is characterized by "city-like" concentrations of people, structures, and services, and includes vacant lands for future urban development.

Permitted uses or activities in the Urban District are thus regulated by the County and discussion of the project's relationship to County plans and zoning code are discussed later.

4.1.2 HAWAI'I STATE PLAN (HRS §226)

The Hawai'i State Plan, HRS Chapter 226, as amended, is a broad policy document that guides all activities, programs and decisions made by State and local agencies by establishing a set of themes, goals, objectives, and policies meant to guide the State's long-term growth and development. It contains diverse policies and objectives on topics of state interest including but not limited to, the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, and sustainability. The purpose of the plan is to: (1) improve the planning process; (2) increase the effectiveness of government and private actions; (3) improve coordination among agencies and levels of government; (4) provide for the use of Hawai'i's resources; and (5) guide the future development of the state.

The State Plan is divided into three parts. Part I, II, and III of the State Plan were reviewed to assess the project's consistency with statutes discussed in this plan. Part I of the Plan references Overall Theme, Goals, Objectives and Policies and Part III references the Priority Guidelines; because Part II pertains primarily to internal government affairs it is not applicable to the Proposed Action and was not addressed. The following sections in Table 4.1 discuss the project's consistency with applicable statutes and clarifies when it is in conflict with them. Policies listed as inapplicable to the project in the following discussion were determined to be inapplicable through analysis of project characteristics relative to each policy.

Figure 4.1: State Land Use Districts

Table 4.1
Hawai'i State Plan Objectives and Policies

HAWAI'I STATE PLAN, CHAPTER 226, HRS **(Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)**	**C**	**I**	**N/A**
PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES			
HRS § 226-1: Findings and Purpose			
HRS § 226-2: Definitions			
HRS § 226-3: Overall Theme.			

Hawai'i's people, as both individuals and groups, generally accept and live by a number of principles or values which are an integral part of society. This concept is the unifying theme of the state plan. The following principles or values are established as the overall theme of the Hawai'i state plan:

(1) Individual and family self-sufficiency refers to the rights of people to maintain as much self-reliance as possible. It is an expression of the value of independence, in other words, being able to freely pursue personal interests and goals. Self-sufficiency means that individuals and families can express and maintain their own self-interest so long as that self-interest does not adversely affect the general welfare. Individual freedom and individual achievement are possible only by reason of other people in society, the institutions, arrangements and customs that they maintain, and the rights and responsibilities that they sanction.

(2) Social and economic mobility refers to the right of individuals to choose and to have the opportunities for choice available to them. It is a corollary to self-sufficiency. Social and economic mobility means that opportunities and incentives are available for people to seek out their own levels of social and economic fulfillment.

(3) Community or social well-being is a value that encompasses many things. In essence, it refers to healthy social, economic, and physical environments that benefit the community as a whole. A sense of social responsibility, of caring for others and for the well-being of our community and of participating in social and political life, are important aspects of this concept. It further implies the aloha spirit--attitudes of tolerance, respect, cooperation and unselfish giving, within which Hawai'i's society can progress.

One of the basic functions of our society is to enhance the ability of individuals and groups to pursue their goals freely, to satisfy basic needs and to secure desired socio-economic levels. The elements of choice and mobility within society's legal framework are fundamental rights. Society's role is to encourage conditions within which individuals and groups can approach their desired levels of self-reliance and self-determination. This enables people to gain confidence and self-esteem; citizens contribute more when they possess such qualities in a free and open society.

Government promotes citizen freedom, self-reliance, self-determination, social and civic responsibility and goals achievement by keeping order, by increasing cooperation among many diverse individuals and groups, and by fostering social and civic responsibilities that affect the general welfare. The greater the number and activities of individuals and groups, the more complex government's role becomes. The function of government, however, is to assist citizens in attaining their goals. Government provides for meaningful participation by the people in decision-making and for effective access to authority as well as an equitable sharing of benefits. Citizens have a responsibility to work with their government to contribute to society's improvement. They must also conduct their activities within an agreed-upon legal system that protects human rights.

Discussion: The proposed project is consistent with the State Plan's guiding principles and values. These principles and values concern individual and family self-sufficiency; social and economic mobility; and community or social wellbeing. The project supports these principles and values as it provides for the continued and improved operations of DOE lawnmowers facility and MCSA Maui Campus program. The project would ensure that DOE staff and students of the MCSA Maui Campus and Mowers Facility are provided with the necessary facilities for their employment and educational programs needed to be self-sustainable. The improvements described in the Proposed Action would ensure that both DOE staff and MCSA students on Maui can continue to pursue their individual goals freely and to satisfy their basic education and employment needs, which would improve the social and economic mobility and well-being of Maui residents. This Proposed Action would assist citizens in attaining those goals. Future use of the MCSA building by Maui High School would also support these values as the new facility would support the high school student's educational well-being.

HRS § 226-4: State Goals.			
In order to ensure, for present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:			
Goals:			
(1) A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawai'i's present and future generations.	**X**		
(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.			**X**
(3) Physical, social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring and of participation in community life.	**X**		
Discussion: The project improvements will support the State's goal of achieving a strong, viable economy as it will promote the timely continuation and improve the operations of the DOE lawnmower and MCSA Maui Campus education and workforce development programs. Relocating these facilities promotes the State's goal of supporting resident's social and economic well-being, particularly for DOE staff and benefactors of these programs such as students of the MCSA program.			
HRS § 226-5: Objectives and policies for population.			
(a) Objective: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.			
(b) Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.			**X**
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			**X**
(3) Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.			**X**
(4) Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.			**X**
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			**X**
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			**X**
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			**X**
§226-6 Objectives and policies for the economy--in general.			
(a) Objective: Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			**X**
(*2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.*			**X**

(b) Policies:			
(1) Promote and encourage entrepreneurship within Hawai'i by residents and nonresidents of the State.			**X**
(2) Expand Hawai'i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			**X**
(3) Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.			**X**
(4) Transform and maintain Hawai'i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			**X**
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawai'i.			**X**
(6) Seek broader outlets for new or expanded Hawai'i business investments.			**X**
(7) Expand existing markets and penetrate new markets for Hawai'i's products and services.			**X**
(8) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.			**X**
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.	**X**		
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.			**X**
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			**X**
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawai'i.			**X**
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.			**X**
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			**X**
(15) Maintain acceptable working conditions and standards for Hawai'i's workers.	**X**		
(16) Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.			**X**
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			**X**
(18) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.			**X**
(19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			**X**
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.	**X**		
(21) Foster a business climate in Hawai'i--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			**X**
Discussion: The relocation and improvement of the proposed facilities would contribute to short-term construction activities for Maui's economic growth. Additionally, these DOE facilities would improve working conditions and standards for DOE staff and faculty. Relocating the MCSA Maui Campus program would allow the DOE to continue to provide needed adult education and workforce development programs on Maui.			

§226-7 Objectives and policies for the economy--agriculture.			
(a) Objective: Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawai‘i's sugar and pineapple industries.			**X**
(2) Growth and development of diversified agriculture throughout the State.			**X**
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawai‘i's strategic, economic, and social well-being.			**X**
(b) Policies:			
(1) Establish a clear direction for Hawai‘i's agriculture through stakeholder commitment and advocacy.			**X**
(2) Encourage agriculture by making the best use of natural resources.			**X**
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.			**X**
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			**X**
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai‘i's economy.			**X**
(6) Seek the enactment and retention of federal and state legislation that benefits Hawai‘i's agricultural industries.			**X**
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai‘i's food producers and consumers in the State, nation, and world.			**X**
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			**X**
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			**X**
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			**X**
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			**X**
(12) In addition to the State's priority on food, expand Hawai‘i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			**X**
(13) Promote economically competitive activities that increase Hawai‘i's agricultural self-sufficiency, including the increased purchase and use of Hawai‘i-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			**X**
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			**X**
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			**X**
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			**X**
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i‘a, māla, and irrigated lo‘i, and growth of traditional Hawaiian crops, such as kalo, ‘uala, and ‘ulu.			**X**
(18) Increase and develop small-scale farms.			**X**
§226-8 Objective and policies for the economy--visitor industry.			
(a) Objective: Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai‘i's economy.			

(b) Policies:			
(1) Support and assist in the promotion of Hawai'i's visitor attractions and facilities.			**X**
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people.			**X**
(3) Improve the quality of existing visitor destination areas by utilizing Hawai'i's strengths in science and technology.			**X**
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			**X**
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai'i's people.			**X**
(6) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			**X**
(7) Foster a recognition of the contribution of the visitor industry to Hawai'i's economy and the need to perpetuate the aloha spirit.			**X**
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai'i's cultures and values.			**X**
§226-9 Objective and policies for the economy--federal expenditures.			
(a) Objective: Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.			
(b) Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment;			**X**
(2) Promote Hawai'i's supportive role in national defense, in a manner consistent with Hawai'i's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawai'i's economy;			**X**
(3) Promote the development of federally supported activities in Hawai'i that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment;			**X**
(4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service;			**X**
(5) Promote federal use of local commodities, services, and facilities available in Hawai'i;			**X**
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i; and			**X**
(7) Pursue the return of federally controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			**X**
§226-10 Objective and policies for the economy--potential growth and innovative activities.			
(a) Objective: Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai'i's economic base.			***X***
(b) Policies:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawai'i's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;			**X**
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawai'i through the export of services or products or substitution of imported services or products;			**X**

(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			**X**
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;			**X**
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus;			**X**
(6) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people;			**X**
(7) Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;	**X**		
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste;			**X**
(9) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State;			**X**
(10) Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawai'i's social, economic, physical, and environmental objectives;			**X**
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			**X**
(12) Develop, promote, and support research and educational and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i;	**X**		
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawai'i;			**X**
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai'i's social, economic, physical, and environmental objectives;			**X**
(15) Increase research and development of businesses and services in the telecommunications and information industries;			**X**
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			**X**
(17) Recognize and promote health care and health care information technology as growth industries.			**X**
Discussion: The Proposed Action is consistent with these policies. It advances items (b)(7) and (12) through the temporary relocation and development of DOE's MCSA Maui Campus facility which provides several higher education and workforce development programs to students on Maui. Continuing to provide MCSA programs would help to develop and support its educational and workforce development programs would stimulate economic activities on Maui. Future use of the MCSA facility by Maui High School would provide additional new space to support its educational programs.			
§226-10.5 Objectives and policies for the economy--information industry.			
(a) Objective: Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region.			**X**
(b) Policies:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawai'i and between Hawai'i and the world, and make high speed communication available to all residents and businesses in Hawai'i;			**X**

(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth and innovation in Hawai'i's economy;			**X**
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i;			**X**
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawai'i, using technology to communicate with their headquarters, offices, or customers located out-of-state;			**X**
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;			**X**
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people;			**X**
(7) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the information industry;			**X**
(8) Foster a recognition of the contribution of the information industry to Hawai'i's economy; and			**X**
(9) Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.			**X**
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.			
(a) Objective: Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawai'i's land-based, shoreline, and marine resources.	**X**		
(2) Effective protection of Hawai'i's unique and fragile environmental resources.	**X**		
(b) Policies:			
(1) Exercise an overall conservation ethic in the use of Hawai'i's natural resources.	**X**		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	**X**		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	**X**		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.			**X**
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			**X**
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.			**X**
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			**X**
(8) Pursue compatible relationships among activities, facilities, and natural resources.	**X**		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	**X**		
Discussion: The Proposed Action is consistent with these objectives and policies. It advances items (a)(1) and (2) and (b)(1), (2), (3), (8), and (9) through the design of the proposed facilities and best management practices to be used to mitigate impacts to land, shoreline, and marine resources during construction and operation. The project does not propose construction of buildings or structures and would involve the use of shoreline and/or marine resources or an increase in demand for natural resources. The project would not increase demand for or impact groundwater resources. Improvements would not inhibit access to natural or cultural resources in the area.			

§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.			
(a) Objective: Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.			
(b) Policies:			
(1) Promote the preservation and restoration of significant natural and historic resources.	**X**		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			**X**
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	**X**		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.	**X**		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.			**X**
Discussion: The Proposed Action is consistent with these objectives and policies. It advances items (a) and (b)(1), (3), and (4) through the design of the proposed facilities and best management practices to be used to minimize impacts to scenic views and the area's natural and historic resources during construction and operation. The project would adhere to the recommendations set forth in the LRFI prepared in support of this Draft EA. These recommendations are discussed in Chapter 3.9. Should any historic or archaeological sites or remains be discovered on-site, all construction work would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.			
§226-13 Objectives and policies for the physical environment--land, air, and water quality.			
(a) Objective: Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:			
(1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.	**X**		
(2) Greater public awareness and appreciation of Hawai'i's environmental resources.			**X**
(b) Policies:			
(1) Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.			**X**
(2) Promote the proper management of Hawai'i's land and water resources.	**X**		
(3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.	**X**		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.	**X**		
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	**X**		
(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	**X**		
(7) Encourage urban developments in close proximity to existing services and facilities.	**X**		
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.			**X**
Discussion: The Proposed Action is consistent with these objectives and policies. It advances items (a)(1) and (b)(2), (3), (4), (5), (6), and (7) through the design of the proposed facilities and best management practices to be used to mitigate impacts to land, air, and water quality during construction and operation. Relocating the facilities to the proposed project site would not negatively impact the quality of the surrounding environment's land, air, and water resources. The project would not increase the risk or vulnerability of the site and the surrounding area to natural disasters or hazards. The project would be situated within an existing urban environment.			
§226-14 Objective and policies for facility systems--in general.			
(a) Objective: Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise			

adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.			
(b) Policies:			
(1) Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	**X**		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	**X**		
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	**X**		
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			**X**
(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.	**X**		
(6) Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities.			**X**
Discussion: The Proposed Action is consistent with these objectives and policies. It advances items (a) and (b)(1)(2), (3), and (5) through the design of the proposed facilities and the use of best management practices to achieve the policies for State facility systems. The project would be in consonance with state and county plans and would support the needs of the DOE. The location and design of the facilities would not be vulnerable to nor contribute to sea level rise, flooding, and natural hazards in the area.			
§226-15 Objectives and policies for facility systems--solid and liquid wastes.			
(a) Objective: Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			**X**
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.			**X**
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.			**X**
(b) Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.			**X**
(2) Promote reuse and recycling to reduce solid and liquid wastes and employ a conservation ethic.			**X**
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			**X**
§226-16 Objective and policies for facility systems--water.			
(a) Objective: Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.			
(b) Policies:			
(1) Coordinate development of land use activities with existing and potential water supply.			**X**
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			**X**
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.			**X**
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			**X**
(5) Support water supply services to areas experiencing critical water problems.			**X**
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			**X**
§226-17 Objectives and policies for facility systems--transportation.			
(a) Objective: Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			

(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			**X**
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			**X**
(b) Policies:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			**X**
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			**X**
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			**X**
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			**X**
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			**X**
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			**X**
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			**X**
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			**X**
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			**X**
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment;			**X**
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			**X**
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			**X**
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			**X**
§226-18 Objectives and policies for facility systems--energy.			
(a) Objective: Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			**X**
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawai'i's dependence on imported fuels for electrical generation and ground transportation;			**X**
(3) Greater diversification of energy generation in the face of threats to Hawai'i's energy supplies and systems;			**X**
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			**X**
(5) Utility models that make the social and financial interests of Hawai'i's utility customers a priority.			**X**
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand.			
(b) Policies:			
(1) Support research and development as well as promote the use of renewable energy sources;			**X**
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			**X**

(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			**X**
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including: *(A) Development of cost-effective demand-side management programs;* *(B) Education;* *(C) Adoption of energy-efficient practices and technologies; and* *(D) Increasing energy efficiency and decreasing energy use in public infrastructure;*			**X**
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies;			**X**
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			**X**
(7) Promote alternate fuels and transportation energy efficiency;			**X**
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			**X**
(9) Support actions that reduce, avoid, or sequester Hawai'i's greenhouse gas emissions through agriculture and forestry initiatives;			**X**
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			**X**
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			**X**
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawai'i.			**X**
§226-18.5 Objectives and policies for facility systems--telecommunications.			
(a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			
(b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.			
(b) Policies:			
(1) Facilitate research and development of telecommunications systems and resources;			**X**
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			**X**
(3) Promote efficient management and use of existing telecommunications systems and services; and			**X**
(4) Facilitate the development of education and training of telecommunications personnel.			**X**
§226-19 Objectives and policies for socio-cultural advancement--housing.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
(1) Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more rental and for sale affordable housing is made available to extremely low-, very low-, lower-, moderate-, and above moderate-income segments of Hawai'i's population.			**X**
(2) The orderly development of residential areas sensitive to community needs and other land uses.			**X**
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.			**X**

(b) Policies:			
(1) Effectively accommodate the housing needs of Hawai'i's people.			**X**
(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower-, moderate-, and above moderate-income households.			**X**
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			**X**
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			**X**
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			**X**
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			**X**
(7) Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.			**X**
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai'i.			**X**
§226-20 Objectives and policies for socio-cultural advancement--health.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.			**X**
(2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.			**X**
(3) Elimination of health disparities by identifying and addressing social determinants of health.			**X**
(b) Policies:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			**X**
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			**X**
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			**X**
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			**X**
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.			**X**
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			**X**
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			**X**
§226-21 Objective and policies for socio-cultural advancement--education.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.			
(b) Policies:			

(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.	**X**		
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	**X**		
(3) Provide appropriate educational opportunities for groups with special needs.	**X**		
(4) Promote educational programs which enhance understanding of Hawai'i's cultural heritage.			**X**
(5) Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.	**X**		
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.	**X**		
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.	**X**		
(8) Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.	**X**		
(9) Support research programs and activities that enhance the education programs of the State.			**X**
Discussion: The Proposed Action is consistent with these objectives and policies. It advances items (a) and (b)(1), (2), (3), (5), (6), (7), and (8) through the relocation of DOE's MCSA Maui Campus program which provides higher education and workforce development programs to the adult population on Maui. The temporary relocation of this DOE program would ensure that adequate and accessible educational services and opportunities for adults would continue to be provided on Maui. Future use of the MCSA building by Maui High School would provide new additional spaces to support its educational programs.			
§226-22 Objective and policies for socio-cultural advancement--social services.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.			
(b) Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			**X**
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			**X**
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai'i's communities.			**X**
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			**X**
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			**X**
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			**X**
§226-23 Objective and policies for socio-cultural advancement--leisure.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			
(b) Policies:			
(1) Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.			**X**
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.			**X**

(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			**X**
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.			**X**
(5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.			**X**
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			**X**
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.			**X**
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			**X**
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.			**X**
(10) Assure adequate access to significant natural and cultural resources in public ownership.			**X**
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			
(b) Policies:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			**X**
(2) Uphold and protect the national and state constitutional rights of every individual.			**X**
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			**X**
(4) Ensure equal opportunities for individual participation in society.			**X**
§226-25 Objective and policies for socio-cultural advancement--culture.			
(a) Objectives: Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.			
(b) Policies:			
(1) Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.			**X**
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.			**X**
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.			**X**
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.			**X**
§226-26 Objectives and policies for socio-cultural advancement--public safety.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.			**X**
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			**X**
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people.			**X**

(b) Policies:			
(1) Ensure that public safety programs are effective and responsive to community needs.			**X**
(2) Encourage increased community awareness and participation in public safety programs.			**X**
(c) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			**X**
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			**X**
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			**X**
(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			**X**
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			**X**
(2) Enhance the coordination between emergency management programs throughout the State.			**X**
§226-27 Objectives and policies for socio-cultural advancement--government.			
(a) Objective: Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.	**X**		
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			**X**
(b) Policies:			
(1) Provide for necessary public goods and services not assumed by the private sector.	**X**		
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			**X**
(3) Minimize the size of government to that necessary to be effective.			**X**
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai‘i.			**X**
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			**X**
(6) Provide for a balanced fiscal budget.			**X**
(7) Improve the fiscal budgeting and management system of the State.			**X**
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			**X**
Discussion: The proposed Mowers Facility supports DOE in providing necessary government services that would maintain its facilities on Maui. The proposed MCSA facility supports DOE in providing necessary educational and workforce development services to the adult population on Maui.			
HAWAI‘I STATE PLAN, CHAPTER 226, HRS PART III. PRIORITY GUIDELINES			
HRS §226-101: Purpose. *The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.*			
HRS §226-102: Overall direction. *The State shall strive to improve the quality of life for Hawai‘i's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.*			
HRS §226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai‘i's people and achieve a stable and diversified economy:			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			**X**
(A) Encourage investments which:			

(i) Reflect long-term commitments to the State;			**X**
(ii) Rely on economic linkages within the local economy;			**X**
(iii) Diversify the economy;			**X**
(iv) Reinvest in the local economy;			**X**
(v) Are sensitive to community needs and priorities; and			**X**
(vi) Demonstrate a commitment to provide management opportunities to Hawai'i residents; and			**X**
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			
(i) Present or former residents acting as entrepreneurs or principals;			**X**
(ii) Academic support from an institution of higher education in Hawai'i;			**X**
(iii) Investment interest from Hawai'i residents;			**X**
(iv) Resources unique to Hawai'i that are required for innovative activity; and			**X**
(v) Complementary or supportive industries or government programs or projects.			**X**
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			**X**
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			**X**
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			**X**
(5) Streamline the processes for building and development permit and review and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety, and welfare would not be adversely affected.			**X**
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawai'i's small-scale producers, manufacturers, and distributors.			**X**
(7) Continue to seek legislation to protect Hawai'i from transportation interruptions between Hawai'i and the continental United States.			**X**
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			**X**
(A) An industry that can take advantage of Hawai'i's unique location and available physical and human resources.			**X**
(B) A clean industry that would have minimal adverse effects on Hawai'i's environment.			**X**
(C) An industry that is willing to hire and train Hawai'i's people to meet the industry's labor needs at all levels of employment.			**X**
(D) An industry that would provide reasonable income and steady employment.			**X**
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai'i business.			**X**
(10) Enhance the quality of Hawai'i's labor force and develop and maintain career opportunities for Hawai'i's people through the following actions:	**X**		
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			**X**
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.	**X**		
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.	**X**		
(D) Promote career opportunities in all industries for Hawai'i's people by encouraging firms doing business in the State to hire residents.			**X**

(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the-job training opportunities.			**X**
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			**X**
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			
(1) Promote visitor satisfaction by fostering an environment which enhances the aloha spirit and minimizes inconveniences to Hawai'i's residents and visitors.			**X**
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			**X**
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			**X**
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.			**X**
(5) Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.			**X**
(6) Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.			**X**
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			**X**
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			**X**
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			**X**
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			**X**
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.			**X**
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			**X**
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			**X**
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			**X**
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			**X**
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			**X**
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community.			**X**
(6) Seek favorable freight rates for Hawai'i's agricultural products from interisland and overseas transportation operators.			**X**
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			**X**
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			**X**

(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			**X**
(10) Support the continuation of land currently in use for diversified agriculture.			**X**
(11) Encourage residents and visitors to support Hawai'i's farmers by purchasing locally grown food and food products.			**X**
(e) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			**X**
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			**X**
(3) Increase the support for research and development of economically feasible alternative water sources.			**X**
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			**X**
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			**X**
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			**X**
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			**X**
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			**X**
(g) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability, that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawai'i.			**X**
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			**X**
(3) Encourage the development of small businesses in the information field such as software development; the development of new information systems, peripherals, and applications; data conversion and data entry services; and home or cottage services such as computer programming, secretarial, and accounting services.			**X**
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			**X**
(5) Encourage research activities, including legal research in the information and telecommunications fields.			**X**
(6) Support promotional activities to market Hawai'i's information industry services.			**X**
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			**X**
Discussion: As previously noted, the proposed project would include the temporary relocation and improvement of its MCSA Maui Campus facilities. This Proposed Action would support MCSA's educational and workforce development programs which would train and prepare its students for higher education or the workforce. Future use of the facility by Maui High School would also support its educational programs.			
HRS §226-104 Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution:			
(1) Encourage planning and resource management to ensure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.			**X**

(2) Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.			**X**
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			**X**
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			**X**
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			**X**
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			**X**
(7) Support the development of high technology parks on the neighbor islands.			**X**
(b) Priority guidelines for regional growth distribution and land resource utilization:			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.	**X**		
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			**X**
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			**X**
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			**X**
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			**X**
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			**X**
(7) Pursue rehabilitation of appropriate urban areas.			**X**
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			**X**
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	**X**		
(10) Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.	**X**		
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			**X**
(12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	**X**		
(13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	**X**		
Discussion: The Proposed Action and project site would be within the urban core of Kahului and would not impact critical environmental areas or resources. Any archaeological or historic sites inadvertently found on the site would be protected from damage. The construction team would work with SHPD to identify appropriate mitigation measures.			
HRS §226-105 Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			

(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			**X**
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			**X**
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			**X**
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			**X**
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			**X**
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			**X**
HRS §226-106 Affordable housing.			
Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land, urban land, and public land to meet housing needs of extremely low-, very low-, lower-, moderate-, and above moderate-income households.			**X**
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			**X**
(3) Improve information and analysis relative to land availability and suitability for housing.			**X**
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawai'i's extremely low-, very low-, lower-, and moderate-income households and residents with special needs.			**X**
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai'i's people for the purchase of initial owner-occupied housing.			**X**
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			**X**
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			**X**
(8) Give higher priority to the provision of quality housing that is affordable for Hawai'i's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.			**X**
HRS §226-107 Quality education.			
Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;	**X**		
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;	**X**		
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education workforce;	**X**		
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;			**X**
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:	**X**		
(A) The electronic exchange of information;			**X**
(B) Statewide electronic mail; and			**X**
(C) Access to the Internet.	**X**		
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			**X**

(6) Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific;			**X**
(7) Develop resources and programs for early childhood education;			**X**
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			**X**
(9) Strengthen and expand educational programs and services for students with special needs.			**X**
Discussion: The Proposed Action is consistent with the priority guidelines for quality education. It advances items (1), (2), (3), and (5) through the temporary relocation and development of DOE's MCSA Maui Campus facility which provides higher education and workforce development programs to adult residents on Maui. Included in the proposed MCSA facility are modern classrooms, testing center, and a computer room that would assist in strengthening and expanding student programs. Future use of this facility by Maui High School would support the promotion of quality education with the expansion of its educational spaces.			
HRS §226-108 Sustainability.			
Priority guidelines and principles to promote sustainability shall include:			
(1) Encouraging balanced economic, social, community, and environmental priorities;	**X**		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;	**X**		
(3) Promoting a diversified and dynamic economy;			**X**
(4) Encouraging respect for the host culture;			**X**
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;	**X**		
(6) Considering the principles of the ahupuaa system; and			**X**
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i.			**X**
Discussion: The proposed project seeks to balance the needs of the DOE as well as the needs of the surrounding community and the environment. The Proposed Action would meet the needs of the DOE, its staff, and the students of the MCSA program with the immediate relocation of the Mowers Facility and MCSA facility.			
HRS §226-109 Climate change adaptation priority guidelines.			
Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			
(1) Ensure that Hawai'i's people are educated, informed, and aware of the impacts climate change may have on their communities;			**X**
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;			**X**
(3) Invest in continued monitoring and research of Hawai'i's climate and the impacts of climate change on the State;			**X**
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;			**X**
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;			**X**
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;			**X**
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;			**X**
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;			**X**

(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and			**X**
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.			**X**

4.1.3 CHAPTER 344, HRS, STATE ENVIRONMENTAL POLICY

Chapter 344, HRS outlines the State's Environmental Policy that establishes State guidelines for encouraging a balanced and productive relationship between people and the environment. The following discusses the project's conformance and consistency with the pertinent goals, policies, and guidelines described under Chapter 344, HRS, Hawai'i State Environmental Policy.

Section 344-3(1). *Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.*

Discussion: The project would not result in an adverse impact on the State's natural resources and environmental characteristics. The project would inevitably involve some temporary land-disturbing activities that could cause minor short-term effects and nuisances. BMPs as described in Section 3.1.3 will be adhered to during excavation and grading activities to minimize soil loss and erosion, preserving existing coastal water conditions. The project would not have adverse impacts on land or water as no major geographical features or surface water bodies are present on the site. New structures and site improvements constructed would increase the number of impervious areas within the currently undeveloped site, but this small 1-acre increase in impervious surface should have minimal impact on the underlying aquifer in terms of groundwater recharge. In addition, because the project involves relocating existing facilities, water demand from these operations should generally remain the same.

The surrounding air quality would remain at existing levels upon completion of the project as future traffic conditions from the project should remain satisfactory and is not expected to result in excessive congestion that would lead to high vehicular emissions. The project would alter existing views from West Papa Avenue of the heavily vegetated and overgrown area as the site would be cleared and improved with a landscaped facility. This change should not have a significant long-term impact on views because the site currently lacks distinctive or noteworthy visual qualities. While no nonnative fauna species were observed onsite, it is possible that seabirds like the Hawaiian petrel and threatened Newell's shearwater may fly over the project area at night. BMPs and mitigation measures identified in Section 3.6.2 will be adhered to during the construction and operation of the project. The project would lead to the clearing of nonnative vegetation within the project site to allow

for the construction of the facilities. However, the elimination of these nonnative flora would not affect the distribution or survival of these species as these plants are common throughout the islands. In addition, BMPs as discussed in Section 3.6.1 would include the use of appropriate native Hawaiian plants or non-invasive plants to the extent possible for landscaped areas within the project.

Section 344-3(2). *Enhance the quality of life by:*

> ***(B)*** *Creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;*
>
> ***(C)*** *Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian;*

Discussion: The proposed project would relocate the DOE lawnmowers facility and MCSA Maui Campus operations to another site, thereby, preserving jobs of DOE employees of these facilities. The immediate relocation and improved facilities for the MCSA Maui Campus program would lead to a continuation of providing quality educational and workforce development programs to the adult community on Maui. Future use of the MCSA facility by Maui High School may include additional staff to support the expansion of its educational programs to this space and would have a beneficial impact on the economy.

4.1.4 GUIDELINES, CHAPTER 344, HRS, STATE ENVIRONMENTAL POLICY

The State Environmental Policy includes guidelines to facilitate attainment of policy objectives involving the conservation of Hawai'i's natural resources and the enhancement of the quality of life of the state's peoples. The following discussion evaluates the project's consistency with pertinent guidelines of the State Environmental Policy.

(9). *Education and culture.*

> ***(B)*** *Encourage both formal and informal environmental education to all age groups.*

Discussion: The proposed project aligns with the education and culture guidelines of the State Environmental Policy as it would include the relocation and improvement of the DOE MCSA Maui Campus facilities. This Proposed Action would lead to the continued operation and provision of educational opportunities to the adult population on Maui. Future use of the MCSA facility by Maui High School would support its future educational programs.

(10). *Citizen participation.*

> ***(B)*** *Provide for expanding citizen participation in the decision-making process so it continually embraces more citizens and more issues.*

Discussion: Chapter 5 includes a discussion on the efforts undertaken to provide the community and agencies with an opportunity to review and comment on this project consistent with this policy. Pre-assessment consultation and Draft EA notification letters have been distributed to various stakeholders soliciting their input in the preparation of this document. The publication and processing of this environmental document allows for

information to be distributed to the public and for public participation to address comments and concerns associated with the project.

4.1.5 STATE COASTAL ZONE MANAGEMENT PROGRAM, CHAPTER 205A, HRS

The Hawai'i Coastal Zone Management (CZM) Program was enacted in 1977 through the passage of HRS Chapter 205A. Administered by the State Office of Planning and Sustainable Development, HRS 205A and the CZM Program is intended to be a coordinated program that systematized Federal, State, and County agency efforts in the comprehensive management of Hawai'i's coastal resources. Each of the four counties in Hawai'i are responsible for administering the program for their jurisdiction through the Special Management Area (SMA) permitting system. The SMA was established to regulate any use, activity, or operation of all "developments" along the shoreline to preserve, protect, and where possible, to restore the natural resources of the coastal zone, and that they comply with CZM objectives, policies, and guidelines. SMA boundaries are delineated for each county as areas where development needs to be regulated to protect coastal resources.

The overall objectives of the CZM Program are to provide the public with coastal recreational opportunities, protect historic resources, protect scenic and open space resources, protect coastal ecosystems, provide facilities for economic development, reduce coastal hazards and manage development.

SMA DISCUSSION: As shown in Figure 4.2, the project site is not located within the SMA and not within or adjacent to the shoreline area. Therefore, according to HRS 205A, the Proposed Action would not need to obtain an SMA permit. However, since there is an interrelated connection between activities on-land and the coastal environment, BMP measures, as mentioned throughout Chapter 3.0, would be utilized during the project's construction to minimize impacts to the coastal zone, in particular, for stormwater management.

A discussion of the project's consistency with the CZM objectives and policies is in the following sections.

Figure 4.2: Special Management Area

§205A – COASTAL ZONE MANAGEMENT PROGRAM: OBJECTIVES & POLICIES

1.) RECREATIONAL RESOURCES

Objectives:

Provide coastal recreational opportunities accessible to the public.

Policies:

(A) Improve coordination and funding of coastal recreational planning and management; and

(B) Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

(ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting that dedication against the requirements of section 46-6.

DISCUSSION: The project does not conflict with this objective and these policies. The Proposed Action does not include any coastal development or activities, therefore, there are no anticipated impacts to coastal recreational resources, nor would the project restrict access to the shoreline. The Proposed Action would include standard construction BMPs, as discussed in Chapter 3.1, to minimize potential discharge of pollutants from stormwater before and after construction.

2.) HISTORIC RESOURCES

Objectives:

Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

DISCUSSION: The construction of the project would adhere to the objectives and policies for historic resources. Measures proposed as discussed in Chapter 3.9 would be utilized to minimize adverse impacts and to protect any historic or archeological resources discovered during construction. The project would implement an AMP as recommended by the LRFI to protect any sites in the area.

3.) SCENIC AND OPEN SPACE RESOURCES

Objectives:

Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

(A) Identify valued scenic resources in the coastal zone management area;
(B) Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
(D) Encourage those developments that are not coastal dependent to locate in inland areas.

DISCUSSION: The project would alter existing views from West Papa Avenue of the heavily vegetated and overgrown area as the site would be improved. Vegetation would be cleared at the site and the proposed Mowers Facility, MCSA building, parking, and access road would be constructed and visible. Open space areas would be landscaped with grass, trees, and other vegetation. Overall, views of the site would thus change from an undeveloped scrubland to an improved facility. This change should not have a significant long-term impact on views because the site currently lacks distinctive or noteworthy visual qualities. The project would improve views of this area that is more complementary to the existing school campus and nearby ballfields. The proposed facilities would pose minimal visual impacts to users of Maui High School and to surrounding residential areas as building height would remain like the surrounding areas.

4.) COASTAL ECOSYSTEMS

Objectives:

Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
(B) Improve the technical basis for natural resource management;
(C) Preserve valuable coastal ecosystems of significant biological or economic importance, including reefs, beaches, and dunes;
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures;

DISCUSSION: The project would be consistent with the objective and these policies for coastal ecosystems. The project does not include any coastal development or activities, therefore, there are no direct impacts to coastal ecosystems or resources. There are no surface waters or major drainageways associated with the project or on the project site. Improvements would primarily consist of site-related work involving minor grading and leveling of areas and improving surfaces with pavement, building construction, etc. Site work would include addressing drainage conditions associated with the project from increased impervious surfaces created. This work should have minimal effect on existing drainage patterns in the area and on coastal waters since no major site improvements are necessary. BMPs as mentioned in Chapter 3.3 would be utilized during construction to minimize stormwater runoff associated with land-disturbing activities.

5.) ECONOMIC USES

Objectives:

Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when:

(i) Use of designated locations is not feasible;

(ii) Adverse environmental effects and risks from coastal hazards are minimized; and

(iii) The development is important to the State's economy.

DISCUSSION: The project does not conflict with this objective and these policies. The Proposed Action does not include any coastal development or activities, therefore, there are no anticipated impacts to coastal resources. The proposed facilities would be situated outside of the coastal zone and within an existing residential area adjacent to MHS.

6.) COASTAL HAZARDS

Objectives:

Reduce hazard to life and property from coastal hazards.

Policies:

(A) Develop and communicate adequate information about the risks of coastal hazards;

(B) Control development, including planning and zoning control, in areas subject to coastal hazards;

(C) Ensure that developments comply with requirements of the National Flood Insurance Program; and
(D) Prevent coastal flooding from inland projects;

DISCUSSION: The project does not include any coastal developments or activities, and the project should have minimal short- or long-term impact on potential flood hazards associated with the site and surrounding high school area. Site improvements for the project would slightly change existing topographic conditions to accommodate buildings, parking, and other accessory improvements. However, this should have minimal effect on potential flood conditions that are already low risk (Zone X) for this area because improvements would not be large enough to significantly change the overall flow of regional drainage conditions in the area.

Additionally, the entire property is not expected to be impacted by sea level rise as the property is located outside of the 3.2-feet Sea Level Rise Exposure Area.
Although the project would have a low likelihood of being significantly impacted by a tsunami, the design and construction of the facilities would conform to applicable State and County design standards and building codes. In the event of a tropical storm, construction personnel and users of the facilities would respond to any County of Maui emergency alerts and instructions, as appropriate, to ensure safety.

7.) MANAGING DEVELOPMENT
Objectives:
Improve the development review process, communication, and public participation in the management of coastal resources and hazards.
Policies:
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process;

DISCUSSION: This Final EA has been prepared in accordance with HRS Chapter 343 and includes an evaluation of short and long-term environmental impacts of the project. The environmental review process included public review within comment periods. Implementation of the proposed improvements will require State and County permits and approvals, as identified in Section 2.2.5. The overall permitting, review and approval process is consistent with the following CZM policies for managing development.

8.) PUBLIC PARTICIPATION
Objectives:
Stimulate public awareness, education, and participation in coastal management. Policies:
(A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

DISCUSSION: Chapter 5 includes a discussion on the efforts undertaken to provide the community and agencies with an opportunity to review and comment on this project consistent with this policy. Pre-assessment consultation letters and Draft EA notification letters have been distributed to various stakeholders soliciting their input in the preparation of this document. The project's Draft EA has also been posted in the May 8, 2024, edition of *The Environmental Notice* for public review and comment. The publication and processing of this environmental document allows for information to be distributed to the public and for public participation to address comments and concerns associated with the project.

9.) BEACH PROTECTION

Objectives:

(A) Protect beaches and coastal dunes for:
(i) Public use and recreation;
(ii) The benefit of coastal ecosystems; and
(iii) Use as natural buffers against coastal hazards; and
(B) Coordinate and fund beach management and protection.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
(B) Prohibit construction of private shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;
(C) Minimize the construction of public shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;
(D) Minimize grading of and damage to coastal dunes;
(E) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and
(F) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

DISCUSSION: The project does not include any coastal developments, any shoreline hardening, or activities that would directly impact coastal resources or interfere with natural shoreline processes. Therefore, the project does not conflict with this objective and these policies for beach protection.

10.) MARINE AND COASTAL RESOURCES

Objectives:

(A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and

(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

DISCUSSION: The Proposed Action would be located inland and does not include the use of marine or coastal resources. Therefore, the project does not conflict with this objective and these policies for marine and coastal resources.

4.2 COUNTY OF MAUI PLANS AND POLICIES

4.2.1 MAUI COUNTY GENERAL PLAN 2030

The Maui County General Plan 2030 is a long-term comprehensive plan for the physical, economic, environmental, and cultural identity of the County, which includes the islands of Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe. The General Plan consists of the Countywide Policy Plan that acts as an overarching values statement and provides a policy framework for the Island and Community Plans. Last updated in 2010, the Countywide Policy Plan provides a vision statement, along with broad goals, objectives, policies, and implementing actions for each core theme which together portray the desired direction for the County's future to the year 2030. The project is consistent with the following core themes from the Countywide Policy Plan of the Maui County General Plan 2030:

A. Protect the Natural Environment

B. Preserve Local Cultures and Traditions

C. Improve Education

F. Strengthen the Local Economy

J. Promote Sustainable Land Use and Growth Management

K. Strive for Good Governance

The goals, objectives, policies, and actions consistent with the project from each applicable core theme in the County Wide Policy Plan are provided in Table 4.2.

Table 4.2
Proposed Action's Conformance to the County General Plan

County of Maui General Plan Goals, Objectives, Policies, and Implementing Actions	Description
A.) Protect the Natural Environment	
Goal: Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.	
Objective 1: Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.	
Policies:	(G) Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.
Objective 2: Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.	
Policies:	(E) Mitigate the negative effects of upland uses on coastal wetlands, marine life, and coral reefs. (F) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.
Implementing Action:	(a) Develop regulations to minimize runoff of pollutants into nearshore waters and reduce nonpoint and point source pollution.
Objective 3: Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.	
Policies:	(A) Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value. (C) Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments. (D) Improve efforts to mitigate and plan for the impact of natural disasters, human-influenced emergencies, and global warming. (F) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change. (I) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.
Implementing Action:	(a) Document, record, and monitor existing conditions, populations, and locations of flora and fauna communities. (b) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.
Discussion: The Proposed Action would ensure that the island's environment is protected in the short-term and long-term. BMPs as mentioned throughout Chapter 3.0 would be utilized to mitigate potential impacts to the island's sensitive land and coastal ecosystems, flora and fauna, water systems, natural resources, air quality, climate, and significant viewplanes.	
B.) Preserve Local Cultures and Traditions	
Goal: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents' multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.	
Objective 1: Perpetuate the Hawaiian culture as a vital force in the lives of residents.	

Policies:	(A) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices. (B) Prohibit inappropriate development of cultural lands and sites that are important for traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity. (F) Recognize and preserve the unique natural and cultural characteristics of each ahupua`a or district.
Objective 4: Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.	
Policies:	(D) Protect and preserve lands that are culturally or historically significant.
Discussion: The Proposed Action would ensure that the project would protect and preserve any significant cultural resource, archaeological site, and access to these cultural resources within and surrounding the project site as identified in Chapters 3.9 and 3.10. If any archaeological sites or human burials are discovered during the construction period, all construction work would cease, and proper protocols would be conducted to leave the remains undisturbed and in place.	
C.) Improve Education	
Goal: Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.	
Objective 1: Encourage the State to attract and retain school administrators and educators of the highest quality.	
Policies:	(B) Encourage the State to ensure teachers will have the teaching tools and support staff needed to provide students with an excellent education. (C) Explore Maui County district- and school-based decision making in public education.
Objective 2: Provide nurturing learning environments that build skills for the 21st century.	
Policies:	(A) Expand professional-development opportunities in disciplines that support the economic-development goals of Maui County. (B) Plan for demographic, social, and technological changes in a timely manner. (D) Promote development of neighborhood schools and educational centers. (F) Support coordination between land use and school-facility planning agencies. (G) Encourage the upgrade and ongoing maintenance of public-school facilities. (K) Design school and park facilities in proximity to residential areas. (N) Encourage alternative learning and educational opportunities.
Objective 3: Provide all residents with educational opportunities that can help them better understand themselves and their surroundings and allow them to realize their ambitions.	
Policies:	(B) Broaden the use of technology and telecommunications to improve educational opportunities throughout the County. (G) Ensure teaching of the arts to all ages. (H) Expand and develop vocational learning opportunities by establishing trade schools.
Discussion: The Proposed Action includes the relocation of and construction of the DOE's MCSA Maui Campus facility. The proposed facility includes improved learning facilities such as modern classrooms, testing center, and computer room that would all assist in strengthening student programs and providing teachers with the space and resources to provide improved learning opportunities. Future use of the MCSA building by Maui High School would provide new additional spaces to support its educational programs.	
F.) Strengthen the Local Economy	
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.	

Objective 1: Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.	
Policies:	(B) Promote lifelong education, career development, and technical training for existing and emerging industries. (C) Invest in infrastructure, facilities, and programs that foster economic diversification. (E) Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.
Discussion: Construction activities would result in a short-term positive economic impact for Maui due to construction-related spending and employment. Additionally, direct construction activities would result in an overall short-term positive economic impact by stimulating indirect and inducted employment within other industries on the island. Furthermore, a slight positive economic impact would occur during the operation of the facilities with the addition of DOE employees. It is anticipated that providing increased access to education and skills for the adult population of Maui County would provide positive results for the local civilian labor force as students enter the workforce.	
J.) Promote Sustainable Land Use and Growth Management	
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.	
Objective 1: Improve land use management and implement a directed-growth strategy.	
Policies:	(B) Direct urban and rural growth to designated areas. (E) Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources. (H) Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources. (M) Protect summits, slopes, and ridgelines from inappropriate development.
Objective 4: Improve and increase efficiency in land use planning and management.	
Policies:	(A) Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses. (B) Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts. (E) Coordinate with Federal, State, and County officials in order to ensure that land use decisions are consistent with County plans and the vision local populations have for their communities. (G) Improve land use decision making through the use of land- and geographic information systems.
Discussion: The Proposed Action includes the relocation of and improvement of the DOE Mowers Facility and MCSA Maui Campus facility. The proposed facilities would be within the State's Urban District and in an existing neighborhood. The project would not impact State agricultural lands, natural resources, and significant geological formations. The project does not conflict with the objectives and policies of the Hawai'i State General Plan, County, and community plans. The project's EA has been prepared to assess the impacts of the Proposed Action on various aspects of the environment throughout Chapter 3.	
K.) Strive for Good Governance	
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.	
Objective 1: Strengthen governmental planning, coordination, consensus building, and decision making.	
Policies:	(A) Plan and prepare for the effects of social, demographic, economic, and environmental shifts.
Objective 2: Promote civic engagement.	

Policies:	(B) Promote and ensure public participation and equal access to government among all citizens.
Discussion: The project's Draft EA included the solicitation of comments from various government agencies, organizations, and the public throughout the environmental review process. Pre-assessment consultation letters have been distributed to various stakeholders soliciting their input in the preparation of this document. The publication and processing of this environmental document allows for information to be distributed to the public and for public participation to address comments and concerns associated with the project.	

Although not discussed in this Chapter, the Proposed Action does not conflict with the goals, objective, policies, and actions of the other core themes below for the following reasons:

D. Strengthen Social and Healthcare Services: *The Proposed Action does not directly involve improving social and healthcare services.*

E. Expand Housing Opportunities for Residents: *The Proposed Action does not involve constructing or expanding housing opportunities.*

G. Improve Parks and Public Facilities: *The Proposed Action does not involve improvements to parks or public facilities.*

H. Diversify Transportation Options: *The Proposed Action does not involve the provision or diversification of transportation options.*

I. Improve Physical Infrastructure: *The Proposed Action does not involve improvements to existing physical infrastructure.*

4.2.2 MAUI ISLAND PLAN (2012)

As a part of the decennial Maui County General Plan 2030, the Maui Island Plan provides direction and strategy for future growth, the economy, and social and environmental decisions for Maui through the year 2030. Last updated in 2012, the Maui Island Plan contains a vision, goals, objectives, policies, and actions that are aligned with the County's General Plan but are more focused on the issues and needs for Maui. The project is consistent with the following goals, objectives, policies, and actions from the Maui Island Plan:

CHAPTER 1.) POPULATION

GOAL 1.1: *Maui's people, values, and lifestyles thrive through strong, healthy, and vibrant island communities.*

OBJECTIVE 1.1.1: *Greater retention and return of island residents by providing viable work, education, and lifestyle options.*

Policies:

1.1.1.a: Expand programs that enable the community to meet the education, employment, housing, and social goals of youth and young adults.

Implementing Actions:

1.1.1-Action 1: Use an existing agency to facilitate education, employment, housing, social services, and other programs that help retain young adults on Maui.

DISCUSSION: The Proposed Action includes the temporary relocation of MCSA Maui Campus program with improved learning facilities that would assist in improving student programs and providing educators with the space to provide learning opportunities. The MCSA facility would continue to provide access to adult education programs and would retain students on Maui as students would not need to travel further to other island campuses for school. Future use of the MCSA building by Maui HS would allow for the expansion of educational programs for Maui's youth. The proposed Mowing Facility would retain viable work for those DOE employees. Therefore, the project is consistent with the goal, objective, policies, and actions for population in the Maui Island Plan.

CHAPTER 2.) HERITAGE RESOURCES

GOAL 2.1: *Our community respects and protects archaeological and cultural resources while perpetuating diverse cultural identities and traditions.*
OBJECTIVE 2.2: *A more effective and efficient planning and review process that incorporates the best available cultural resources inventory, protection techniques, and preservation strategies.*
Policies:

2.1.2.c: Ensure that cultural, historic, and archaeological resources are protected for the benefit of present and future generations.

OBJECTIVE 2.3: *Enhance the island's historic, archaeological, and cultural resources.*
Policies:

2.1.3.c: Support regulations to require developers, when appropriate, to prepare an Archaeological Inventory Survey, Cultural Impact Assessment, and Ethnographic Inventories that are reviewed and commented upon by the Office of Hawaiian Affairs, Native Hawaiian advisory bodies, the State Historic Preservation Division (SHPD), and the Office of Environmental Quality Control, and systematically comply with the steps listed in SHPD's administrative rules, including consultation and monitoring during construction phases of projects.

GOAL 2.2: *An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.*
OBJECTIVE 2.2.2: *Improved reef health, coastal water quality, and marine life.*
Policies:

2.2.2.a: Create additional mechanisms where needed to contain and control runoff and pollution.

OBJECTIVE 2.2.3: *Water quality that meets or exceeds State Clean Water Act standards.*
Policies:

2.2.3.a: Reduce the amount of impervious surface and devise site plan standards that aim to minimize storm runoff and NPS pollution.

GOAL 2.3: *Healthy watersheds, streams, and riparian environments.*
OBJECTIVE 2.3.2: *Decreased NPS and point source pollution.*
Policies:

2.3.2.a: Enforce water pollution related standards and codes.

OBJECTIVE 2.3.5: *Limited development in critical watershed areas.*

Policies:

2.3.5.a: Discourage development and subdivision of land within critical watersheds and in areas susceptible to high erosion and sediment loss.

GOAL 2.5: *Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.*

OBJECTIVE 2.5.1: *A greater level of protection for scenic resources.*

Policies:

2.5.1.a: Protect views to include, but not be limited to, Haleakalā, `Īao Valley, the Mauna Kahalawai (West Maui Mountains), Pu`u Ō`la`i, Kaho`olawe, Molokini, Moloka`i, and Lāna`i, Mauna Kea, Mauna Loa, sea stacks, the Pacific Ocean, and significant water features, ridgelines, and landforms.

2.5.1.b: Identify, preserve, and provide ongoing management of important scenic vistas and open space resources, including mauka-to-makai and makai-to-mauka view planes.

2.5.1.c: Protect "night sky" resources by encouraging the implementation of ambient light ordinances and encouraging conversion of all sources that create excessive light pollution, affecting our ability to view the stars.

DISCUSSION: The LRFI Report has identified known historical and archaeological resources around the project site, however, no discernable historic sites were found on the site. An Archaeological Inventory Survey and Monitoring Plan would be prepared to ensure any historic resources on site are protected. The CIA for the project has not identified any active cultural practices taking place on the site. Cultural monitoring would also take place alongside archaeological monitoring. Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Additionally, construction and site plans would include BMPs to protect coastal waters, watersheds, water systems, ecosystems, and significant scenic views and resources from adverse impacts. Therefore, the Proposed Action does not conflict with the goals, objectives, and policies for heritage resources in the Maui Island Plan.

CHAPTER 4.) ECONOMIC DEVELOPMENT

GOAL 4.7: *Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.*

OBJECTIVE 4.7.2: *Encourage an increase in the number of certificate recipients and associate, bachelors, and graduate degrees conferred.*

Policies:

4.7.2.c: Encourage the education and training of our residents to meet the needs of a diversified economy.

4.7.2.d: Support education and training programs such as student internships, vocational training, and career development opportunities to ensure a highly skilled workforce.

4.7.2.e: Work with educational institutions to improve and expand access to education and training through multiple modes, including distance learning.

DISCUSSION: The Proposed Action includes the temporary relocation of the MCSA Maui Campus program with improved learning facilities that would assist in improving student programs and support educators with the space and resources to teach. The relocation of the MCSA facility would allow for the continued operation and access to adult education and workforce development programs for the adult population on Maui. Future use of the MCSA building by Maui HS would provide much needed additional educational spaces to support its academic programs. Therefore, the project is consistent with the goal, objective, policies, and actions for economic development in the Maui Island Plan.

CHAPTER 6.) INFRASTRUCTURE & PUBLIC FACILITIES

GOAL 6.8: *Maui will have school and library facilities that meet residents' needs and goals.*
OBJECTIVE 6.8.1: *Assist in providing appropriate school and library facilities in a timely manner and in strategic locations.*
Policies:

6.8.1.a: Work in partnership with all educational institutions to meet current and future needs including appropriate location, timing, and design of future facilities.
6.8.1.e: Encourage the State to upgrade, modernize, and expand school facilities, including those in remote communities.

OBJECTIVE 6.8.2: *Provide a more expansive network of safe and convenient pedestrian-friendly streets, trails, pathways, and bikeways between neighborhoods and schools where appropriate.*
Policies:

6.8.2.a: Encourage the State to build new school facilities in appropriate locations that minimize time and distance for students to travel to and from school.

DISCUSSION: The Proposed Action involves the timely relocation of the DOE's MCSA Maui Campus facility with modern and improved learning facilities. The project will be located within the population center of Kahului and is accessible to major roadways and neighborhoods. Therefore, the project is consistent with the goal, objective, policies, and actions for infrastructure and public facilities in the Maui Island Plan.

4.2.3 WAILUKU-KAHULUI COMMUNITY PLAN (2002)

The Wailuku-Kahului Community Plan is one of nine Maui County decennial community plans adopted by the Maui County Council. These community plans are mutually supporting the goals, objectives, policies, and implementing actions of the Hawai'i State Plan, Maui County General Plan, and Maui Island Plan.

Last adopted in 2002, the Wailuku-Kahului Community Plan is a requirement of Maui County Code 2.80B and is a more geographically focused long-term plan. The Wailuku-Kahului Community Plan reflects current and future conditions in the Wailuku-Kahului region and presents specific planning goals, objectives, policies, and implementation considerations to guide decision-making to the year 2010. Although the Wailuku-Kahului Community Plan has not been updated since 2002, some of the goals, objectives, and policies of the Plan are still applicable to the project as discussed in the following sections.

ENVIRONMENT

GOAL: *A clean and attractive physical and natural environment in which man-made developments or alterations to the natural environment relate to sound environmental and ecological practices, and important scenic and open space resources are maintained for public use and enjoyment.*

OBJECTIVES & POLICIES:
1. Preserve agricultural lands as a major element of the open space setting that which borders the various communities within the planning region. The close relationship between open space and developed areas is an important characteristic of community form.
2. Protect nearshore waters by ensuring that discharges from waste disposal meet water quality standards.
3. Protect shoreline wetland resources and flood plain areas as valuable natural systems and open space resources. These natural systems are important for flood control, as habitat area for wildlife, and for various forms of recreation. Future development actions should emphasize flood prevention and protection of the natural landscape.
4. Preserve the shoreline sand dune formations throughout the planning region. These topographic features are a significant element of the natural setting and should be protected from any actions which would detract from their scenic, environmental, and cultural value.
9. Maintain coastal open space along the region's shoreline as a scenic amenity and public recreational area.

DISCUSSION: The Proposed Action would not be located within any significant agricultural lands, flood plains, significant coastal dune formations, or the shoreline area. The project would be located within the state urban land district within an existing residential neighborhood. Construction of the project would include implementing BMPs to mitigate the impact to coastal waters from stormwater runoff. It is anticipated that proposed facilities would have no significant adverse impacts on open space as the facilities would improve existing conditions and would conform to the design requirements for developments in that residential zone. Therefore, the project is consistent with the goal, objective, and policies for environment in the Wailuku-Kahului Community Plan.

CULTURAL RESOURCES

GOAL: *Identification, protection, preservation, enhancement, and where appropriate, use of cultural practices and sites, historic sites and structures, and cultural landscapes and view planes that:*

1. Provide a sense of history and define a sense of place for the Wailuku-Kahului region; and

2. Preserve and protect native Hawaiian rights and practices customarily and traditionally exercised for subsistence, cultural and religious purposes in accordance with Article XII, Section 7, of the Hawai'i State Constitution, and the Hawai'i Supreme Court's PASH opinion, 79 HAW. 425 (1995).

OBJECTIVES & POLICIES:
1. Preserve the character and integrity of historic sites in the Wailuku-Kahului region.
2. Recognize the importance of historically and archaeologically sensitive sites and encourage their preservation through development project review.
4. Ensure that the proposed projects are compatible with neighboring historic, cultural, and archaeological sites or districts. Such projects should be reviewed by the Cultural Resources Commission, where appropriate.
5. Require development projects to identify all cultural resources located within the project area as part of initial project studies. Further, require that all proposed activity include recommendations to mitigate potential adverse impacts on cultural resources.
9. Recognize and respect family ancestral ties to certain sites including burial sites, and establish cultural and educational programs to perpetuate Hawaiian and other ethnic heritages.

IMPLEMENTING ACTIONS:
2. Require development projects to identify all cultural resources located within or adjacent to the project area and consult with individuals knowledgeable about such cultural resources prior to application as part of the County development review process. Further, require that all proposed activity include recommendations to mitigate potential adverse impacts on cultural resources including site avoidance, adequate buffer areas, and interpretation. Particular attention should be directed toward dune areas, known and probable precontact habitation areas, and other sites and areas listed in No. 5 below, with review by the Cultural Resources Commission, where appropriate.

DISCUSSION: As discussed in Chapter 3.9 and 10, the project site is not known to contain any significant cultural, historical, or archaeological sites. The LRFI conducted for the project which has included findings from previous archaeological studies in the area has not identified any significant historic properties in the project area beyond the midden shells and heightened potential of burials occurring. A SHPD-approved Archaeological Inventory Survey report and an AMP would be conducted prior to and would be implemented during construction work. Cultural monitoring would also be conducted alongside archaeological monitoring as recommended by the project's CIA report.

Development of the facilities and site improvements on the site would have no short- or long-term effect on existing cultural practices or resources because there are no cultural resources present nor is the site used for access to areas used for such practices. The State-owned property, that includes the project site, is associated with MHS and has been used for educational activities and programs.

Measures discussed in Chapter 3.9 and 3.10 would be implemented to minimize any construction impacts to historic or archaeological sites. Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

SOCIAL INFRASTRUCTURE - EDUCATION

GOAL: *Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy and enjoyable lifestyle, accommodates the needs of young, elderly, disabled and disadvantaged persons, and offers opportunities for self-improvement and community well-being.*

OBJECTIVES & POLICIES:
1. Allocate sufficient land areas as part of residential project district specifications to meet future school site needs.
3. Coordinate the development of school facilities with the State Department of Education in conjunction with planned residential projects.
5. Encourage apprenticeship or work study programs, in conjunction with higher educational or technical/vocational studies.
7. Support the improvement and maintenance of existing school facilities.

DISCUSSION: The Proposed Action includes the relocation of the MCSA Maui Campus and DOE Mowers Facility within the R-2 residential zone adjacent to the Maui High School campus. The proposed MCSA facility includes improved learning facilities that would assist in the improvement of the school's educational and workforce development programs. The Mowers Facility would support the improvement and maintenance of existing DOE facilities on Maui. Therefore, the project is consistent with the goal, objective, policies, and actions for education in the Wailuku-Kahului Community Plan.

4.2.4 MAUI COUNTY CODE, TITLE 19 – ZONING

The Maui County Code (MCC) is a compilation of ordinances adopted by Maui County. Title 19 of the MCC contains the zoning code which defines the purpose and intent of specific zones and specifies permitted uses and activities, extent of site development, and property design restrictions in each zone. The project site and surrounding area is located within the County's R-2 Residential Zone as shown in Figure 4.3.

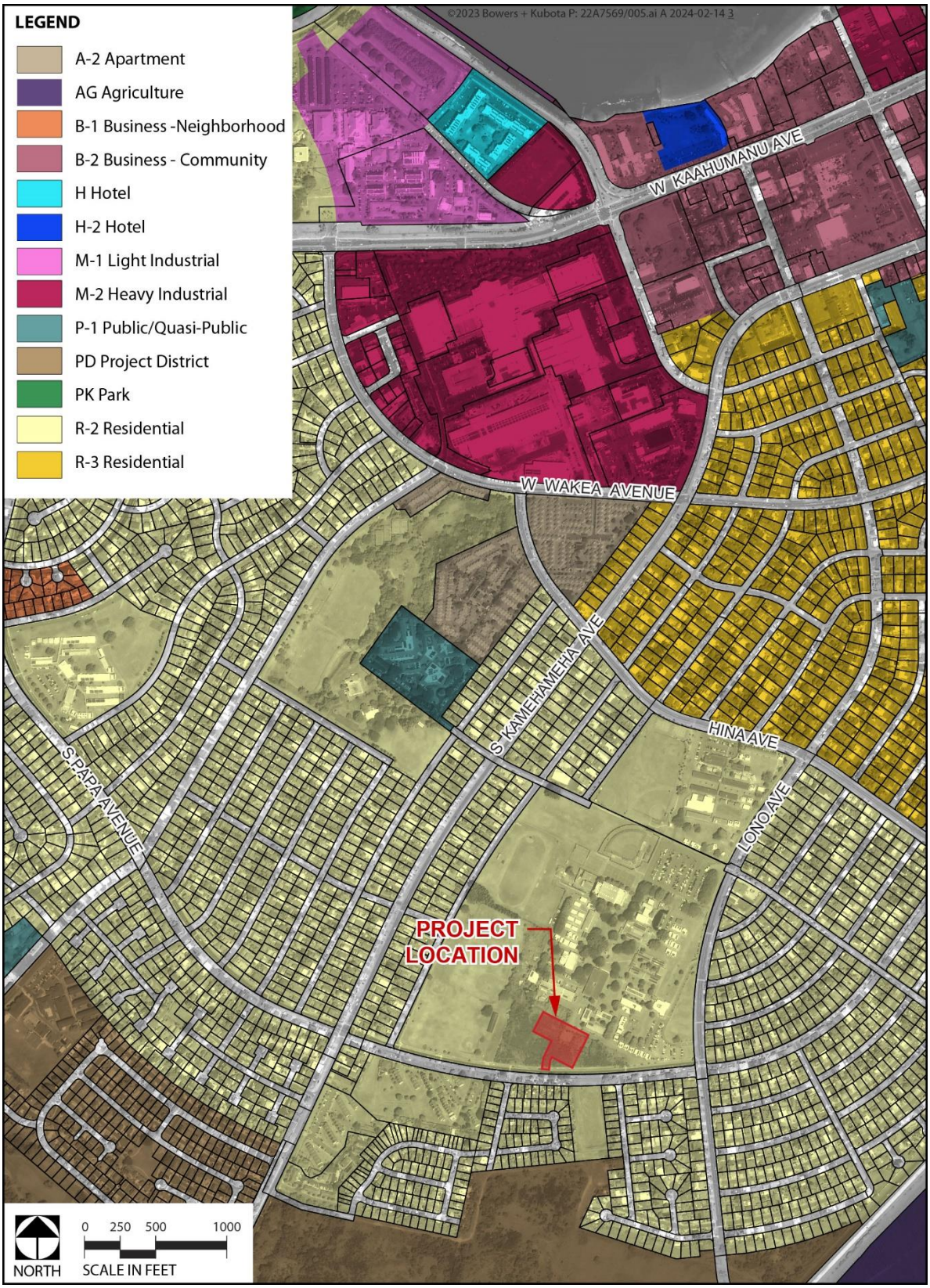
Consistency with Zoning District Permitted Uses

Under the MCC, R-2 Residential Districts applies to areas that are generally for single-family dwellings and other permitted uses that are complimentary in providing for a "harmonious residential neighborhood without the detraction of commercial and industrial activities." The R-2 Residential District consists of 12 permitted uses as listed in MCC §19.08.020, of which publicly operated schools (§19.08.020(d)) and buildings used by state government for public purposes (§19.08.020(e)), are allowed.

Furthermore, the project's landscaping will incorporate a vegetative screen behind or along the sides of the Mowers Facility and trees in the parking lot as natural barriers to mitigate noise and visual impact from the facilities on the surrounding neighborhood. This approach contributes to creating a "harmonious residential neighborhood".

Therefore, the DOE's MCSA Maui Campus facility and the DOE Mowers Facility would be consistent with permitted uses under this residential zoning district.

Figure 4.3: County of Maui Zoning



Consistency with Development Standards

The County's R-2 Residential District development standards are specified under Section 19.08.040 of the MCC zoning code. Table 4.3 lists these development standards and shows the consistency of the Proposed Action to these standards**.**

Table 4.3
Proposed Action's Conformance to the County's R-2 Development Standards

Maui County Code §19.08.040			
Development Standards. Height Regulations, and Setback Lines			
		R-2 Residential Zone	**Proposed Action**
Minimum lot area (square feet)		7,500	Lot meets requirement
Single-family dwelling density		1 per 7,500 sf	Not applicable
Minimum lot width (in feet)		65	Lot meets requirement
Maximum building height		30 feet	10-feet (MCSA Building), 17-feet (Mowers Facility)
Setback lines (For any portion of a building up to and including 15 feet in height)	**Front (in feet)**	15	greater than 15 feet
	Side/Rear (in feet)	6	greater than 6 feet
Setback lines (For any portion of a building more than 15 feet in height)	**Front (in feet)**	15	greater than 15 feet
	Side/Rear (in feet)	10	greater than 10 feet
Surfaces		Impervious surface area of a zoning lot must not exceed 65% of the total zoning lot area	Meets requirement
Maui County Code §19.36B.020			
Designated Number of Off-Street Parking and Loading			
School, educational institution, general education, specialized education		1 per classroom if all students are under 16 years old; 8 per classroom if any student is at least 16 years of age	up to 50 parking spaces

The Proposed Action would occur on a 2.2-acre site on a 73.5-acre lot of Maui HS. The lot size would meet the requirements under this residential district. Under these standards, the Proposed Action would then must not exceed the maximum building height of 30-feet, meet the minimum setback lines for both facilities, not contribute to exceeding the amount of impervious surfaces on the lot, and must meet parking requirements.

Both buildings would meet the district's building height requirement as both facilities would be one-story high, with the MCSA having an approximate building height of about 10-feet and the Mowers Facility with an approximate height of 17-feet. Based on each facility's building height, the distance of both facilities from the property line would also meet the setback lines for this district.

The existing MHS facilities cover approximately 54-acres of the 73.5-acre property. The Maui High School Park covers roughly 13-acres of the lot, and the other 6.5-acres is undeveloped. About half or 25-acres of the MHS campus contain impervious surfaces, and about 0.7-acres of MHS park contain impervious surfaces. In total, these existing surfaces cover about 40% of the lot. Based on the number of existing surfaces, the Proposed Action of about 2.2-acres would not contribute impervious surfaces that would exceed the 65% surface limit for the property.

The MCSA facility contains four classrooms and up to 50 parking spaces, therefore, meeting the designated number of off-street parking for this use. Therefore, the project would be consistent with the R-2 Residential District development standards for the area.

5.0 AGENCIES AND ORGANIZATIONS CONSULTED

As a requirement of HAR §11-200.1-18 (2019), this chapter identifies agencies, citizen groups, and individuals solicited in the preparation of the Draft and Final EA. Consultation with various government agencies, officials, and community members were undertaken to obtain information on agency requirements and comments about potential community issues so that they could be addressed in this Final EA. These consultations involved the distribution of a pre-assessment consultation letter and notice of the availability of the Draft EA in the State Office of Planning and Sustainable Development, Environmental Review Program's (ERP) *The Environmental Notice* for public comment. These consultations are discussed in the following sections of this chapter.

5.1 PRE-ASSESSMENT CONSULTATION

Consultation involved distributing a pre-assessment consultation letter with supporting documentation to various parties requesting their written comments. A listing of those parties consulted is below and those providing written responses have been identified with an "✓" symbol. Copies of written comments received and responses to these comments are included in Appendix A-1.

Federal Agencies

U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency Region 9 (Pacific Southwest)
✓ U.S. Army Corps of Engineers, Honolulu District

State of Hawai'i

Department of Land and Natural Resources (DLNR)
DLNR, Aha Moku Advisory Committee
DLNR, Board of Land and Natural Resources
✓ DLNR, Division of Forestry and Wildlife
✓ DLNR, Engineering Division
DLNR, State Historic Preservation Division
Department of Transportation (HDOT)
✓ HDOT, Highways Division
Office of Hawaiian Affairs

County of Maui Agencies

Department of Environmental Management
✓ Department of Fire and Public Safety
Department of Housing and Human Concerns
✓ Department of Parks and Recreation
Department of Planning
Department of Public Works
Police Department

Department of Transportation
✓ Department of Water Supply

Elected Officials

Senator Gilbert Keith-Agaran (Senate District 5)
Representative Justin H. Woodson (House District 9)
Mayor Richard T. Bissen
✓ Council Chair Alice Lee

Utility Companies

✓ Hawaiian Electric Company
Hawaii Gas Company
Hawaiian Telcom
Spectrum/Charter Communications

Community

Principal Jamie Yap (Maui High School)
President Amber Alexander(Maui High School PTSA)
Principal Helen Sampei (McKinley Community School for Adults)

5.2 DRAFT EA COMMENTS

Consultations with agencies and the community were conducted to obtain comments on the Draft EA document published. Notice of the availability of the Draft EA for the project was published in the May 08, 2024, issue of the State Office of Planning and Sustainable Development, ERP's *The Environmental Notice* for public comment. The publication of the Draft EA initiated a 30-day public comment period that ended on June 07, 2024.

Notice of the availability of the Draft EA was distributed via email and mail to the following agencies and community members listed below. The notice contained a web link to access the electronic version of the Draft EA which was available on the ERP website. Hardcopies of the EA along with a copy of the notice were also mailed to both the Hawai'i State Library and the Kahului Public Library to be made available to the public.

A listing of those parties consulted is below and those providing written responses have been identified with an "✓" symbol. Thirteen agency responses were received on the Draft EA. Copies of written comments received and responses to these comments are included in Appendix A-2.

Federal Agencies

U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency, Region 9 (Pacific Southwest)
U.S. Army Corps of Engineers, Honolulu District

State of Hawai'i Agencies

Department of Accounting and General Services
✓ DAGS, Director

Department of Business, Economic Development and Tourism (DBEDT)
- DBEDT, Director
- DBEDT, Land Use Commission
- DBEDT, Office of Planning and Sustainable Development

Department of Defense (DOD)
- DOD, Office of the Adjutant General
- DOD, Hawai'i Emergency Management Agency

Department of Hawaiian Home Lands

Department of Health (DOH)
- DOH, Director
- ✓ DOH, Clean Air Branch
- DOH, Clean Water Branch
- DOH, Safe Drinking Water Branch
- DOH, Solid and Hazardous Waste Branch
- ✓ DOH, Wastewater Branch

Department of Land and Natural Resources (DLNR)
- DLNR, Chairperson
- DLNR, Aha Moku Advisory Committee
- DLNR, Commission on Water Resource Management
- ✓ DLNR, Division of Forestry and Wildlife
- ✓ DLNR, Engineering Division
- ✓ DLNR, Land Division
- DLNR, State Historic Preservation Division

Department of Transportation (DOT)
- ✓ DOT, Director
- ✓ DOT, Highways Division

Office of Hawaiian Affairs

<u>County of Maui Agencies</u>

Department of Environmental Management (DEM)
- DEM, Director
- DEM, Solid Waste Division
- ✓ DEM, Wastewater Reclamation Division

Department of Fire and Public Safety

Department of Housing and Human Concerns (DHHC)
- ✓ DHHC, Director

Department of Parks and Recreation

Department of Planning (DP)
- ✓ DP, Director

Department of Public Works (DPW)
- DPW, Director
- ✓ DPW, Development Services Administration
- DPW, Engineering Division
- DPW, Highways Division

Police Department

Department of Transportation
Department of Water Supply
Emergency Management Agency

Elected Officials

Senator Troy N. Hashimoto (Senate District 5)
Representative Justin H. Woodson (House District 9)
Maui Mayor Richard T. Bissen
Maui County Council Chair Alice Lee

Utility Companies

✓ Hawaiian Electric Company
Hawaii Gas Company
Hawaiian Telcom

Community

Principal Jamie Yap (Maui High School)
President Nicole Comilang (Maui High School PTSA)
Principal Helen Sanpei (McKinley Community School for Adults)

West Papa Avenue Residents:

Michelle Takiko Suyama
Florelyn Lista Mercado
Nemecio V Pacleb
Linda Ancheta
1985 Bates Family Trust
Elpidio S. Pablo
Ronnie A. Aspilla
Jo Domingo Delos Santos
Jeward L Leones
Larry Akira Yoshikawa
Reginald E. Eaton
Patricia Mae Haupu
Mark Agnes Fernandez
Gloria Ariniego
Toshie Leslie Miyahira
Bert Christopher Tagud
Richard Dacutan Magsayo
Hale Mahaolu

6.0 FINDINGS AND DETERMINATION

As a requirement of HAR §11-200.1-18 (2019), this chapter provides a description of the proposing agency's anticipated determination for the project, including findings and reasons supporting the determination.

6.1 DETERMINATION

The proposing agency's analysis of the Proposed Action's primary, secondary, cumulative, and short and long-term effects on the environment would result in a determination of either: 1.) the action would have a significant impact on the environment and an Environmental Impact Statement Preparation Notice should be issued, or 2.) the action would not have a significant impact on the environment warranting a Finding of No Significant Impact (FONSI).

To support the determination, the project's effects on the environment are discussed in relation to the 13 Significance Criteria prescribed under the State Department of Health's Administrative Rules Title 11, Chapter 200.1. The results of the assessments conducted in the following Chapter 6.2 determine that the proposed project should not have a substantial adverse effect on the surrounding environment.

As a result, the Proposing Agency's determination is that the Proposed Action is **not** to have a significant impact on the environment based on the criteria set forth in HAR §11-200.1-13, and therefore, through its review and evaluation of the overall impacts discussed in the EA finds a FONSI determination is warranted for this project.

6.2 SIGNIFICANCE CRITERIA FINDINGS

The project was assessed against the thirteen (13) "significance criteria" set forth in HAR §11-200.1-13 to evaluate whether the project would have a significant impact on the surrounding environment which led to develop the determination of a FONSI. A discussion of the Proposed Action with each significant criteria to support that determination is discussed below.

(1) Irrevocably commits a natural, cultural, or historic resource.

The Proposed Action would not result in the irrevocable commitment to loss or destruction of any natural, cultural, or historic resources. Chapter 3 discussed the project's effect on natural resources and discussed how no natural resources of interest are present within the project site.

Technical studies conducted for the site support this claim. The project's Flora and Fauna Survey Report had observed no federally or state-listed endangered flora and fauna on the site, and concluded that the Proposed Action is not expected to have a significant, adverse impact on native vegetation or wildlife. BMPs discussed in Chapter 3.6 would be utilized to minimize impacts to endangered or threatened wildlife that may fly over or pass through the site during construction.

The project site is located in the central plain of Maui, which is comprised of sand dune systems that Hawaiian oral traditions identify as battlefields and burial grounds. As discussed in Chapters 3.9 and 3.10, this has been reinforced by previous archaeological studies in the area, and the project's LRFI and CIA reports.

Chapter 3.9 addressed historic and archaeological resources and has not identified any historic properties in the project area beyond the heightened probability for burials and shell midden. Based on the lack of sufficient information to understand the likelihood of subsurface historic properties on the site beyond the potential for burials and the cultural sensitivity of the area, a SHPD-approved Archaeological Inventory Survey with a subsurface testing component would be conducted prior to commencing construction. In addition, a SHPD-approved AMP would be in place prior to construction and would be implemented during all construction work. Cultural monitoring would also take place alongside archaeological monitoring given the sensitive nature of the dune deposits.

Appropriate best management practices and other minimization measures would also be incorporated into design plans that are reviewed by pertinent agencies before being implemented during construction activities as discussed in this document. Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage to ensure there would be no irrevocable commitment to loss or damage of these finds. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Based on these measures, the project would not irrevocably commit a natural, cultural, or historic resource.

(2) Curtail the range of beneficial uses of the environment.

The Proposed Action would not curtail the range of beneficial uses of the environment as the project would not adversely impact environmental resources in and around the project site. The property is in the urban land use district and is not designated as Important Agricultural Lands or Conservation land. The Proposed Action would incorporate BMPs during construction and the project would be designed to minimize impacts to land, water, and air resources while maintaining important scenic views.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law.

The Proposed Action would not conflict with environmental policies in the Hawai‘i State Plan, State Land Use Law, and Coastal Zone Management Program along with County plans and regulations. Potential adverse impacts that may occur with short-term construction activities would be mitigated through compliance with regulatory guidelines and BMPs.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The Proposed Action may have a short-term, positive economic impact due to the increase in construction-related spending and employment. Direct construction activities would

result in an overall short-term positive economic impact by stimulating indirect and inducted employment within other industries on the island.

Furthermore, the project would provide a positive impact on the economic and social welfare for Maui's County's adult population and local civilian labor force as the proposed facilities would employee DOE staff and provide education and workforce development programs. Future use of the MCSA building for Maui High School's future needs would also be beneficial for the well-being of both MHS students and staff, as the extra classrooms would provide improved educational facilities. Adverse socioeconomic impacts are not anticipated with the project.

The Project would not adversely impact cultural practices of the community or State.

(5) Have a substantial adverse effect on public health.

The Proposed Action would have some temporary impacts on air and noise quality in the areas surrounding the project site during the construction period. These short-term impacts would be minimized to the extent practicable through the utilization of BMPs and compliance with State and local regulations. The project would not result in a long-term adverse impact on public health and resources.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The Proposed Action would involve a temporary increase in the local neighborhood population as users of the proposed facilities would be relocated to the area during working hours. During non-working hours, the neighborhood population would remain the same. This change in neighborhood population would not create a significant change in the overall population of Kahului or the island.

The project involves the addition of new electrical, sewer, and water utility lines, however, usage by the proposed facilities is not anticipated to strain existing service capacity. Surrounding public roadways would be impacted as there would be increased traffic to the area during working hours. During non-working hours, traffic in the area would remain the same. The Proposed Action is not expected to adversely impact County public services.

The project does not involve adding residential housing or visitor accommodations that may generate population changes or have adverse effects on public facilities.

(7) Involve a substantial degradation of environmental quality.

As discussed in Chapter 3.0, no long-term substantial impacts to any environmental resource are anticipated with the project. Construction activities would cause some impacts to air quality, noise, and traffic in the project area, but these impacts would be temporary and mitigated with BMPs in accordance with State and County regulations.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.

The Proposed Action is not expected to generate substantial cumulative adverse impacts. Short-term construction-related impacts to surrounding homes and roads may occur, however, these impacts would be mitigated to the extent possible. In the long-term, there

would be no adverse cumulative impacts on the environment and would not involve a commitment for larger actions.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.

The Proposed Action is not expected to have a substantial adverse impact on rare, threatened, or endangered species, or their habitat. The project's Flora and Fauna Survey Report has not observed any federal or state-listed endangered vegetation and wildlife in the project site. As discussed in Chapter 3.6, BMPs would be utilized during construction to prevent the unintentional spread of invasive species to new areas or habitats. Construction activities would be restricted to daylight hours as much as practicable during seabird breeding season, and proposed outdoor lighting would be shielded to minimize impacts to native seabirds that may frequent the area. BMPs would be utilized during vegetation removal and construction to minimize adverse impacts to the Hawaiian hoary bat, Hawaiian short-eared owl, or any other endangered birds that are found in the project site.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

It is anticipated that short-term and temporary impacts to air quality and noise levels would occur in the areas surrounding the project site during the construction period. These impacts would be mitigated to the extent practicable in accordance with State and County permit regulations. Therefore, a substantial adverse effect on air or noise quality is not expected.

The project would not have a substantial adverse effect on water quality as BMPs would be described in construction plans to minimize the discharge of pollutants from stormwater before and after construction. There would be an increase in impervious surfaces due to the construction of the facilities, pavements, and driveway which may contribute to runoff, but this runoff would be contained to the extent possible through the project's drainage system.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project site is not located within a FEMA special flood hazard zone, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, or within any water body. No water bodies are in or in the immediate vicinity of the project site. Therefore, the Proposed Action would not have a substantial adverse effect on or be likely to suffer damage by being in an environmentally sensitive area.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in County or State plans or studies.

The Proposed Action would not have a substantial adverse effect on scenic vistas and viewplanes as the project would not be located within an area identified as a scenic view plane and contains no significant geographical feature.

The proposed project would alter existing views of the heavily vegetated and overgrown project area as they are converted into the proposed DOE Mowers Facility, MCSA building, and parking areas. It is expected that the proposed facilities would pose minimal visual impacts to users of Maui High School and to surrounding residential areas as building height would remain like the surrounding areas. Views of the West Maui Mountains and Haleakalā would remain unobstructed. The project's design would be consistent with an urban residential zone.

Short-term construction impacts to the visual environment would not be substantial as construction activities would only be temporary during the construction period.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The proposed facilities will increase energy consumption but are not expected to require substantial energy consumption or emit greenhouse gases.

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APPENDICES

APPENDIX A-1

Pre-Assessment Consultation

RICHARD T. BISSEN, JR.
Mayor

KEKUHAUPIO R. AKANA
Managing Director

PATRICK S. MCCALL
Director

SHANE T. DUDOIT
Deputy Director

DEPARTMENT OF PARKS AND RECREATION
COUNTY OF MAUI
700 HALI'A NAKOA STREET, UNIT 2
WAILUKU, MAUI, HAWAI'I 96793
www.mauicounty.gov

July 12, 2023

Matthew Fernandez, Planner
Bowers + Kubota Consulting, Inc.
2153 N King Street, Suite 200
Honolulu, HI 96819-4554

Dear Mr. Fernandez:

SUBJECT: HRS CHAPTER 343 PRE-ASSESSMENT CONSULTATION FOR ENVIRONMENTAL ASSESSMENT; RELOCATION OF DOE MAUI DISTRICT MOWERS AND COMMUNITY SCHOOL FOR ADULTS; STATE OF HAWAI'I, DEPARTMENT OF EDUCATION; KAHULUI, MAUI, HAWAI'I; TMK (2) 3-8-007:098

Thank you for the opportunity to review and comment on the subject project. The Department of Parks and Recreation has no comment at this time.

Should you have any questions, please feel free to contact me or Cheryl Akiona, Acting Chief of Planning and Development, at cheryl.akiona@co.maui.hi.us or (808) 270-7388.

Sincerely,

PATRICK S. MCCALL
Director of Parks and Recreation

c: Cheryl Akiona, Acting Chief of Planning and Development

PSM:CSA

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Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Patrick S. McCall, Director
Department of Parks and Recreation
County of Maui
100 Hali‘a Nakoa Street, Unit 2
Wailuku, Maui 96793

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Mr.McCall:

Thank you for the July 12, 2023 letter providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment for the subject project. We acknowledge that the County Department of Parks and Recreation has no comments to offer at this time.

If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

RICHARD T. BISSEN, JR.
Mayor

KEKUHAUPIO R. AKANA
Managing Director

JOHN STUFFLEBEAN, P.E.
Director

JAMES A. LANDGRAF
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAI'I 96793
http://www.mauicounty.gov/water

June 29, 2023

Matthew Fernandez
BOWERS + KUBOTA CONSULTING
via email: mfernandez@bowersandkubota.com

Dear Matthew Fernandez,

SUBJECT: HRS CHAPTER 343 PRE-ASSESSMENT CONSULTATION FOR ENVIRONMENTAL ASSESSMENT RELOCATION OF DOE MAUI DISTRICT MOWERS AND COMMUNITY SCHOOL FOR ADULTS
TMK: (2) 3-8-007:098, Maui High School, Kahului, Maui

Thank you for the opportunity to review and comment on the subject project, which includes the construction of two new buildings and parking lots; one for the DOE's Maui District Mowing Facility with the second for the McKinley Community School for Adults.

Requirements for the subject project will be determined at the time of building permit application. These requirements include, but are not limited to the following:

- Administrative Rules: The project shall meet the criteria for water service outlined in the Administrative Rules (Title 16, Chapter 201). The Administrative Rules clarify large quantity of water usage and the tiers for an applicant's request for new or additional water service from the Department. The Central Maui water system currently allows an applicant to request up to 120,000 gallons per day (gpd) of new or additional water service for a parcel. Please be advised that the requested amount is updated at the beginning of each year.

  County, state or federal public facility projects, as defined in section 19.04.040 Maui County Code (MCC) shall be considered exempt, provided that the water system has adequate capacity to meet the project's needs.

  Water usage in gallons per day shall be determined by calculating 140 gallons per 1,000 square feet of additional building floor area plus new irrigation demand.

- Fire Protection: During the building permit process, the Department of Fire and Public Safety

(DFPS) has jurisdiction. We will work with them on verifying that the existing water system is adequate to provide the required fire flow to the property.

- Water Meter: There is one existing 4" water meter (Acct #5425160656) located along Lono Avenue. Provide domestic and irrigation water demand calculations using the Non-Residential Water Meter Sizing Worksheet, prepared, signed, and stamped by a licensed (State of Hawaii) professional engineer or architect.

  Please be advised that additional water system improvements may be required based on the result of the domestic and irrigation water demand calculations submitted.

- Backflow Prevention: In order to ensure that the existing reduced pressure backflow preventer (RPBP) serving the property's water service and the double check detector assembly (DCDA) serving the property's fire line continue to operate efficiently, they should be tested yearly by a certified tester recognized by the Department. Please provide an updated annual Backflow and Cross Connection Control Testing Report for the above. If the test indicates that the RPBP and/or the DCDA are not functioning properly, they should be repaired, retested by a certified tester, and a satisfactory test report must be submitted to the Department.

  Upgrade existing double check detector assembly transponder to cellular type shall be required.

- Right of Entry Agreement: Property owner shall enter into a right of entry agreement for existing water meter and fire line prior to thrust beam situated within TMK: (2) 3-8-007:098. We will prepare the necessary documents after the following are provided:
  - Map of right of entry area on 8-1/2" x 11" paper
  - Mailing Address
  - Name and title of person signing the right of entry agreement. If the subject property is owned by a business, provide organizational documents such as the Articles of Organization or Incorporation, Operating Agreement, Bylaws, Corporate Resolutions, Shareholder Agreement, and Partnership Agreement to verify authorized signatories of the company.

If you have any questions, please contact me at (808) 270-7682 or at tammy.yeh@co.maui.hi.us. Engineering Division's main number is (808) 270-7835.

Sincerely,

Tammy Yeh

TAMMY YEH, P.E.
Civil Engineer VI

cc: DWS Water Resources Division, (water.resources@mauicounty.gov)

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April 16, 2024

Ms. Tammy Yeh, P.E.
Engineering Division
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Maui 96793

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Ms. Yeh:

Thank you for the June 29, 2023 letter providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

The Project’s water system would provide domestic water, irrigation supply, and fire protection to the site. We confirm that the water requirements for fire protection and backflow prevention would be determined at the time of the project’s building permit application and acknowledge that the State shall enter into a right-of-entry agreement with DWS.

The Project would also meet the criteria for water service outlined in the Rules Relating to Water Service in Maui County’s Administrative Rules (Title 16, Chapter 201), which clarify large quantities of water usage from DWS. However, under section 19.04.040 Maui County Code, the Project is anticipated to be considered exempt because it is a State public facility project that is located within the service area of DWS’s Central or West Maui water system. Information on water demands and water facilities for the project would be included in the Draft EA.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

RICHARD T. BISSEN, JR.
Mayor

KEKUHAUPIO R. AKANA
Acting Managing Director

BRADFORD K. VENTURA
Fire Chief

GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
313 MANEA PLACE
WAILUKU, MAUI, HAWAI'I 96732
www.mauicounty.gov

July 13, 2023

VIA EMAIL: mfernandez@bowersandkubota.com

Bowers + Kubota Consulting Inc.
Attn: Matthew Fernandez
2153 N King Street, Suite 200
Honolulu, HI 96819-4554
Email: mfernandez@bowersandkubota.com

SUBJECT: Pre-Assessment Consultation for Environmental Assessment of Relocation of DOE Maui District Mowers and Community School for Adults, State of Hawai'i Department of Education TMK (2) 3-8-007: 098 – 0000

Dear Matthew,

Thank you for allowing our office to provide comment on the subject proposed project. As per your request, comments are provided below:

There are no objections in regards to the information provided as part of the Pre-Assessment Consultation for Environmental Assessment for the DOE Maui District Mowers and Community School for Adults. Our office does reserve the right to comment on the proposed project during the building permit review process when detailed plans for this project are routed to our office for review. At that time, fire apparatus access, water supply for fire protection, and fire and life safety requirements associated with the subject project will be formally reviewed.

Should you have any specific fire related public safety concerns please identify those to us on this or any future projects you would like us to review.

For any questions or comments, please feel free to contact me at (808) 876-4690 or by email at fire.prevention@mauicounty.gov.

Sincerely,

Plans Review – Fire Prevention Bureau

MG:jn

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April 16, 2024

Plans Review, Fire Prevention Bureau
Department of Fire & Public Safety
County of Maui
313 Manea Place
Wailuku, Maui 96793

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Fire Prevention Bureau,

Thank you for the July 13, 2023 letter providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

We confirm that the Fire and Public Safety Department has no objections to the information provided so far as part of the preassessment consultation for the project’s Draft Environmental Assessment.

Design plans would be coordinated for ministerial review and obtain necessary permits by County agencies which would include the Department of Fire and Public Safety to ensure that fire apparatus access, water supply for water protection, and fire and life safety requirements are included where appropriate. We also acknowledge that your department does reserve the right to comment on the project during the building permit review process.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

July 21, 2023

Bowers & Kubota Consulting, Inc.
Attn: Mr. Matthew Fernandez, Planner
2153 N King Street, Suite 200
Honolulu, Hawaii 96819

via email: mfernandez@bowersandkubota.com

Dear Mr. Fernandez:

SUBJECT: HRS Chapter 343 Pre-Assessment Consultation for EA for Relocation of **DOE Maui District** Mowers and Community School for Adults located at 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098 on behalf of State of Hawaii Department of Education

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosure
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 26, 2023

MEMORANDUM

FROM: ~~TO:~~

DLNR Agencies:
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (daniel.l.ornellas@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM~~: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: HRS Chapter 343 Pre-Assessment Consultation for EA for Relocation of **DOE Maui District** Mowers and Community School for Adults
LOCATION: 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098
APPLICANT: Bowers & Kubota on behalf of State of Hawaii Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **July 21, 2023.**

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(✓) Comments are included/attached.

Signed: *CSC*
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Jul 20, 2023

Attachments
cc: Central File

*See remarks next page.

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: HRS Chapter 343 Pre-Assessment Consultation for EA for Relocation of DOE Maui District Mowers and Community School for Adults
Location: 660 Lono Avenue, Kahului, Island of Maui
TMK(s): (2) 3-8-007:098
Applicant: Bowers & Kubota on behalf of State of Hawaii Department of Education

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR, Chapter 1, Subchapter B, part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

The applicant should include water demands and infrastructure required to meet project needs. Please note that all State projects requiring water service from their local Department/Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: Jul 20, 2023

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

Jul 31, 2023

Bowers & Kubota Consulting, Inc.
Attn: Mr. Matthew Fernandez, Planner
2153 N King Street, Suite 200
Honolulu, Hawaii 96819

via email: mfernandez@bowersandkubota.com

Dear Mr. Fernandez:

SUBJECT: HRS Chapter 343 Pre-Assessment Consultation for EA for Relocation of **DOE Maui District** Mowers and Community School for Adults located at 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098 on behalf of State of Hawaii Department of Education

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated July 21, 2023, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 26, 2023

MEMORANDUM

FROM: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (daniel.l.ornellas@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: HRS Chapter 343 Pre-Assessment Consultation for EA for Relocation of **DOE Maui District** Mowers and Community School for Adults
LOCATION: 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098
APPLICANT: Bowers & Kubota on behalf of State of Hawaii Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **July 21, 2023.**

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Lainie Berry*
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Jul 26, 2023

Attachments
cc: Central File

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

July 26, 2023

Log no. 4171

MEMORANDUM

TO: RUSSELL Y. TSUJI, Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: HRS Chapter 343 Pre-Assessment Consultation for Draft EA for Relocation of DOE
Maui District Mowers and Community School for Adults in Kahului, Maui

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments on the Pre-Assessment Consultation for the Draft Environmental Assessment (DEA) for the Relocation of DOE Maui District Mowers and Community School for Adults at Maui High School Campus, 660 Lono Avenue, in Kahului on the island of Maui, TMK: (2) 3-8-007: 098. This proposed project will involve the addition of a new one-story building encompassing 6,400 square feet as well as a surrounding paved parking area encompassing 11,600 square feet for the DOE's Maui District Mowing Facility. Furthermore, the project also involves the construction of a new one-story building encompassing 9,200 square feet and a 13,400 square-foot paved parking lot for the McKinley Community School for Adults (CSA). The proposed project will also involve constructing two new driveways to connect each facility to West Papa Avenue and provide electrical, communications, water, sewer, and drainage utilities for each building.

The State listed 'Ōpe'ape'a or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with

manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response.

Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

State-listed waterbirds such as the ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*), 'alae ke'oke'o or Hawaiian coot (*Fulica alai*), and nēnē or Hawaiian Goose (*Branta sandvicensis*) could potentially occur at or in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction, all activities within 100 feet (30 meters) should cease and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the Maui Branch DOFAW Office at (808) 984-8100.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which include tree tobacco (*Nicotiana glauca*), that grow in disturbed soil. We recommend contacting the Maui Branch DOFAW office at (808) 984-8100 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harm to BSM. If you intend to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to www.plantpono.org for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Coqui Frogs, Little Fire Ants, etc.), or invasive plant parts (e.g., Miconia, Mullein, etc.) that could harm our native species and ecosystems. We recommend consulting the Maui Invasive Species Committee (MISC) at

(808) 573-6472 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

DOFAW is concerned about impacts on vulnerable birds from nonnative predators such as cats, rodents, and mongooses. We recommend taking action to minimize predator presence; remove cats, place bait stations for rodents and mongoose, and provide covered trash receptacles.

Due to the arid climate and risks of wildfire to listed species, we recommend coordinating with the Hawai'i Wildfire Management Organization at (808) 850-900 or admin@hawaiiwildfire.org, on how wildfire prevention can be addressed in the project area.

We recommend that Best Management Practices are employed during and after construction to contain any soils and sediment with the purpose of preventing damage to near-shore waters and marine ecosystems.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Myrna N. Girald Pérez, Protected Species Habitat Conservation Planning Coordinator at (808) 265-3276 or myrna.girald-perez@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Wildlife Program Manager

BOWERS + KUBOTA
Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Mr. Russell Tsuji, Land Administrator
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawai‘i 96809

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Mr. Tsuji:

Thank you for both the July 21, 2023 and July 31, 2023 letters providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project. We have the following responses to the comments separated by divisions.

Engineering Division
Thank you for providing information on the federal regulations concerning special flood hazards areas, and the distinction between federal and local community flood ordinances.

The flood hazard zone designations on the subject property have been researched and are discussed in the Draft Environmental Assessment (Draft EA). The Flood Insurance Rate Map and the state’s Flood Hazard Assessment Tool were used to help identify existing flood designations.

Project improvements should have minimal net change in the long-term water demand that now occurs at their current site. Because these operations would be relocated to their new facilities under this Project, the potable water demand from operations should generally remain the same and not have a significant impact on the County’s water supply. Information on water demand and infrastructure required has been included in the Draft EA. The actual water demands and calculations would be provided to the Engineering Division during the project’s design phase when plans are being developed for construction.

Division of Forestry and Wildlife
Thank you for the comments and information on endangered species to be considered. A flora and fauna study has been conducted to assess the project’s effect on avifauna and mammalian resources. The study results have been incorporated in the Draft EA and the report included in the Appendices.

This report addressed the potential of the Hawaiian Hoary Bat being present in the area and identified those measures identified in your letter to avoid impacting this species. There may be a

few woody plants 15 feet or taller in the project area, but their removal should be able to be scheduled outside of the pup rearing season.

The biological study also addressed the presence of seabirds that may occur in the area. No construction activities are anticipated to occur at night that require utilizing bright lights for operational areas. If any outdoor lights are required, they will be shielded to minimize the attraction of seabirds as recommended in the comments. The guidance identified related to seabird-friendly light styles would also be utilized during the project's design phase as construction plans are developed. Outdoor lighting for buildings (e.g. for security) would be shielded to reduce the potential for seabird attraction.

No state-listed waterbirds were identified on the project area as there is no suitable habitat for such waterbirds since these areas do not consist of potential foraging habitat such as lowland streams or tidal mudflats. However, if any such waterbird species are present during construction, the minimization measures identified to avoid effects would apply.

The State-listed Blackburn's Sphinx Moth, its larvae, or eggs were not initially discovered during the biological survey of the project site. To minimize the potential impact of construction activities on the site, the minimization measures identified to avoid effects would apply.

Native plants species would be incorporated into the project's landscaped areas where appropriate. No invasive species would be planted in these areas. Landscaped areas for the project would be maintained and thereby reduce dry grass or brush areas on the property that could help fuel wildfires.

Construction activities would try to minimize the movement of plant or soil material between worksites due to the potential for invasive fungal pathogens or pests being present. The design phase would consider consulting with the Maui Invasive Species Committee to help identify measures to minimize the spread of these pathogens or pests, as appropriate. Best management practices incorporated in design plans would also address cleaning equipment and personnel of excess soil and debris to minimize the risk of spreading invasive species and to prevent damage to nearshore waters and marine ecosystems.

We appreciate your division's comments and the project's design would include necessary efforts to support the conservation of native species. Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

Ronald Sato

From: Martin, Jennifer L (Jen) CIV USARMY CEPOA (USA) <Jennifer.L.Martin@usace.army.mil>
Sent: Wednesday, August 2, 2023 2:54 PM
To: Matthew Fernandez
Cc: Koskelo, Vera B CIV USARMY CEPOH (USA)
Subject: [External] Pre-Assessment Consultation for work at Maui High School campus (Maui District Mowing Facility) located in Kahului, Island of Maui

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Aloha Matthew,
We received your request for a Pre-Assessment Consultation for work at Maui High School campus (Maui District Mowing Facility) located in Kahului, Island of Maui on August 1, 2023. Your request has been assigned to Ms. Vera Koskelo; I've cc'd her on this email and she can be reached by phone at 808-835-4310, in the event you need to contact her. She will let you know if she has any questions in regards to this request.

Mahalo,

Jen Martin
Interim Chief, Regulatory Branch
US Army Corps of Engineers, Honolulu District
808-835-4300

-----Original Message-----
From: Young, Kris S CIV USARMY CEPOH (USA) <Kris.S.Young@usace.army.mil>
Sent: Tuesday, August 1, 2023 1:33 PM
To: Scott, Lisa M CIV USARMY CEPOH (USA)
<https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.proofpoint.com%2Fv2%2Furl%3Fu%3Dhttp-3A__Lisa.M.Scott-40usace.army.mil%26d%3DDwIFAg%26c%3DeuGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpgnVfiiMM%26r%3DW8FAnsdTjZZKnvBm2VsIAtWKBKyb1t9whMdB0ieKRtQ%26m%3DRDhgdndf2W2vuoJ7i1tzQcgkKB7f3053n4qwua081O0q3llUMpp9E3JMsTgnWN4l%26s%3DmhhbMVX-IiNSRQyXFsoujYGYpTqgoCn5_jnmrT3SgnI%26e%3D&data=05%7C01%7Cmfernandez%40bowersandkubota.com%7C42dde2897e2c47c1f04608db93bc3594%7Cc45502e23c6442ebb41e8577bc9b6d38%7C0%7C0%7C638266208819283690%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=a38%2BBjNcZfKJ1TxzkgOLmk4VX9RELFNzSqOMHa2JEsU%3D&reserved=0>; Martin, Jennifer L (Jen) CIV USARMY CEPOA (USA)
<https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.proofpoint.com%2Fv2%2Furl%3Fu%3Dhttp-3A__Jennifer.L.Martin-40usace.army.mil%26d%3DDwIFAg%26c%3DeuGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpgnVfiiMM%26r%3DW8FAnsdTjZZKnvBm2VsIAtWKBKyb1t9whMdB0ieKRtQ%26m%3DRDhgdndf2W2vuoJ7i1tzQcgkKB7f3053n4qwua081O0q3llUMpp9E3JMsTgnWN4l%26s%3Dpmk9enu1tTQ24dbBOhPAyCI-ypI8TM8QLrlSLU1J4ml%26e%3D&data=05%7C01%7Cmfernandez%40bowersandkubota.com%7C42dde2897e2c47c1f04608db93bc3594%7Cc45502e23c6442ebb41e8577bc9b6d38%7C0%7C0%7C638266208819439920%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=%2BKJMYm9gX%2FuQYiZYvNSjncGNgaUO609zLb4y3OrOHbo%3D&reserved=0>
Subject: Document

Aloha,

We received the attached document. CDR requested we send to you.

Very Respectfully,

Ms. Kris S. Young
Staff Action Control Officer (SACO)
U.S. Army Corps of Engineers, Honolulu District
Office: 808-835-4001
Mobile: 808-853-7174
Kris.S.Young@usace.army.mil

BOWERS + KUBOTA
Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Jen Martin, Interim Chief
Regulatory Branch
Honolulu District
U.S. Army Corps of Engineers
Public Affairs Office, Room 302
Fort Shafter, Hawai‘i 96858-5440

Via Email: Jennifer.L.Martin@usace.army.mil

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Ms. Martin:

Thank you for the August 02, 2023 email providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

We appreciate the information regarding Ms. Vera Koskelo who has been assigned to provide comments on the project. Ms. Koskelo would be invited to provide any comments during the review phase of the Draft EA when published.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

COUNTY COUNCIL

COUNTY OF MAUI
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793
www.MauiCounty.us

July 6, 2023

Bowers + Kubota Consulting
Attn: Matthew Fernandez
2153 N King Street, Suite 200
Honolulu, Hawaii 96819-4554

Via email: mfernandez@bowersandkubota.com

Dear Mr. Fernandez:

SUBJECT: **HRS CHAPTER 343 PRE-ASSESSMENT CONSULTATION FOR MAUI DISTRICT MOWERS AND COMMUNITY SCHOOL FOR ADULTS, DEPARTMENT OF EDUCATION, TMK (2) 3-8-007: 098**

Thank you for your June 21, 2023 letter requesting comments on the above-referenced project.

I have no objections to the project, I and appreciate the Department of Education being pro-active in relocating the Community School for Adults (CSA) from its current site across from Queen Kaahumanu Center, which is being redeveloped by the State. While it is unfortunate that the CSA cannot be incorporated into the redevelopment, given its highly accessible location, the new location adjacent to Maui High School is also accessible by the Maui Bus. For comments relating to required improvements, permitting, entitlements and other ministerial processes, I would defer to the relevant commenting agencies.

Should you have any questions, please feel free to contact me or Executive Assistant Michele McLean at michele.mclean@mauicounty.us.

Sincerely,

ALICE L. LEE
Council Chair

O:Chr:Ltr:230706a BowersKubota343Consultation

BOWERS + KUBOTA
Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Alice L. Lee, Council Chair
County Council
County of Maui
200 S. High Street
Wailuku, Maui 96793

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Council Chair Lee,

Thank you for the July 06, 2023 letter providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

We confirm that you have no objections to the project and the information provided so far as part of the preassessment consultation for the project’s Draft EA.

We appreciate your thoughts on incorporating the McKinley School for Adults (MCSA) within the new redevelopment on the current site. A discussion of this would be included as an alternative in the Draft EA. However, this alternative has been eliminated from further consideration because it would not support the project need and objectives as would be explained in the EA. A copy of the Draft EA will be provided to you for review when published.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

From:	Liu, Rouen
To:	Matthew Fernandez
Cc:	Kakazu, Lisa; Kuwaye, Kristen; Decker, Shayna; McNeff, Mathew
Subject:	[External] RE: EA Pre-consultation - Relocation of DOE Maui District Mowers and Community School for Adults Project
Date:	Tuesday, July 25, 2023 2:16:39 PM
Attachments:	B&K.pdf

Dear Mr. Fernandez,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed DOE Maui District Mowers and Community School project comes to fruition, please continue to keep us informed.

Please contact me at 808-772-2135 should there be any questions.

Rouen Liu (WA3 – PTA)
Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu Hawaii 96840-0001

BOWERS + KUBOTA
Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Rouen Liu, Permits Engineer
Hawaiian Electric Company
P.O. Box 2750
Honolulu, Hawai‘i 96840

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Mr. Liu,

Thank you for the July 25, 2023 email providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

We confirm that HECO has no objections to the project and the information provided so far as part of the preassessment consultation for the project’s Draft EA.

We acknowledge that HECO would need continued access to its easements and facilities if any are within the project area. A copy of the Draft EA will be provided to HECO for review when published.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

From: Thirugnanam, Jeyan
To: Matthew Fernandez
Subject: [External] Maui District Mowers and Community School for Adults
Date: Friday, July 14, 2023 3:09:17 PM

Pre-Assessment Consultation Request
Maui District Mowers and Community School for Adults
660 Lono Avenue - Kahului, Maui
Tax Map Key: (2) 3-8-007: 098

Thank you for your letter dated June 21, 2023, requesting our comments on the subject projects. The Department of Education (DOE) is preparing for an upcoming Draft Environmental Assessment (DEA) required by Chapter 343, Hawaii Revised Statutes, due to the use of state lands and state funds. The project proposes to establish a relocation for both, the DOE's Maui District Mower Facility (MDMF) and the Community School for Adults (CSA) from its current sites to the existing Maui High School.

The MDMF proposes to be merged with the existing mower storage facility within the high school site. The proposed work includes seven additional parking spaces, wash area, service area and storage for trucks/trailers. The proposed work for the CSA includes the construction of a one-story building totaling 9,200 square feet and an additional parking lot with 47 spaces.

Two proposed access driveways will be constructed on West Papa Avenue; a county roadway near the State Kuihelani Highway (Route 380).

We recommend information be provided such as the proposed classroom capacity, classroom schedules, and/or daily operation hours. An evaluation should be provided on whether the proposed building and operation will have any local impacts on the roadways or nearby state highways. The information and assessment should be provided in the DEA, and if relevant, a Traffic Assessment or a Traffic Impact Analysis Report to be prepared by a Traffic Engineer licensed with the State of Hawaii.

If you have any questions, please contact Jeyan Thirugnanam, Land Use Planning Engineer, Highways Planning Branch at (808) 587-6336 or by email at jeyan.thirugnanam@hawaii.gov. Please reference file review numbers PL2023-067.

BOWERS + KUBOTA
Construction Management · A/E Design · Planning · Project Management

April 16, 2024

Ms. Jeyan Thirugnanam, Land Use Planning Engineer
Highways Planning Branch
Department of Transportation
State of Hawai‘i
870 Punchbowl Street, Room 513
Honolulu, Hawai‘i 96813

Via Email: jeyan.thirugnanam@hawaii.gov

SUBJECT: Relocation of DOE District Mowers and Community School for Adults
Pre-Assessment Consultation for Environmental Assessment
TMK: (2) 3-8-007: 098
Kahului, Maui, Hawai‘i

Dear Ms. Thirugnanam:

Thank you for the July 14, 2023 email providing pre-assessment consultation comments associated with the preparation of an Environmental Assessment (EA) for the subject project.

The design of the project now includes only one proposed access driveway instead of two that would connect to West Papa Avenue. Information on proposed classroom capacity, class schedules, and daily operating hours for both facilities would be provided in the Draft EA. A Traffic Impact Report by a licensed Traffic Engineer has been prepared for the project and the report and its findings will be included in the Draft EA. A copy of the Draft EA will be provided to your department for review when published.

Thank you for providing us with your comments and participating in the process. If you have any questions, please contact me at (808) 836-7787 or mfernandez@bowersandkubota.com.

Sincerely,

Matthew Fernandez
Planner

APPENDIX A-2

Draft EA Comments and
Response Letters

From: Liu, Rouen
To: Matthew Fernandez
Cc: McNeff, Mathew; Decker, Shayna; Yamasaki, Craig; Nagata, Sarah; Kuwaye, Kristen
Subject: RE: State DOE, Relocation of DOE Maui District Mowers Facility and CSA, DRAFT EA
Date: Friday, May 10, 2024 3:22:36 PM
Attachments: 240508 HECO Participant Ltr.pdf

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Hi Mr. Fernandez,
Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project Draft EA. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Maui District Mowers Facility and CSA project comes to fruition, please continue to keep us informed.

Please contact me at 808-772-2135 should there be any questions.

Rouen Liu (WA3 – PTA)
Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu Hawaii 96840-0001

From: Matthew Fernandez <mfernandez@bowersandkubota.com>
Sent: Friday, May 10, 2024 9:00 AM
To: Liu, Rouen <rouen.liu@hawaiianelectric.com>
Subject: State DOE, Relocation of DOE Maui District Mowers Facility and CSA, DRAFT EA

[This email is coming from an EXTERNAL source. Please use caution when opening attachments or links in suspicious email.]

Hello,

The State of Hawai‘i (State), Department of Education, Office of Facilities and Operations (DOE) is proposing to relocate and develop two new buildings on an undeveloped area within a larger State-owned property that is used by Maui High School. The project area would utilize approximately 2.2-acres of the 6.5-acres of the school property’s undeveloped space. The two proposed DOE buildings are for the Maui District Mowers Facility and the McKinley School for Adults Maui Campus (MCSA). This project is referred to as the “Relocation of the DOE Maui

District Mowers Facility and Community School for Adults Project."

A Draft Environmental Assessment (Draft EA) document has been prepared for this project with an Anticipated Finding of No Significant Impact determination being considered. This Draft EA is now published and made available to the public to review on May 08, 2024, and to provide written comments.

Attached is a Participant Letter with more information on where to download the document and submit comments.

Mahalo!

Matthew Fernandez
Bowers + Kubota
HawaiiBusiness' 2024 Best Places to Work

Main Office: (808) 836-7787 / (808) 833-1841
Fax: (808) 834-4833
www.bowersandkubota.com

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS
(sent via rouen.liu@hawaiianelectric.com)

January 21, 2025

Mr. Rouen Liu
Permits Engineer
Hawaiian Electric Company
P.O. Box 2750
Honolulu, HI 96840

Re: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Dear Mr. Liu:

Thank you for the email dated May 10, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project. The Department acknowledges that the Hawaiian Electric Company (HECO) has no objection to the project's Draft EA and that continued access to HECO's existing easements and facilities on the site should be maintained.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

Sincerely,

Jadine Urasaki
Jadine Urasaki (Jan 21, 2025 20:55 HST)

Jadine Urasaki
Public Works Administrator
Facilities Development Branch

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

From: DOH.CABPDTSS
To: Matthew Fernandez
Subject: [External] DOH-CAB comments on DEA-AFNSI for the proposed Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults
Date: Friday, May 10, 2024 2:13:39 PM

Subject: The Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFNSI) for the proposed Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults

Agency: Department of Education
Jenny Ho
jenny.ho@k12.hi.us
(808)784-5122
P.O. Box 2360
Honolulu, Hawaii
96804 United States

Consultant: Bowers and Kubota Consulting, Inc.
Matthew Fernandez
mfernandez@bowersandkubota.com
(808) 836-7787
2153 North King Street,
Suite 200
Honolulu, HI
96819 United States

Aloha,

Thank you for the opportunity to provide comments on the subject DEA-AFNSI for the relocation of the Department. The Clean Air Branch would like to make the following comments on the subject DEA:

- For construction and other activities associated with the project, the applicable provisions of Hawaii Administrative Rules §11-60.1-33 shall be followed to mitigate fugitive dust impacts.
- Also, please see our standard comments at:

https://health.hawaii.gov/cab/files/2022/05/Standard-Comments-for-Land-Use-Reviews-Clean-Air-Branch-2022-1.pdf

Please let us know if you have any questions or concerns.

Anna

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

TO: Marianne Rossio, P.E., Chief
Clear Air Branch
Hawaii State Department of Health

FROM: Jadine Urasaki Jadine Urasaki (Jan 21, 2025 20:56 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated May 10, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department recognizes that the provisions of Hawaii Administrative Rules §11-60.1-33, along with the Standard Comments for Land Use Reviews by the Hawaii State Department of Health, Clean Air Branch, apply to the construction and related activities for the project to mitigate fugitive dust impacts. These best management practices would be described in construction plans and specifications to minimize the discharge of air pollutants before and after construction.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

From: DSA@mauicounty.gov (DSA)
To: Matthew Fernandez
Cc: Wade Shimabukuro
Subject: Re: State DOE, Relocation of DOE Maui District Mowers Facility and CSA, DRAFT EA
Date: Sunday, May 12, 2024 12:43:32 AM
Attachments: 240508 County DPW DSA Participant Ltr.pdf

DSA has no comments on the EA. Normal permit review and requirements will apply when construction permits are applied for.

Lance Nakamura
Assistant Administrator
DSA
>>> Matthew Fernandez <mfernandez@bowersandkubota.com> 5/10/2024 9:17 AM >>>

Hello,

The State of Hawai'i (State), Department of Education, Office of Facilities and Operations (DOE) is proposing to relocate and develop two new buildings on an undeveloped area within a larger State-owned property that is used by Maui High School. The project area would utilize approximately 2.2-acres of the 6.5-acres of the school property's undeveloped space. The two proposed DOE buildings are for the Maui District Mowers Facility and the McKinley School for Adults Maui Campus (MCSA). This project is referred to as the "Relocation of the DOE Maui District Mowers Facility and Community School for Adults Project."

A Draft Environmental Assessment (Draft EA) document has been prepared for this project with an Anticipated Finding of No Significant Impact determination being considered. This Draft EA is now published and made available to the public to review on May 08, 2024, and to provide written comments.

Attached is a Participant Letter with more information on where to download the document and submit comments.

Mahalo!

Matthew Fernandez
Bowers + Kubota
HawaiiBusiness' 2024 Best Places to Work

Main Office: (808) 836-7787 / (808) 833-1841
Fax: (808) 834-4833
www.bowersandkubota.com

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 22, 2025

Mr. Lance Nakamura
Assistant Administrator
Development Services Administration
Department of Public Works
County of Maui
110 Alaihi Street, Suite 214
Kahului, Hawaii 96732

Re: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Dear Mr. Nakamura:

Thank you for the email dated May 12, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledges that Maui County's Department of Public Works, Development Services Administration, has no comments to provide on the subject Draft EA, and that normal permit review and requirements would apply for the project's construction permits.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

Sincerely,

Jadine Urasaki
Jadine Urasaki (Jan 22, 2025 16:12 HST)

Jadine Urasaki
Public Works Administrator
Facilities Development Branch

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

KEITH A. REGAN
COMPTROLLER
KA LUNA HO'OMALU HANA LAULĀ

MEOH-LENG SILLIMAN
DEPUTY COMPTROLLER
KA HOPE LUNA HO'OMALU HANA LAULĀ

STATE OF HAWAI'I | KA MOKU'ĀINA O HAWAI'I
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWE LAULĀ
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)24.103

MAY 15 2024

Matthew Fernandez
Bowers and Kubota Consulting, Inc.
2153 N. King Street, Suite 200
Honolulu, Hawaii 96819

Dear Matthew Fernandez:

Subject: Draft Environmental Assessment Publication Notice
State Department of Education, Office of Facilities and Operations
Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults Project
Kahului, Maui, Hawaii
T.M.K. # (2) 3-8-098

Thank you for the opportunity to comment on the subject project. Both the Maui District Mowers Facility and Community School for Adults are currently located at the Kahului Civic Center site; therefore, the Department of Accounting and General Services request to be informed of any progress and review of future developments.

If you have any questions, your staff may call Dora Choy-Johnson of the Planning Branch at (808) 586-0488.

Sincerely,

GORDON S. WOOD
Acting Public Works Administrator

DC:mc
c: Jeff Pearson, MDO

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

TO: Gordon S. Wood
Public Works Administrator
Department of Accounting and General Services

FROM: Jadine Urasaki Jadine Urasaki (Jan 21, 2025 20:56 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated May 15, 2024, providing comments on the Draft Environmental Assessment for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers (MDM) and Community School for Adults (CSA) project.

The Department recognizes that both the MDM facility and the CSA are currently located at the future site of the Kahului Civic Center. The subject project would relocate both facilities to the undeveloped site on the Maui High School (MHS) property while the current site is being redeveloped. Once the designated space for the CSA in the Kahului Civic Center is completed, only the CSA will relocate back to its original location. The MDM facility would permanently reside in its new location. The CSA facility on the MHS property would then be transferred to MHS for its use. The Department of Accounting and General Services would be kept informed of any progress and review of future developments.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

RICHARD T. BISSEN, JR.
Mayor

LORI TSUHAKO
Director

SAUMALU MATA'AFA
Deputy Director

DEPARTMENT OF HOUSING
& HUMAN CONCERNS
COUNTY OF MAUI
2200 MAIN STREET, SUITE 546
WAILUKU, MAUI, HAWAI'I 96793
PHONE: (808) 270-7805

May 16, 2024

Matthew Fernandez, Planner
Bowers and Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Fernandez:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT PUBLICATION NOTICE STATE DEPARTMENT OF EDUCATION, OFFICE OF FACILITIES AND OPERATIONS RELOCATION OF THE DEPARTMENT OF EDUCATION'S MAUI DISTRICT MOWERS FACILITY AND COMMUNITY SCHOOL FOR ADULTS PROJECT, KAHULUI, MAUI, HAWAI`I, TMK (2) 3-08-007:098

The Department has reviewed the information submitted for the above subject project. Based on our review, we have determined that the project is not subject to Chapter 2.96, Maui County Code, and does not require a residential workforce housing agreement. At the present time, the Department has no additional comments to offer.

Please contact Mr. Buddy Almeida, Housing Administrator, at (808) 270-7351 if you have any questions.

Sincerely,

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

cc: Buddy Almeida, Housing Administrator

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

Ms. Lori Tsuhako
Director
Department of Human Concerns
County of Maui
2200 Main Street, Suite 546
Wailuku, HI 96793

Re: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Dear Ms. Tsuhako:

Thank you for the email dated May 16, 2024, providing comments on the Draft Environmental Assessment for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledges that the project is not subject to Maui County Code Chapter 2.96 and does not require a residential workforce housing agreement.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

Sincerely,

Jadine Urasaki
Jadine Urasaki (Jan 21, 2025 20:57 HST)

Jadine Urasaki
Public Works Administrator
Facilities Development Branch

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

RICHARD T. BISSEN, JR.
Mayor

SHAYNE R. AGAWA, P.E.
Director

ROBERT SCHMIDT
Deputy Director

MICHAEL KEHANO, P.E.
Solid Waste Division

ERIC A. NAKAGAWA, P.E.
Wastewater Reclamation Division

Environmental Protection &
Sustainability Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2145 KAOHU STREET, SUITE 102
WAILUKU, MAUI, HAWAI'I 96793

May 20, 2024

Matthew Fernandez
Bowers and Kubota Consulting, Inc.
via email: mfernandez@bowersandkubota.com

SUBJECT: Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults, DOE Job No. Q55287-21
TMK: (2) 3-8-007:098, 795 Onehee Ave, Kahului, Maui

Dear Matthew Fernandez:

Thank you for the opportunity to comment on the Draft EA for the subject project. According to page 78 of draft EA, the proposed buildings will connect to an existing sewer line servicing Maui High School that are projected to generate about 7,040 gallons per day of wastewater. Before the building permit is issued, this number shall be verified by calculations that are signed and stamped by a State of Hawaii licensed engineer using the Department's Wastewater Flow Standards as a guideline.

Also, please note that non-contact cooling water and condensate should not drain to the wastewater system.

If you require more information or have any questions, please contact Tammy Yeh at tammy.yeh@co.maui.hi.us or at (808) 270-5798.

Sincerely,

Digitally signed by Eric Nakagawa
Date: 2024.05.20 11:42:10 -10'00'

ERIC A. NAKAGAWA, P.E.
Division Chief

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

Mr. Eric A. Nakagawa, P.E.
Division Chief
Wastewater Reclamation Division
Department of Environmental Management
County of Maui
2200 Main Street, Suite 610
Wailuku, HI 96793

Re: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Dear Mr. Nakagawa:

Thank you for the email dated May 20, 2024, providing comments on the Draft Environmental Assessment for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project. The Department acknowledges that the amount of wastewater generated from the project shall be verified with calculations done by a State of Hawaii licensed engineer using the Department's Wastewater Flow Standards as a guideline prior to the issuance of a building permit.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

Sincerely,

Jadine Urasaki
Jadine Urasaki (Jan 21, 2025 20:57 HST)

Jadine Urasaki
Public Works Administrator
Facilities Development Branch

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR 0000430
STP 8.3756

June 4, 2024

VIA EMAIL: mfernandez@bowersandkubota.com

Mr. Matthew Fernandez, Planner
Bowers and Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Fernandez:

Subject: Draft Environmental Assessment
State Department of Education, Office of Facilities and Operations
Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults Project
Kahului, Maui, Hawaii
Tax Map Keys: (2) 3-8-007: 098

Thank you for your letter, dated May 6, 2024, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the Draft Environmental Assessment (DEA) for the subject project. HDOT understands the State of Hawaii, Department of Education, Office of Facilities and Operations (DOE) is proposing to relocate the McKinley Community School for Adults and DOE's Maui District lawnmower maintenance and operation facility and construct two new buildings on an approximately 2.2-acre portion of an undeveloped 6.5-acre area within the property where Maui High School is located.

HDOT has the following comments:

1. HDOT has reviewed the November 2023 Traffic Impact Analysis Report provided in the DEA, which identified a low volume of vehicular traffic generation. Therefore, the proposed action would have no anticipated adverse impacts to state highways.

2. The proposed project is approximately 1.4 miles from the property boundary of Kahului Airport (OGG). All projects within 5 miles of Hawaii State airports are advised to read the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM can be viewed at this link: http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf

3. Due to the project's proximity to OGG, the applicant and future users should be aware of

potential single-event noise from aircraft operations. There is also a potential for fumes, smoke, vibrations, odors, etc., resulting from occasional aircraft flight operations over or near the project. These incidences may increase or decrease over time and are dependent on airport operations.

4. The proposed project shall not provide landscape and vegetation that will create a wildlife attractant, which can potentially become a hazard to aircraft operations. Please review the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33C, Hazardous Wildlife Attractants On Or Near Airports for guidance. If the project's landscaping creates a wildlife attractant, the applicant shall immediately mitigate the hazard upon notification by the HDOT and/or FAA.

Please submit any subsequent land use entitlement-related requests for review or correspondence to the HDOT Land Use Intake email address at DOT.LandUse@hawaii.gov.

If there are any questions, please contact Mr. Blayne Nikaido, Planner, Land Use Section of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

EDWIN H. SNIFFEN
Director of Transportation

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

TO: Edwin Sniffen
Director of Transportation, Department of Transportation

FROM: Jadine Urasaki Jadine Urasaki (Jan 21, 2025 20:58 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated June 4, 2024, providing comments on the Draft Environmental Assessment for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project. The Department has the following responses corresponding to your numbered comments.

1. The Department appreciates the Department of Transportation's (DOT) review of the Traffic Impact Analysis Report conducted for the project and for its determination that the project would have no anticipated adverse impacts to state highways due to the low volume of vehicular traffic generated.

2. The Department appreciates the information provided regarding the Technical Assistance Memorandum that is in regulation with the Federal Aviation Administration's Order 5190.6B. This document will be reviewed as part of the project's design to determine if it may require further review and permits.

3. The Department recognizes the proximity of Kahului Airport from the project site and the potential for single-event noise from aircraft operations. The Department also acknowledges the potential effects from other factors associated with occasional aircraft flight operations (i.e., noise, fumes, smoke, vibrations, etc.) near the project site.

4. The project would not provide landscaping such as water features that could create a wildlife attractant that can potentially become a hazard to aircraft operations. Landscaping would

mainly consist of a combination of gravel and open grass lawn areas that will support infiltration and reduce soil erosion along with several non-fruit bearing trees in the parking lot. The Department's design team will review the Federal Aviation Administration's (FAA) Advisory Circular on hazardous wildlife attractants for guidance. If the proposed landscaping does create a wildlife attractant, the Department will mitigate the hazard upon notification by FAA and/or DOT.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR
KE KIAʻĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HOʻOKELE

Deputy Directors
Nā Hope Luna Hoʻokele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF TRANSPORTATION | KA ʻOIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY 3057
HWY-RM 3.98732

June 6, 2024

Mr. Matthew Fernandez
Bowers + Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Fernandez:

Subject: Draft Environmental Assessment Publication Notice
Hawaii Department of Education (HDOE), Office of Facilities and Operations
Relocation of HDOE's Maui District Mowers Facility and
Community School for Adults Project
Kahului, Maui, Hawaii, Tax Map Key No. (2) 3-8-007:098

Thank you for your letter dated May 6, 2024, and draft environmental assessment publication notice in connection with the subject project. The Hawaii Department of Transportation has no comments in regards to the draft environmental assessment documentation.

Should you have any questions, please contact Kemamo Ho, Right-of-Way Agent, of our Right-of-Way Branch at (808) 692-7322 or by email at kemamo.kl.ho@hawaii.gov.

Sincerely,

SERGIO GEORGE G. ABCEDE
Highways Administrator

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

TO: Lawrence Dill
Highways Administrator, Highways Division
Department of Transportation

FROM: Jadine Urasaki Jadine Urasaki (Jan 21, 2025 20:59 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

The Hawaii State Department of Education (Department) received Kira Martin's email, dated June 6, 2024, with a letter signed by Sergio Abcede providing comments on the Draft Environmental Assessment (EA) for the Department's Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledge that the State Department of Transportation, Highways Division, has no comments regarding the subject project's Draft EA.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

RICHARD T. BISSEN, JR.
Mayor

KATE L. K. BLYSTONE
Director

ANA LILLIS
Deputy Director

DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAI'I 96793

June 7, 2024

Ms. Jenny Ho
Hawai'i Department of Education
Facilities Development Branch
3633 Waialae Avenue
Admin Building, 2nd Floor
Honolulu, Hawai'i 96816

Mr. Matthew Fernandez
Bowers + Kubota Consulting, Inc.
1955 Main Street, Suite 400
Wailuku, Hawai'i 96793

Dear Ms. Ho and Mr. Fernandez,

SUBJECT : REQUEST FOR COMMENT ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE RELOCATION OF THE HAWAI'I DEPARTMENT OF EDUCATION (DOE) MAUI DISTRICT MOWERS FACILITY AND COMMUNITY SCHOOL FOR ADULTS FROM 179 KA'AHUMANU AVENUE, KAHULUI, MAUI, HAWAI'I; (TMK: (2) 3-7-004:003), TO 660 LONO AVENUE, KAHULUI, MAUI, HAWAI'I; (TMK: (2) 3-8-007:098) (DOE JOB NO.: Q55287-21) (RFC2024-00038)

The Department of Planning (Department) is in receipt of your request for comment (RFC), received on May 08, 2024, regarding a Draft Environmental Assessment (DEA) for the relocation of the Hawai'i Department of Education (DOE) Maui District Mowers Facility and Community School for Adults from it's current location at 179 Ka'ahumanu Avenue, Kahului, Hawai'i to the future location at 660 Lono Avenue, Kahului, Hawai'i. The proposal constitutes the demolition of the existing facility and construction of a new facility, including a one-story structure and parking lot for the Maui District Mowers Facility, and a one-story structure and parking lot for the McKinley School for Adults Maui Campus program. Additionally, the project proposes the construction of a new driveway connecting the new facilities to West Papa Avenue, landscaping, boundary fencing, and infrastructure, including electrical, telecommunications, water, sewer, and drainage utilities. The DEA anticipates a Finding Of No Significant Impact (FONSI).

Based on the foregoing, the Department provides the following comments in preparation of a Final Environmental Assessment.

1. The table below verifies the land use attributes and values for the parcel with TMK (2) 3-8-007:098, located at 660 Lono Avenue, Kahului, Maui, Hawai'i, including the Maui County Zone designation of R-2 Residential (R-2) (see attached). The Maui County Zone for the current facility is B-2 Business – Community (B-2) (see attached). The relevant permitted use for R-2 allows buildings to be used by State governments for public purposes (Maui County Code sub-section 19.08.020(E)). The machine repair (within a completely closed building) and parking lots (Maui County Code Section 19.18.020) align with B-2 for the existing location but are inconsistent with the general intent for R-2. Therefore, the Department recommends that landscaping create a vegetative boundary screen either in front or behind the proposed boundary fence, simultaneously reducing noise pollution and view degradation as a method for limiting the neighborhood impact.

State Land Use	Urban
Maui County Zone	R-2 Residential (R-2)
Community Plan	Wailuku-Kahului
Community Plan Zone	Park
Maui Island Plan: Growth Area	Outside
Maui Island Plan: Growth Boundary	Urban

2. The proposed action includes constructing and installing public and private utilities to service the proposed facilities. These utilities include sewer, water, drainage, solid waste, electrical, and telecommunication infrastructure (p77). The new McKinley School for Adults Maui Campus includes a computer classroom, large office spaces, and a test center (p12) requiring many computers and possibly servers, which may require a sizeable amount of electricity. Also, the new facilities will need electricity to maintain a temperature-controlled environment to keep the facility, equipment, and patrons cool. Therefore, the Department recommends that the DOE consider incorporating solar energy into the proposed project.

The Department thanks you for your cooperation. If additional clarification is necessary, please contact Staff Planner Kevin Spellman by email at kevin.spellman@co.maui.hi.us or at 808-270-7378.

Sincerely,

FOR: KATE L. K. BLYSTONE
Planning Director

Copy to: Kate L. K. Blystone Planning Director (PDF)
Danny A. Dias, Planning Program Administrator (PDF)
Kurt F. Wollenhaupt, Land Use Planning Supervisor (PDF)
Kevin Spellman,Hawai`I Department of Education, Staff Planner (PDF)
Jenny Ho, Bowers + Kubota Consulting, Inc., Applicant (PDF)
Matthew Fernandez, Applicant (PDF)

KS:rma
K:\WP_DOCS\Planning\RFC\2024\00038_EA-DRAFT_DOE\RFC202400038_letter_assessment_EA-draft-DOE-final_2024.docx

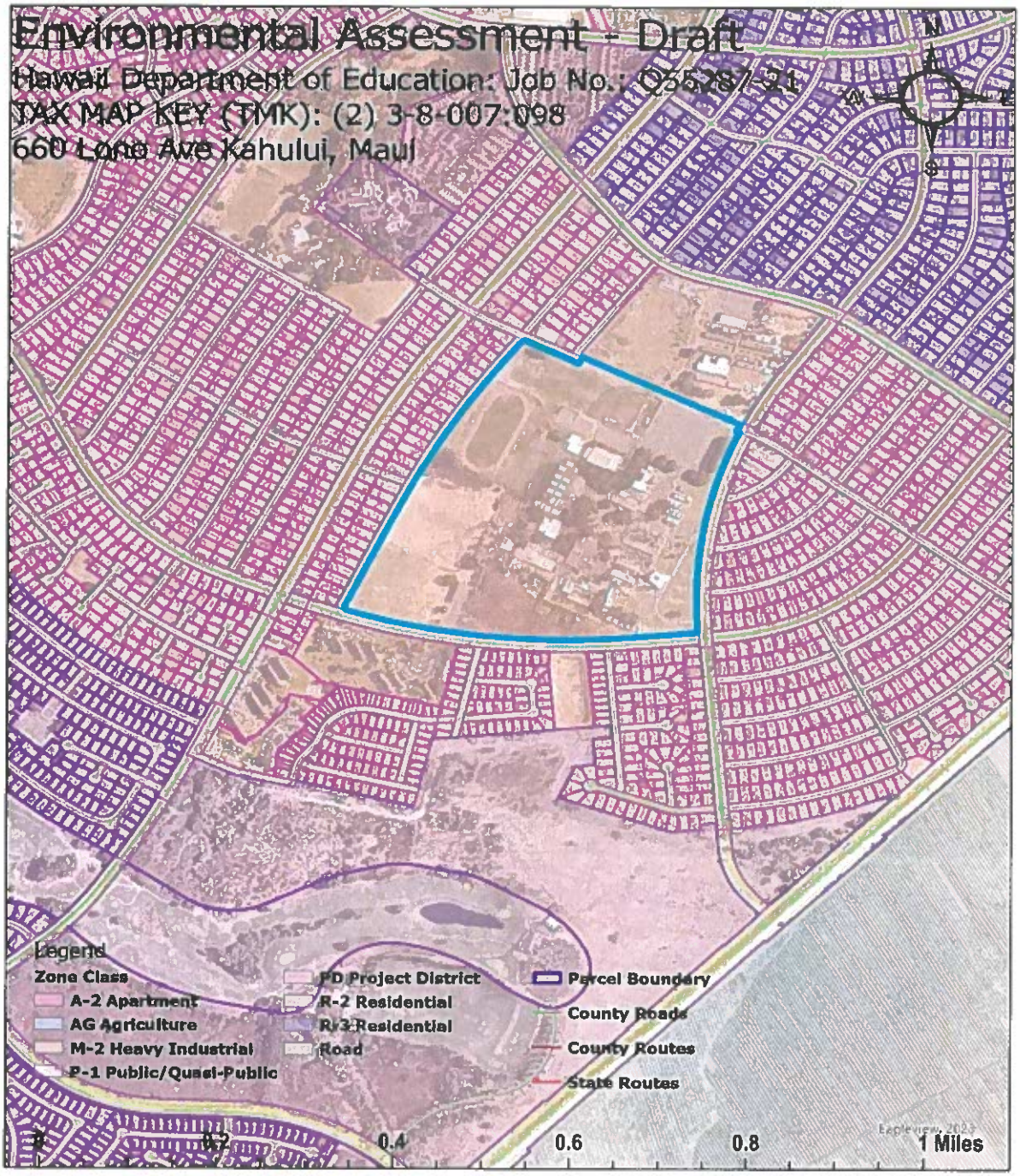


Figure 1: 2023 Pictometry base map, ArcGIS Pro (v.3.0.0, 2022), Esri Inc, Parcels - Maui County (Updated May 17, 2023), Hawaii Statewide GIS Program (2017), Parcels - Maui County (Updated May 28, 2024), 660 Lono Ave Kahului, Maui, Hawai'i (TMK: (2) 3-8-007:098). The center of the highlighted parcel's southern boundary is the project area, displaying a slightly brown color representing the existing scrub bush. The surrounding parcels with a somewhat peach hue are county zone R-2 Residential and the parcels with a slightly purple hue are county zone R-3 Residential, constituting all immediately abutting and adjacent parcels.

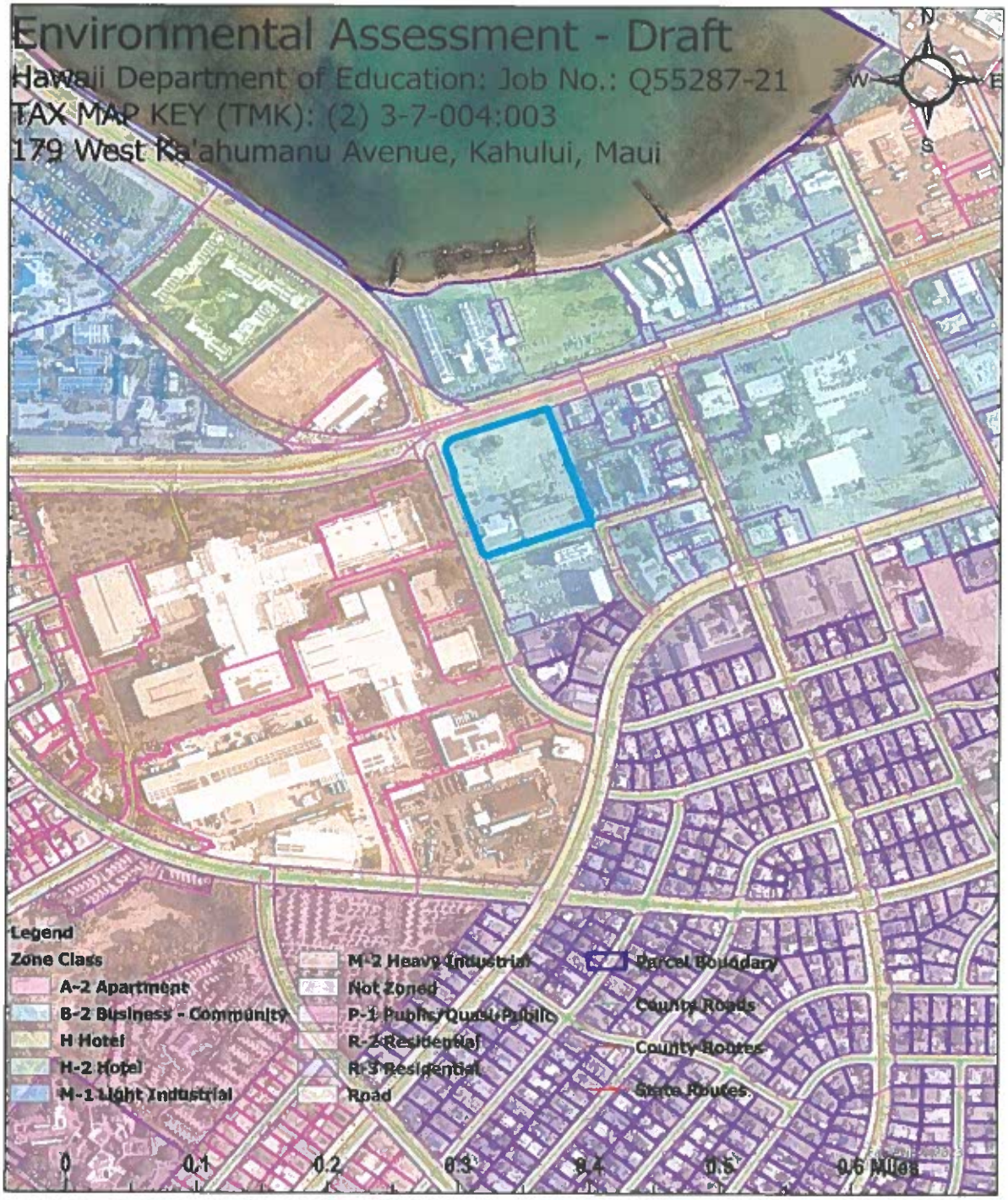


Figure 2: 2023 Pictometry base map, ArcGIS Pro (v.3.0.0, 2022), Esri Inc. Parcels - Maui County (Updated May 17, 2023), Hawaii Statewide GIS Program (2017). Parcels - Maui County (Updated May 28, 2024), 179 West Ka'ahumanu Avenue, Kahului, Maui, Hawai'i (TMK: (2) 3-7-004:003). The highlighted subject parcel exhibits a slightly green hue and has a county zone of B-2 Business - Community (B-2). Adjacent to the west is the Ka'ahumanu Shopping Center with a county zone of M-2 Heavy Industrial. Adjacent to the north across Ka'ahumanu Avenue are county zones B-2 and H-2 Hotel. Abutting to the east are additional B-2 parcels.

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 21, 2025

Ms. Kate Blystone
Planning Director
Department of Planning
County of Maui
2200 Main Street, Suite 315
Wailuku, Hawaii 96793

Re: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Dear Ms. Blystone:

Thank you for the email dated June 7, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers (MDM) and Community School for Adults project. The Department has the following responses corresponding to your numbered comments

1. The Department acknowledges the Department of Planning's (DPP) recommendation to incorporate a vegetative boundary screen in front of or alongside the MDM's facility. This proposed measure aims to reduce noise pollution and visual impact on the surrounding neighborhood. The project design will include this vegetative boundary screen or a similar feature to mitigate the effects on the surrounding neighborhood. A discussion of landscaping improvements planned will be added to the Final EA.

2. The Department also recognizes DPP's recommendation for the Department to consider incorporating solar energy to support the electrical needs of the proposed project. The Department has been actively working on renewable energy initiatives for its schools and has set a goal to reduce its reliance on fossil fuel-based energy by 90 percent by 2040 with the direction of the Hawaii State Board of Education and the passage of Act 96, Session Law of Hawaii 2006. Specifically, the Department has installed or is in the process of

constructing solar photovoltaic (PV) systems for 32 schools on Oahu and 15 schools on Kauai. If additional funding becomes available in the future, the Department may consider including Maui High School in its list of schools for installing solar PV systems. These systems would help to power the campus, including the proposed new buildings.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

Sincerely,

Jadine Urasaki
Jadine Urasaki (Jan 21, 2025 20:59 HST)

Jadine Urasaki
Public Works Administrator
Facilities Development Branch

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 10, 2024

Bowers & Kubota Consulting, Inc.
Attn: Mr. Matthew Fernandez, Planner via email: mfernandez@bowersandkubota.com
2153 N King Street, Suite 200
Honolulu, Hawaii 96819
Ph. No. (808) 836-7787

Dear Mr. Fernandez:

SUBJECT: Draft Environmental Assessment for Relocation of the **DOE's Maui District Mowers Facility and Community School for Adults** located at 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098 on behalf of the State of Hawaii Department of Education

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Land Division-Maui District on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 13, 2024

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (daniel.l.ornellas@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for Relocation of the **DOE's Maui District Mowers Facility and Community School for Adults**
LOCATION: 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098
APPLICANT: Bowers & Kubota on behalf of the State of Hawaii Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on May 8, 2024, by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2024-05-08-TEN.pdf

Please submit any comments by **June 6, 2024**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
(✓) We have no additional comments.
( ) Comments are included/attached.

Signed: *CSC*
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: 06/03/2024

Attachments
cc: Central File

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 22, 2025

TO: Carty Chang, P.E.
Chief Engineer, Engineering Division
Department of Land and Natural Resources

FROM: Jadine Urasaki Jadine Urasaki (Jan 22, 2025 11:45 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated June 10, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledges that the Department of Land and Natural Resources, Engineering Division, has no additional comments to provide on the subject Draft EA.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 13, 2024

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_Engineering Division (DLNR.ENGR@hawaii.gov)
_X_Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_Land Division – Maui District (daniel.l.ornellas@hawaii.gov)
_X_Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for Relocation of the **DOE's Maui District Mowers Facility and Community School for Adults**
LOCATION: 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098
APPLICANT: Bowers & Kubota on behalf of the State of Hawaii Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on May 8, 2024, by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2024-05-08-TEN.pdf

Please submit any comments by **June 6, 2024**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

(XX) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
( ) Comments are included/attached.

Signed: _____
Print Name: Ebony Butihi
Division: Land Division - Maui District
Date: May 14, 2024

Attachments
cc: Central File

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 22, 2025

TO: Ebony Butihi
Land Division, Maui District
Department of Land and Natural Resources

FROM: Jadine Urasaki Jadine Urasaki (Jan 22, 2025 11:49 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated June 10, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledges that the Department of Land and Natural Resources, Maui District, has no objections to the subject Draft EA.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

July 1, 2024

6754 - 2 3 8 007 098 DEA
Relocation Mowers Facility wRev.docx

Matthew Fernandez, Planner
Bowers & Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819
Email: mfernandez@bowersandkubota.com

Dear Property Owner(s):

Subject: Draft Environmental Assessment Publication Notice
State Department of Education, Office of Facilities and Operations
Relocation of the Department of Education's Maui District Mowers Facility and Community School for Adults Project
660 Lono Avenue, Kahului, Maui, 96732
TMK (2) 3-8-007: 098

Thank you for allowing us the opportunity to provide comments on the above subject project in which we have the following comments to offer.

As the property is located within the County of Maui's Department of Environmental Management sanitary sewer service area and wastewater generated shall be handled by sanitary sewer connection, we have no objections to the proposed relocation plan.

Please be informed that the relocation site may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources, or the exercise of traditional cultural practices. In addition, all wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems" and the Department of Health's "Reuse Guidelines" Volumes 1 and 2, 2016.

Should you have any questions, please contact Mark Tomomitsu at (808) 586-4294.

Sincerely,

JONATHAN NAGATO, P.E., ACTING CHIEF
Wastewater Branch

LM/MST:ct

c: Chintan Poudel, WWB-Oahu Staff, via email

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 22, 2025

TO: Jonathan Nagato, P.E.
Acting Chief, Wastewater Branch
Hawaii State Department of Health

FROM: Jadine Urasaki Jadine Urasaki (Jan 22, 2025 16:14 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

Thank you for the email dated July 1, 2024, providing comments on the Draft Environmental Assessment (EA) for the Hawaii State Department of Education's (Department) Relocation of the Maui District Mowers and Community School for Adults project.

The Department acknowledges that the Hawaii State Department of Health, Wastewater Branch, has no objections to the subject project because sanitary sewer generated would be handled by the County of Maui's sanitary sewer system.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

July 2, 2024

Bowers & Kubota Consulting, Inc.
Attn: Mr. Matthew Fernandez,
Planner 2153 N King Street, Suite 200
Honolulu, Hawaii 96819

via email: mfernandez@bowersandkubota.com

Dear Mr. Fernandez:

SUBJECT: Draft Environmental Assessment for Relocation of the **DOE's Maui District Mowers Facility and Community School for Adults** located at 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098 on behalf of the State of Hawaii Department of Education

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated June 10, 2024, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 13, 2024

MEMORANDUM

FROM: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (daniel.l.ornellas@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for Relocation of the **DOE's Maui District Mowers Facility and Community School for Adults**
LOCATION: 660 Lono Avenue, Kahului, Island of Maui; TMK: (2) 3-8-007:098
APPLICANT: Bowers & Kubota on behalf of the State of Hawaii Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on May 8, 2024, by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2024-05-08-TEN.pdf

Please submit any comments by **June 6, 2024**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Kathryn Stanaway*
Print Name: Kathryn E. Stanaway, Acting Wildife Prog. Mgr.
Division: Forestry and Wildlife
Date: Jun 27, 2024

Attachments
cc: Central File

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

June 20, 2024

Log no. 4562

MEMORANDUM

TO: RUSSELL Y. TSUJI, Administrator
Land Division, Department of Land and Natural Resources

FROM: KATHRYN STANAWAY, Acting Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: **Draft Environmental Assessment and Anticipated Finding of No Significant Impact for Relocation of the State of Hawaiʻi Department of Education's Maui District Mowers Facility and Community School for Adults Project; 660 Lono Avenue, Kahului, Island of Maui, Hawaiʻi**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your consultation request regarding the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the State of Hawaiʻi Department of Education (DOE), Office of Facilities and Operations' proposed relocation and development of two new buildings for the Maui Distric Mowers Facility and McKinley School for Adults Maui Campus. The proposed project site is approximately 2.2 acres in size and is located at 660 Lono Avenue, Kahului, Maui, TMK (2) 3-8-007:098, on an undeveloped area within the larger, State-owned property used by Maui High School. It is within a State Land Use Urban District, R-2 Residential zone. The proposed project will construct a one-story building and new parking lot for the Maui District Mowers Facility and a one-story building and new parking lot for the McKinley School for Adults Maui Campus program. It will also involve constructing one new driveway to connect the new facilities to West Papa Avenue, landscaping, installation of fencing around the project site, and provide electrical, telecommunications, water, sewer, drainage utilities, and infrastructure to service the proposed facilities. A team of biologists from SWCA Environmental Consultants conducted a terrestrial flora and fauna biological survey covering approximately 6.5 acres of the undeveloped area associated with the Maui High School property on July 24, 2023.

DOFAW concurs with the measures included in the DEA intended to avoid construction and operational impacts to State-listed species including the ʻōpeʻapeʻa or Hawaiian Hoary bat (*Lasiurus cinereus semotus*), seabirds, and Blackburn's sphinx moth (*Manduca blackburni*). We appreciate the use of native plant species in landscaping and the measures outlined to minimize the movement of plant and soil material to prevent

the spread of invasive species. We also appreciate the use of Best Management Practices during and after construction to contain any soils and sediment with the purpose of preventing damage to near-shore waters and marine ecosystems. DOFAW provides the following additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area.

The endemic pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*) could potentially nest in the project area. Pueo nest on the ground and active nests have been found year-round. Before any potential vegetative alteration, especially ground-based disturbance, we recommend that line transect surveys are conducted during crepuscular hours through the project area. If a pueo nest is discovered, a minimum buffer distance of 100 meters from the nest should be established until chicks are capable of flight.

The invasive Coconut Rhinoceros Beetle (CRB) or *Oryctes rhinoceros* is found on the islands of O‘ahu, Hawai‘i Island, Maui and Kaua‘i. On July 1, 2022, the Hawai‘i Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of O‘ahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes (a) entire dead trees, (b) mulch, compost, trimmings, fruit and vegetative scraps, and (c) decaying stumps. CRB host plants include the live palm plants in the following genera: *Washingtonia*, *Livistona*, and *Pritchardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date palms), and *Roystonea* (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.

DOFAW is concerned about impacts to vulnerable birds from nonnative predators such as cats, rodents, and mongooses. We recommend taking action to minimize predator presence; remove cats, place bait stations for rodents and mongoose, and provide covered trash receptacles. In addition, no feeding of feral cats should occur on the premises.

Due to the arid climate and risk of wildfire to listed species, we recommend coordinating with the Hawai‘i Wildlife Management Organization at (808) 850-0900 or admin@hawaiiwildfire.org, on how wildfire prevention can be addressed in the project area. When engaging in activities that have a high risk of starting a wildfire (i.e. welding in grass), it is recommended that you:

- Wet down the area before starting your task,
- Continuously wet down the area as needed,
- Have a fire extinguisher on hand, and
- In the event that your vision is impaired, (i.e. welding goggles) have a spotter to watch for fire starts.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their

own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Kate Cullison, Protected Species Habitat Conservation Planning Coordinator via email at katherine.cullison@hawaii.gov.

Sincerely,

Kathryn Stanaway

KATHRYN STANAWAY
Acting Wildlife Program Manager

4562 DOE Maui District

Final Audit Report 2024-06-27

Created:	2024-06-20 (Hawaii-Aleutian Standard Time)
By:	Rubyrosa Terrago (rubyrosa.t.terrago@hawaii.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAAbqNjgCWCYWmRI8tjInDFLPCx2D9C7P2Q
Number of Documents:	1
Document page count:	4
Number of supporting files:	0
Supporting files page count:	0

"4562 DOE Maui District" History

Document created by Rubyrosa Terrago (rubyrosa.t.terrago@hawaii.gov)
2024-06-20 - 2:13:02 PM HST- IP address: 162.221.246.37

Document emailed to Kathryn Stanaway (kathryn.e.stanaway@hawaii.gov) for signature
2024-06-20 - 2:14:09 PM HST

Agreement viewed by Rubyrosa Terrago (rubyrosa.t.terrago@hawaii.gov)
2024-06-24 - 9:28:11 PM HST- IP address: 75.85.98.168

Reminder sent to Kathryn Stanaway (kathryn.e.stanaway@hawaii.gov)
2024-06-26 - 8:44:30 PM HST

Email viewed by Kathryn Stanaway (kathryn.e.stanaway@hawaii.gov)
2024-06-27 - 6:06:37 AM HST- IP address: 104.47.64.254

Agreement viewed by Kathryn Stanaway (kathryn.e.stanaway@hawaii.gov)
2024-06-27 - 6:06:52 AM HST- IP address: 66.91.40.141

Document e-signed by Kathryn Stanaway (kathryn.e.stanaway@hawaii.gov)
Signature Date: 2024-06-27 - 6:07:28 AM HST - Time Source: server- IP address: 66.91.40.141

Agreement completed.
2024-06-27 - 6:07:28 AM HST

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 24, 2025

TO: Jason D. Omick
Wildlife Program Manager, Division of Forestry and Wildlife
Department of Land and Natural Resources

FROM: Jadine Urasaki Jadine Urasaki (Jan 24, 2025 21:40 HST)
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes, Chapter 343, Draft Environmental Assessment
Relocation of the Hawaii State Department of Education's Maui District Mowers and Community School for Adults
Job No.: Q55287-21
Tax Map Key No.: (2) 3-8-007: 098
Kahului, Maui, Hawaii

The Hawaii State Department of Education (Department) received Darlene Nakamura's email, dated July 2, 2024, with a letter signed by Kathryn E. Stanaway providing comments on the Draft Environmental Assessment (EA) for the Department's Relocation of the Maui District Mowers and Community School for Adults project. The Department thanks the Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife, for participating in this process and has the following numbered responses corresponding to your comments:

1. The Department acknowledges the DLNR's agreement on the measures outlined in the Draft EA, which aim to avoid impacts on the Hawaiian hoary bat, seabirds, and Blackburn's sphinx moth, as well as the best management practices to protect nearshore waters and marine ecosystems. These measures would be integrated into the project's design.

2. The Department recognizes DLNR's concern regarding the potential nesting of the endemic pueo or Hawaiian short-eared owl in the project area. A qualified biologist will conduct a field inspection to identify whether any owl nests are present before any grubbing and grading activities occur on the site. This recommendation will be included in the project's design plans.

3. The Department recognizes DLNR's concern for the threat of invasive Coconut Rhinoceros Beetle (CRB) infestations to Maui Island through the movement of CRB-host material to and

from Oahu. The recommended measures provided in your comment letter would be included in the design plans and be utilized for the project. A discussion of the potential effects to these species would be included in Section 3.6 (Flora and Fauna) of the Final EA.

4. The Department recognizes DLNR's concern of impacts to vulnerable birds from non-native predators such as cats and rodents that may be present within the project site. The recommended avoidance measures provided in your comment letter would be shared with Maui High School (MHS) and other users operating within the facilities after construction.

5. The Department also acknowledges DLNR's concern regarding the impact of potential wildfires on listed species. Design plans would include proper fire safety requirements where appropriate which will be coordinated with the County Department of Fire and Public Safety for review. The construction plans would incorporate measures to mitigate the risk of wildfire ignition.

   Furthermore, MHS would be responsible for the long-term maintenance of the facilities and their property to prevent potential wildfire ignition. This responsibility would include the maintenance of vegetation throughout their property including the remaining undeveloped areas surrounding the proposed facilities.

Should you have any questions, please contact Jenny Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Matthew Fernandez, Planner of Bowers + Kubota Consulting, Inc., at (808) 836-7787 or via email at mfernandez@bowersandkubota.com.

JU:jh
c: Matthew Fernandez, Bowers + Kubota Consulting, Inc.
Office of Facilities and Operations
Facilities Development Branch

APPENDIX A-3

HRS Chapter 6E-8 Historic Preservation Review

SHPD Project Effect Determination Letter

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF FACILITIES AND OPERATIONS
(sent vis HICRIS)

April 29, 2024

TO: Alan Downer, PhD
Administrator, State Historic Preservation Division
Department of Land and Natural Resources

FROM: Jadine Urasaki
Public Works Administrator, Facilities Development Branch

SUBJECT: Hawaii Revised Statutes Chapter §6E-8 Historic Preservation Review
Maui High School, Relocate District Mowers and Adult School
795 Onehee Avenue, Kahului, Hawaii 96732
Job No.: Q55287-21
TMK: (2) 3-8-007:098

This project is subject to Hawaii Revised Statutes (HRS) §6E-8, as the Hawaii State Department of Education (Department), would be expending State funds to develop the proposed facilities. Included in this submittal is the State Historic Preservation Division (SHPD) Hawaii Cultural Resource Information System (HICRIS) electronic submission, Tax Map Key (TMK) map, a property map, project plans, and related project photographs. A draft archaeological Literature Review and Field Inspection (LRFI) was conducted by Nohopapa Hawaii LLC (Nohopapa) for the project, and this draft report has been submitted under HICRIS.

SCOPE OF WORK:

The Department is proposing to relocate and develop two new buildings on an undeveloped area within a larger State-owned property that is used by Maui High School (MHS). The project area would utilize approximately 2.2-acres of the 6.5-acres of the school property's undeveloped space. The two proposed Department buildings are for the Maui District Mowers Facility (MDMF) and the McKinley School for Adults Maui Campus (MSAMC). This project is referred to as the "Relocate District Mowers and Adult School."

The purpose of the project is for the immediate relocation of the MSAMC and the Department lawnmower programs, and the need for new and improved facilities for these programs. The reason for the relocation of the MSAMC and MDMF is mainly due to the State's proposal to redevelop the existing site with other uses. The MDMF would not be accommodated in the redevelopment project and the MSAMC facility and program cannot wait for the site's redevelopment or be subject to phasing or construction implementation delays that would impact

their important programs. In addition, the lack of existing space for these programs and the deteriorated state of the existing buildings are other reasons for providing new facilities for the programs.

The two proposed Department buildings are to be a new one-story building and parking lot for the MDMF, and a new one-story building and parking lot for the MSAMC. The project will also involve constructing a new driveway to connect these new facilities to West Papa Avenue, landscaping, installation of fencing around the project site, and providing electrical, telecommunications, water, sewer, and drainage utilities and infrastructure to service the proposed facilities. The MDMF would use approximately 30 percent or 0.6-acres of the total site, the MSAMC would use about 50 percent or 1.1-acres of the site, and the other 20 percent or 0.4-acres would be landscaping and shared-use spaces such as the driveway and walking paths.

IDENTIFICATION AND INVENTORY OF HISTORIC PROPERTIES:
Background research and previous archaeological studies did not yield any previously recorded historic properties on the property and project area. Given the extensive alteration of the project area and vicinity from industrialized agricultural activities, the expansion of the Kahului suburbs over the course of the last 40 years, and the lack of documentary evidence of subsurface excavations in the project area, it has been determined that not enough information is available to understand the likelihood of subsurface historic properties in the project area.

No definitive historic properties were located in the project area during Nohopapa's surface field investigation. However, a surface midden scatter of shell and coral fragments found along the periphery of the north central project area was a potential indicator of a historic property that required additional investigation.

EVALUATION OF SIGNIFICANCE:
The surface scatter of midden consisting of shell and possible coral fragments was observed on a slope along the project area's north central border. The midden was only present in disturbed areas and was observed absent from manicured segments of the MHS lawn.

While the source of the midden scatter was indeterminate, it was determined to potentially indicate a cultural layer or feature and is therefore a potential historic property that requires additional investigation to evaluate its significance.

EFFECT DETERMINATION:
The project area is situated within the Central Maui region which was historically comprised of sand dunes Hawaiian oral traditions have identified as battlefields and burial grounds. In the 1800s, the project area and surrounding areas in Central Maui underwent a substantial amount of change due to extensive ground disturbance and the modification, reduction, and leveling of the natural sand dunes due to the development of sugar plantations and plantation infrastructures. In 1972, the high school was constructed in its present location, while surrounding areas have been graded and developed for residential housing.

MHS facilities cover approximately 54-acres of the 73.5-acres of land that make up TMK (2) 3-8-007:098. Maui High School Park covers roughly 13-acres of the TMK, and the other 6.5-acres is

undeveloped. Most of the property has been disturbed from prior grading and development activities associated with the construction of MHS facilities and the park over the years. The project site of approximately 2.2-acres is situated entirely within the estimated 6.5-acre vacant and undeveloped area of the property located to the south of MHS. Heavy dry shrubland vegetation make up most of this undeveloped space. Active and abandoned garden plots are present in the north section of this area closest to MHS. Field investigations conducted by Nohopapa have documented that the majority of the project area's ground surface appeared leveled and graded.

Nohopapa's LRFI included a field survey and other documentation to provide a place-based, contextual understanding of the area, and to record current conditions and generate information that could be used to understand the potential presence of historic properties. Although no definitive historical properties were located in the project area, Nohopapa had concluded that there exists a heightened probability in the area for subsurface sand deposits to contain burials and historical properties. This is due to the finding of a surface scatter of midden that required further investigation, the known historical significance of Central Maui as a battlefield and burial grounds, a 2009 SHPD determination that required archaeological monitoring for a previous project in the northeastern MHS campus, and human burials previously found in sand dune deposits to the south of the project site in the Maui Lani Development.

The Department requests a concurrence from SHPD of the project effect determination of **"effect, with agreed upon mitigation measure"** for this project.

MITAGATION:
The LRFI recommends further investigation through an Archaeological Inventory Survey Plan, a SHPD-reviewed and approved Archaeological Inventory Survey Report, and a SHPD-approved Archaeological Monitoring Plan be developed before commencing construction. With these measures, the project effect recommendation should be **"effect, with agreed upon mitigation measures"** subject to SHPD review and concurrence. The measures implemented would thus minimize the potential for the project's potential effect on significant historic subsurface properties.

Should you have any questions, please contact Jenny K. Ho, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5122 or via email at jenny.ho@k12.hi.us. You may also contact our consultant, Mr. Matthew Fernandez, of Bowers and Kubota Consulting, Inc. at (808) 836-7787 ext.386 or via email at mfernandez@bowersandkubota.com.

JU:jkh
Attachments: 1) HRS §6E Submittal Form
2) Project Area on TMK map
3) Site Property Map
4) Project's Conceptual Site Plan
5) Construction Drawings
6) Project Site Photographs

c: Facilities Development Branch

STATE OF HAWAII | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

July 19, 2024

IN REPLY REFER TO:
Project No.: 2024PR00725
Doc. No.: 2407SN12
Archaeology

Jadine Urasaki, Administrator
Facilities Development Branch
State of Hawaii, Department of Education
3633 Waialae Avenue
Honolulu, Hawaiʻi 96813
c/o Jenny Ho
Email: jenny.ho@k12.hi.us

Dear Ms. Urasaki:

SUBJECT: **Hawaiʻi Revised Statutes (HRS) Chapter 6E-8 Historic Preservation Review –**
Maui High School, Relocate District Mowers and Adult School Project (Job No. Q55287-21)
Request for Concurrence with Effect Determination
Wailuku Ahupuaʻa, Pūʻali Komohana District, Island of Mauʻi
TMK: (2) 3-8-007:098

This letter provides the State Historic Preservation Division's (SHPD's) HRS Chapter 6E-8 review of the proposed project titled, *Maui High School (MHS), Relocate District Mowers and Adult School Project (Job No. Q55287-21)*, that was received by our office on June 17, 2024. The submittal consisted of construction plans, a SHPD 6E Sumbmittal Form, a TMK map, and a letter dated April 29, 2024 from the Hawaiʻi Department of Education (HIDOE) requesting SHPD's concurrence with a project effect determination of no historic properties affected. An archaeological literature review and field inspection report (LRFI) titled, *Draft Literature Review and Field Inspection Study to Inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Maintenance Branch and Maui High School Facilities Project, MHS Campus, Wailuku Ahupuaʻa, Wailuku Moku, Maui Mokupuni, Tax Map Key (TMK) 3-8-007:098* (Hoerman et al. 2023) also was submitted in support of the project effect determination.

The HIDOE plans to relocate and construct two new buildings on an undeveloped section of State-owned land currently utilized by Maui High School (MHS). This project will cover a 2.2-acre area within the 6.5-acre property. Activities involving ground disturbance will include excavation, soil movement, construction grading, landscaping, and the installation of underground utilities and infrastructure. These activities will facilitate the construction of a new single-story building and parking for the Maui District Mowers Facility (MDMF), as well as a new building for the McKinley School for Adults Maui Campus (MSAMC) along with their respective parking areas. Moreover, the construction will involve a new driveway, landscaping, fencing, and utility infrastructure to support the new structures. The project submission specifies that the approximate depth limits for ground disturbance associated with each proposed element are as follows: MDMF (2 ft. deep), MSAMC (4 ft. deep), driveway (1.17 ft. deep), paved areas and parking lots (1.17 ft. deep), drainage lines (4 to 7 ft. deep), drainage detention basin (8.6 ft. deep), water lines (4 to 4.5 ft. deep), sewer lines (6 to 7.5 ft. deep), electrical lines (3 ft. deep), and communication lines (3 ft. deep).

SHPD records indicate that an archaeological inventory survey has not been conducted for this project area. The Hoerman et al. (2023) LRFI indicates that a previous SHPD review dated March 28, 2009 (Log No. 2009.1083, Doc.

No. 0903PD83), requested archaeological monitoring for a project in the northeastern portion of the MHS Campus. A surface scatter of shell midden was observed which may be evidence of the presence of a historic property. Additionally, the proposed project is within the general vicinity of the Maui Lani Burial Complex (State Inventory of Historic Properties [SIHP] Site 50-50-04-02797) and the Kahului Historic District (SIHP Site 50-50-04-01607). Human burial sites have been identified within the Maui Lani Burial Complex which consists of Puuone sand dune deposits (Foote et al. 1972). The same deposits are present within the current project area. Puuone sand deposits are known to contain human burials and habitation features.

At this time, the **SHPD lacks sufficient information** to assess the potential adverse effects of the project on significant surface and subsurface historic properties. Therefore, based on the potential presence of human skeletal remains and the cultural sensitivity within and in the general vicinity of the proposed project area, **SHPD requests** that an archaeological inventory survey (AIS) with a subsurface testing component be conducted and that an AIS report meeting the requirements of HAR §13-276-5 be submitted to SHPD for review and acceptance prior to the initiation of the project.

The AIS shall be conducted by a qualified archaeologist in order to adequately identify and document any archaeological historic properties that may be present, to assess their significance, to determine the potential impacts of this project on any identified archaeological historic properties, and to identify and ensure appropriate mitigation is implemented, if needed. A list of permitted archaeological firms is provided on the SHPD website at: http://dlnr.hawaii.gov/shpd/about/branches/archaeology/.

SHPD recommends that the HIDOE and the archaeological firm consult with our office regarding an appropriate testing strategy before initiating the AIS.

The document titled, *Draft Literature Review and Field Inspection Study to Inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Maintenance Branch and Maui High School Facilities Project, MHS Campus, Wailuku Ahupua'a, Wailuku Moku, Maui Mokupuni, Tax Map Key (TMK) 3-8-007:098* (Hoerman et al., 2023) serves to facilitate project planning and supports the historic preservation review process. Please send one hard copy of the document clearly marked LIBRARY COPY, along with a copy of this review letter and a text-searchable PDF version of the document to the Kapolei SHPD office, attention SHPD Library. Please send a text-searchable PDF copy of the literature review and field inspection to SHPD via HICRIS to Project 2024PR00725 using the Supplemental Attachment option and a text-searchable PDF copy to Lehua.K.Soares@hawaii.gov.

SHPD shall notify the DOE when the archaeological inventory survey report and any required mitigation plans are accepted, and the project initiation process may proceed.

Please contact Susan A. Lebo, Archaeology Branch Chief, at Susan.A.Lebo@hawaii.gov, for any matters regarding this letter.

Aloha,

Lesley Iaukea

Lesley Iaukea, PhD
Acting Administrator, State Historic Preservation Division

cc: Matthew Fernandez, mfernandez@bowersandkubota.com
Ron Sato, rsato@bowersandkubota.com
Rachel Hoerman, rachel@nohopapa.com
Kelley Uyeoka, kelley@nohopapa.com

APPENDIX B

Soils Characterization Report

Maui High School, Relocate DOE Maui District Mower
and Community School for Adults

DOE Job No. Q55287-21

July 2023

Prepared by: EnvironMETeo Services, Inc.

EnvironMETeo Services, Inc.
Environmental / Industrial Health & Safety

Soil Characterization Report

Prepared For:

Bowers + Kubota

94-408 Akoki Street, Suite 201A

Waipahu, Hawaii 96797

Project:

Maui High School

Relocate DOE Maui District Mower and Community School for Adults

DOE Job No. Q55287-21

Conducted by:

EnvironMETeo Services, Inc. (EMET)

94-520 Uke'e Street, Suite A

Waipahu, Hawaii 96797

Date of Report: July 14, 2023

EMET ID: 2301025

Soil Characterization Report

for

Maui High School

Relocate DOE Maui District Mower and Community School for Adults

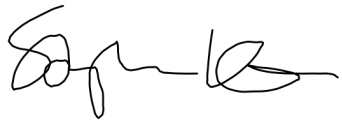
DOE Job No. Q55287-21

Prepared for

Bowers + Kubota
94-408 Akoki Street, Suite 201A
Waipahu, Hawaii 96797

ATTN: Nick Orense

Prepared by:



Stephen Kaneshiro
EnvironMETeo Services, Inc.

EnvironMETeo Services, Inc. (EMET)
94-520 Ukee Street, Suite A
Waipahu, Hawaii 96797

Report Date: July 14, 2023

EMET ID: 2301025

INTRODUCTION

EnvironMETeo Services Inc. (EMET) is pleased to report the results of our site investigation on June 28, 2023 to support the proposed Relocate DOE Maui District Mower and CSA project at Maui High School in Kahului, Hawaii. The work was authorized by Nick Orense of Bowers + Kubota. The objective was to provide advance information about the presence or lack of soil contamination from organochlorine pesticides, lead, and arsenic identified by Department of Education as contaminants of potential concern (COPCs) in advance of construction activities.

SCOPE OF SERVICES

Many areas surrounding buildings constructed before 1980s have been found to contain organochlorine pesticides, principally chlordane, which was used until 1988 as a termiticide. Chlordane was banned after 1988 because of its known health effects, and its persistence in the environment. Termiticides were generally sprayed on the soil surface or mixed in the top foot of soil. The Hawaii Department of Health states that the depth interval of 0-6 inches below ground surface generally contains the highest concentrations of organochlorine pesticides, with concentrations attenuating with depth.

Lead contamination in soil generally originates with lead-based paints that were the dominant method of corrosion control until the 1970s when it was determined that lead in the environment was a neurotoxin.

Arsenic is a contaminant of concern for older structures and/or buildings. Arsenic was use as a pesticide and rodenticide through the 1940s and is commonly found in areas where sugarcane or pineapple was once grown.

EnvironMETeo (EMET) Services, Inc. Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200
(808) 671-8383…Telephone emet@emetservices.com...E-mail

EMET was provided schematic plans for the project and scoped to perform shallow near surface soil sampling to assess the probability of site conditions that could be hazardous to construction workers, children and other site personnel.

EMET utilized a multi-increment (MI) sampling strategy of two (2) decision units (DU) for this project. Soil samples were collected from the unpaved areas at the southwestern corner of campus: the portion from Building L to West Papa Avenue is DU1 and the portion from Building E to West Papa Avenue is DU2. Replicate soil samples were collected from DU2.

Figure 1: Schematic of the Decision Units locations at Maui High School. Soil increments were obtained from depths of 1 - 6 inches below the ground surface of native soil.

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The three replicate samples collected from DU2 allow statistical analysis to be performed on the results. The sampling strategy was intended to be representative of soil at the project site. Each MI sample consisted of at least 70 increments also called subsamples that were collected from 1- 6 inches below ground surface. All samples were collected using a hand pick to dig to a level below grass or recent organic layers into native soil, and trowel to remove soil at depth. All increments of a single sample were combined into a single labeled one-gallon zip-lock bag. Following collection, a total of three (3) samples were sealed and transported under chain-of-custody to Hawaii Analytical Laboratories, LLC in Honolulu, Hawaii.

Samples were analyzed for organochlorine pesticides by EPA Method 8081B-m, for lead by EPA Method 3051m/7000Bm, and for arsenic by EPA Method 3051m/7061Am.

RESULTS

Arsenic was detected in each of the samples. Lead and organochlorine pesticides were not detected in any of the samples. Each of the detected arsenic concentrations are below 24 milligrams per kilogram (mg/kg), the Hawaii Department of Health Fall 2017 Tier I Environmental Action Level (EAL) for unrestricted land use, above a potential source of drinking water, and less than 150 meters from the nearest surface body of water. The EALs are standards for a chemical contaminant's potential for adverse health and environmental effects. A concentration equal to or greater than the corresponding EAL for a chemical contaminant may pose a health and environmental risk. A concentration less than the corresponding EAL generally does not pose a health and environmental risk and does not require further action on the soil.

Results are shown in Table 1, and the full analytical report is found in Appendix A.

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Table 1: Soil Sample Results

Sample Number	Arsenic (mg/kg)	Lead (mg/kg)	Organochlorine Pesticides (mg/kg)
Sample 025-1 (DU1)	20	nd	nd
Sample 025-2A (DU2)	21	nd	nd
Sample 025-2B (DU2)	21	nd	nd
Sample 025-2C (DU2)	22	nd	nd
EAL	*24*	*200*	varied

nd = not detected at concentrations at or above the laboratory method reporting limit.

Table 2. Detected Contaminant Concentrations

	025-2A	025-2B	025-2C	mean	std. dev.	RSD	std. dev. + mean	EAL
Arsenic	21	21	22	21.3	0.5	2.2	21.8	24

The relative standard deviation (RSD) for the detected analytes does not exceed 3%. RSD is a measure of how disperse data is distributed in a set. An RSD less than 35% indicates the amount of estimated error in the data is within a reasonable range and generally validates the multi-increment sampling procedure. The actual concentrations of the detected analytes can be determined by this set of data with sufficient confidence.

CONCLUSION

Based on the laboratory results, arsenic, lead, and organochlorine pesticides are not present in concentrations above the Tier I EAL in the areas characterized.

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Appendix A

Laboratory Report

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Hawaii Analytical Laboratory
ANALYTICAL REPORT

Tuesday, July 11, 2023

Mr. Stephen Kaneshiro
EMET
94-520 Ukee St. Suite A
Waipahu HI 96797

Phone Number: (808)721-7291
Facsimile:
Email: stephenkaneshiro@emetservices.com

Lab Job No: 202306263
Date Submitted: 6/30/2023
Your Project: 2301025, Maui High School, 6/28/23

Chlordane (Technical Grade)

EPA Method: 8081B -m [Gas Chromatography - ECD]

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202345427	**025-1**	< 1	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345428	**025-2A**	< 1	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345429	**025-2B**	< 1	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345430	**025-2C**	< 1	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			

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EMET
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Waipahu HI 96797

Phone Number: (808)721-7291
Facsimile:
Email: stephenkaneshiro@emetservices.com

Lab Job No: 202306263
Date Submitted: 6/30/2023
Your Project: 2301025, Maui High School, 6/28/23

Organochlorinated Pesticides

EPA Method: 8081B -m [Gas Chromatography - ECD]

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202345427	**025-1**			7/7/2023
Comments	4,4'-DDD	< 0.02	mg/kg	
	4,4'-DDE	< 0.02	mg/kg	
	4,4'-DDT	< 0.02	mg/kg	
	Aldrin	< 0.02	mg/kg	
	alpha-BHC	< 0.02	mg/kg	
	beta-BHC	< 0.02	mg/kg	
	delta-BHC	< 0.02	mg/kg	
	Dieldrin	< 0.02	mg/kg	
	Endosulfan I	< 0.02	mg/kg	
	Endosulfan II	< 0.02	mg/kg	
	Endosulfan Sulfate	< 0.02	mg/kg	
	Endrin	< 0.02	mg/kg	
	Endrin Aldehyde	< 0.02	mg/kg	
	Endrin Ketone	< 0.02	mg/kg	
	gamma-BHC	< 0.02	mg/kg	
	Heptachlor	< 0.02	mg/kg	
	Heptachlor Epoxide	< 0.02	mg/kg	
	Methoxychlor	< 0.02	mg/kg	
	Multi-incremental sampling (70 increments) was performed on the sample.			
202345428	**025-2A**			7/7/2023
Comments	4,4'-DDD	< 0.02	mg/kg	
	4,4'-DDE	< 0.02	mg/kg	
	4,4'-DDT	< 0.02	mg/kg	
	Aldrin	< 0.02	mg/kg	
	alpha-BHC	< 0.02	mg/kg	
	beta-BHC	< 0.02	mg/kg	
	delta-BHC	< 0.02	mg/kg	
	Dieldrin	< 0.02	mg/kg	
	Endosulfan I	< 0.02	mg/kg	
	Endosulfan II	< 0.02	mg/kg	
	Endosulfan Sulfate	< 0.02	mg/kg	
	Endrin	< 0.02	mg/kg	
	Endrin Aldehyde	< 0.02	mg/kg	
	Endrin Ketone	< 0.02	mg/kg	
	gamma-BHC	< 0.02	mg/kg	
	Heptachlor	< 0.02	mg/kg	
	Heptachlor Epoxide	< 0.02	mg/kg	
	Methoxychlor	< 0.02	mg/kg	
	Multi-incremental sampling (70 increments) was performed on the sample.			

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EMET
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Waipahu HI 96797

Phone Number: (808)721-7291
Facsimile:
Email: stephenkaneshiro@emetservices.com

Lab Job No: 202306263
Date Submitted: 6/30/2023
Your Project: 2301025, Maui High School, 6/28/23

Organochlorinated Pesticides

EPA Method: 8081B -m [Gas Chromatography - ECD]

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202345429	**025-2B**			7/7/2023
Comments	4,4'-DDD	< 0.02	mg/kg	
	4,4'-DDE	< 0.02	mg/kg	
	4,4'-DDT	< 0.02	mg/kg	
	Aldrin	< 0.02	mg/kg	
	alpha-BHC	< 0.02	mg/kg	
	beta-BHC	< 0.02	mg/kg	
	delta-BHC	< 0.02	mg/kg	
	Dieldrin	< 0.02	mg/kg	
	Endosulfan I	< 0.02	mg/kg	
	Endosulfan II	< 0.02	mg/kg	
	Endosulfan Sulfate	< 0.02	mg/kg	
	Endrin	< 0.02	mg/kg	
	Endrin Aldehyde	< 0.02	mg/kg	
	Endrin Ketone	< 0.02	mg/kg	
	gamma-BHC	< 0.02	mg/kg	
	Heptachlor	< 0.02	mg/kg	
	Heptachlor Epoxide	< 0.02	mg/kg	
	Methoxychlor	< 0.02	mg/kg	
	Multi-incremental sampling (70 increments) was performed on the sample.			
202345430	**025-2C**			7/7/2023
Comments	4,4'-DDD	< 0.02	mg/kg	
	4,4'-DDE	< 0.02	mg/kg	
	4,4'-DDT	< 0.02	mg/kg	
	Aldrin	< 0.02	mg/kg	
	alpha-BHC	< 0.02	mg/kg	
	beta-BHC	< 0.02	mg/kg	
	delta-BHC	< 0.02	mg/kg	
	Dieldrin	< 0.02	mg/kg	
	Endosulfan I	< 0.02	mg/kg	
	Endosulfan II	< 0.02	mg/kg	
	Endosulfan Sulfate	< 0.02	mg/kg	
	Endrin	< 0.02	mg/kg	
	Endrin Aldehyde	< 0.02	mg/kg	
	Endrin Ketone	< 0.02	mg/kg	
	gamma-BHC	< 0.02	mg/kg	
	Heptachlor	< 0.02	mg/kg	
	Heptachlor Epoxide	< 0.02	mg/kg	
	Methoxychlor	< 0.02	mg/kg	
	Multi-incremental sampling (70 increments) was performed on the sample.			

Mr. Stephen Kaneshiro
EMET
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Waipahu HI 96797

Phone Number: (808)721-7291
Facsimile:
Email: stephenkaneshiro@emetservices.com

Lab Job No: 202306263
Date Submitted: 6/30/2023
Your Project: 2301025, Maui High School, 6/28/23

Total Lead (soil)

EPA Method: 3051m / 7000Bm

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202345427	**025-1**	< 40	mg/kg	7/5/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345428	**025-2A**	< 40	mg/kg	7/5/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345429	**025-2B**	< 40	mg/kg	7/5/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345430	**025-2C**	< 40	mg/kg	7/5/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			

Total Recoverable Arsenic (Gaseous Hydride)

EPA Method: 3051m / 7061Am

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202345427	**025-1**	20	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345428	**025-2A**	21	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345429	**025-2B**	21	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			
202345430	**025-2C**	22	mg/kg	7/7/2023
Comments	Multi-incremental sampling (70 increments) was performed on the sample.			

Mr. Stephen Kaneshiro
EMET
94-520 Ukee St. Suite A
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Phone Number: (808)721-7291
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Lab Job No: 202306263
Date Submitted: 6/30/2023
Your Project: 2301025, Maui High School, 6/28/23

All Quality Control data are acceptable unless otherwise noted.
MRL for lead air is 5ug.
MRL for lead wipe is 10ug.
MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments
The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
# = Analytical methods marked with an "#" are not within our AIHA LAP, LLC Scope of Accreditation.
MRL = Method Reporting Limit.

Eva Skogsberg
Laboratory Supervisor

HAWAII ANALYTICAL LABORATORY, LLC

3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
https://analyzehawaii.com

☐ New Client?

Report To*	Stephen Kaneshiro
Company	EMET Services
Address*	94-520 Ukee St.
City, State, Zipcode	Waipahu, HI 96797
Phone / Cell No.*	808-671-8383
Report results to	
Email / Fax	Stephen.kaneshiro@emetservices.com

Invoice To*	Cindy DeLizo
Company	
Address*	
Phone / Cell No.*	
Purchase Order No.	
Email Invoice To	Jenny.schuldheisz@emetservices.com

Need Results By*:
- ☒ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Client Project No.: 230(025

Site/Project Name: Maui High School

Sampled By & Certif. # : EMET (BG)

Special Instructions: *20.4°C upon receiving - TR 6/30/23 @ 1:43 pm
MIS Prep (10 subsamples)

PLM POSITIVE STOP?
- ☐ + stop / SAMPLE
- ☐ + stop / LAYER

Verbal results? ☐

Lab Report No.: 202306263

	Sample ID	Sample Description*	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	Lab Sample(s) No.:
1	025-1	DU 1	6/28/23	Soil		total OCP, As, Pb		202345427
2	025-2A	DU 2	↓	↓		↓		202345428
3	025-2B	DU 2 replicate	↓	↓		↓		202345429
4	~~025~~ ↑	DU 2 replicate	↓	↓		↓		202345430
5	025-2C							
6								
7								
8								
9								
10								
11								
12								

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
Stephen Kaneshiro	6/30/2023 13:45	Trinidad Shutt	06-30-23P01:42 RCVD

*Sample description can be paint chips, concrete, specific sample collection location, etc...
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

Lab Notes:

☐ via HAC ☐ via USPS ☐ via drop box ☐ via FedEx ☐ via pick up

awb#: 173-

APPENDIX C

Flora and Fauna Study Report

Relocation of DOE Maui District Mowers and Community School for Adults Flora and Fauna Survey Report

August 2023

Prepared by: SWCA Environmental Consultants

Relocation of DOE Maui District Mowers and Community School for Adults Flora and Fauna Survey Report

AUGUST 2023

PREPARED FOR

Bowers + Kubota Consulting

PREPARED BY

SWCA Environmental Consultants

RELOCATION OF DOE MAUI DISTRICT MOWERS AND COMMUNITY SCHOOL FOR ADULTS FLORA AND FAUNA SURVEY REPORT

Prepared for

Bowers + Kubota Consulting
2153 N King Street, Suite 200
Honolulu, Hawai‘i 96819-4554
Attn: Matthew Fernandez

Prepared by

SWCA Environmental Consultants
1200 Ala Moana Boulevard, #380
Honolulu, Hawai‘i 96814
(808) 548-7922
www.swca.com

August 2023

EXECUTIVE SUMMARY

Bowers + Kubota Consulting requested that SWCA Environmental Consultants (SWCA) conduct a terrestrial flora and fauna biological resources survey for the proposed Relocation of DOE Maui District Mowers and Community School for Adults in Kahului, Maui. This report summarizes the findings of the biological resources survey conducted for the project by SWCA Biologist Danielle Frohlich on July 24, 2023. The proposed project includes the addition of a new one-story building and parking lot for the Department of Education's Maui District Mowing Facility and a new one-story building and parking lot for the McKinley Community School for Adults. The proposed project will also involve constructing two new driveways to connect each facility to West Papa Avenue and providing electrical, communication, water, sewer, and drainage utilities for each building. The proposed project site is situated within the Maui High School campus at 660 Lono Avenue and encompasses approximately 6.5 acres. All vascular plant species, vegetation types, and wildlife were recorded during the survey.

The vegetation types and plant species identified during the survey are not considered unique. Two indigenous plant species, hau (*Hibiscus tiliaceus*) and ʻuhaloa (*Waltheria indica*), were observed in the survey area. These species are not considered rare and are not federally or state-listed threatened or endangered species, species proposed for listing, or candidate species. Therefore, the proposed project is not expected to have a significant, adverse effect on terrestrial vegetation.

Tree tobacco (*Nicotiana glauca*), which is a nonnative host plant of the federally listed endangered Blackburn's sphinx moth (*Manduca blackburni*), was found in the survey area, but no larvae or eggs of this species were found. Mitigation recommendations to address potential project impacts to this species are outlined in the report.

No federally or state-listed endangered birds were observed in the survey area. In total, three bird species were observed in the survey area, all of which are common, nonnative, introduced bird species. No federally or state-listed endangered wildlife species were observed in or near the survey area; however, potential roosting trees for the Hawaiian hoary bat (*Lasiurus cinereus semotus*), a federally and state-listed endangered mammal, exist in the survey area. Mitigation recommendations to address potential roosting habitat are outlined in the report. The survey area does not overlap critical habitat of any listed terrestrial faunal species. For these reasons, the proposed project is not expected to have a significant, adverse effect on terrestrial wildlife.

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Appendices

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1 INTRODUCTION

Bowers + Kubota requested that SWCA Environmental Consultants (SWCA) conduct a terrestrial flora and fauna biological resources survey for the proposed Relocation of DOE Maui District Mowers and Community School for Adults in Kahului, Maui. This report summarizes the findings of the biological resources survey conducted for the project by SWCA Botanist Danielle Frohlich on July 24, 2023. The survey area is situated entirely within the Maui High School campus at 660 Lono Avenue and encompasses approximately 6.5 acres. All vascular plant species, vegetation types, and wildlife species were recorded.

2 REGULATORY ENVIRONMENT

This section describes laws and regulations applicable to aquatic and terrestrial flora and fauna in the context of the project.

2.1 Endangered Species Act

The Endangered Species Act of 1973, as amended (ESA), is regulated by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), and protects wildlife and plant species that have been listed as threatened or endangered. It is designed to conserve the ecosystems on which species depend. Candidate species, which may be listed in the near future, are not afforded protection under the ESA until they are formally listed as endangered or threatened. Section 9 of the ESA and rules promulgated under Section 4(d) of the ESA prohibit the unauthorized take of any endangered or threatened species of wildlife listed under the ESA. Under the ESA, the term *take* means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct." As defined in regulations, the term *harm* means "an act that actually kills or injures wildlife; it may include significant habitat modification or degradation, which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 Code of Federal Regulations [CFR] 17.3). The rules define *harass* to mean "an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent, as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering" (50 CFR 17.3).

The ESA affords maximum legal protections to species listed as threatened or endangered under the law, and also provides authorization for incidental take permits for take that occurs incidental to otherwise legal operations. To comply with federal laws, additional measures must be taken to ensure that take of federally listed species does not occur. Any fatality of a listed species should be reported to the USFWS and the Hawai‘i Division of Forestry and Wildlife as soon as possible, and an incident report should be filed within 24 hours of detection.

The ESA also provides for the designation of critical habitat for listed species if there are areas of habitat believed to be essential to conservation of the species. Critical habitat can be designated for a single species or a group of species. A critical habitat designation does not necessarily restrict further development but prevents federal actions from destroying or adversely modifying that habitat.

2.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918, as amended (MBTA), is regulated by the USFWS and prohibits the take of migratory birds. A list of birds protected under MBTA is published under 50 CFR 10.13. Unless permitted by regulations, under the MBTA, "it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product" (16 United States Code 703–712). The MBTA provides no process for authorizing incidental take of MBTA-protected birds. As a result, birds that are not covered under the ESA that may be adversely affected by the project cannot be covered by take authorizations. Regardless, incidental take of individual MBTA-protected species is unlikely to adversely affect MBTA-protected species as a whole; however, any take of MBTA-protected species should be documented and reported in a similar manner as any endangered or threatened species of wildlife listed under the ESA.

2.3 Hawai‘i Revised Statutes 195D

The purpose of Hawai‘i Revised Statutes (HRS) 195D is "to ensure the continued perpetuation of indigenous aquatic life, wildlife, and land plants, and their habitats for human enjoyment, for scientific purposes, and as members of ecosystems" and is regulated by the Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife. HRS 195D-4 states that any endangered or threatened species of fish or wildlife recognized by the ESA shall be so deemed by the state statute. Like the ESA, the unauthorized take of such endangered or threatened species is prohibited (HRS 195-D-4(e)), but incidental take licenses can be obtained (HRS 195D-21). In addition to species protected under the ESA, rules adopted under HRS 195D-4 allow for the listing of indigenous species as threatened or endangered for the following reasons:

- Habitat destruction or alteration (current or predicted)
- Overexploitation
- Disease or predation
- Lack of regulatory mechanisms
- Other factors threatening the species' continued existence

Determinations are made based on all available sources of data (scientific, commercial, and other) and consultation with appropriate agencies (federal, state, and county) and interested organizations and parties.

3 LITERATURE REVIEW

SWCA performed a literature review during preparation of the field survey. The purpose of the literature review was to conduct a preliminary desktop habitat assessment to evaluate whether special-status species (or their habitats), and sensitive natural communities are known to occur in the survey area.

4 SITE INFORMATION

The survey area is within the *ahupua‘a* (land division) of Wailuku in the *moku* (district) of Wailuku on the *mokupuni* (island) of Maui. The survey area is located within the Maui High School campus at 660 Lono Avenue and encompasses approximately 6.5 acres. Mean annual rainfall for the survey area is approximately 16 inches (41 centimeters). Rainfall is typically highest November through April and lowest May through October (Giambelluca et al. 2013).

5 METHODS

SWCA reviewed available scientific and technical literature regarding natural resources in and near the survey area. This literature review encompassed a thorough search of referenced scientific journals, technical journals and reports, environmental assessments, environmental impact statements, relevant government documents, USFWS online data, and unpublished data that provide insight into the area's natural history and ecology. SWCA also reviewed available geospatial data, aerial photographs, and topographic maps of the survey area.

On July 24, 2023, the SWCA biologist conducted a comprehensive survey of the proposed project area (Figure 1). The survey was conducted on foot and documented all vascular plant, vertebrate (birds, mammals, and amphibians), and macroinvertebrate (gastropods and arthropods) species within the survey area. These surveys specifically focused on locating populations of special-status species; however, specific acoustic surveys for the endangered Hawaiian hoary bat, or ʻopeʻapeʻa (*Lasiurus cinereus semotus*), were not conducted. Identification of birds was aided by 10 × 42–millimeter binoculars, as well as auditory vocalization identifications. Any signs of animals, such as scat or tracks, were noted. All vegetation types in the survey area were described and mapped in ArcGIS Field Maps on a Samsung Galaxy 2 tablet. Figures were created using ArcGIS Pro 2.7. Photographs were taken during the survey using an iPhone XR.

Figure 1. Proposed project area.

6 RESULTS

6.1 Flora

In all, 44 plant species were recorded in the survey area, two of which, hau (*Hibiscus tiliaceus*) and ʻuhaloa (*Waltheria indica*), are native to the Hawaiian Islands. No special-status plant species were observed in the survey area. Appendix A provides a list of all vascular plant species observed during the survey on July 24, 2023.

6.2 Vegetation and Land Cover Types

The vegetation in the survey area consists of two vegetation types, koa haole scrubland and Napier grassland, described in detail below.

6.2.1 Koa Haole Scrubland

The survey area was almost entirely (>80%) covered by the koa haole scrubland vegetation type. This vegetation type is dominated by a koa haole (*Leucaena leucocephala*) overstory. Other woody overstory species such as hau, ʻopiuma (*Pithecellobium dulce*), tree tobacco (*Nicotiana glauca*), and fiddlewood (*Citherexylum spinosum*) can occasionally be seen in the survey area. The understory is largely dominated by Guinea grass (*Urochloa maxima*) and buffelgrass (*Cenchrus ciliaris*), with ruderal weed species such as hairy spurge (*Euphorbia hirta*), coatbuttons (*Tridax procumbens*) and the indigenous species ʻuhaloa distributed throughout (Figure 2). *Macroptilium atropurpureum,* a vining species in the pea family, was seen twining through the midstory in some areas. ʻUhaloa and hau are both very common native species in lowland areas of the Hawaiian Islands.

Figure 2. Koa haole scrubland vegetation type in the survey area.

6.2.2 Cultivated Edible Plant Garden

A portion of the survey area was irrigated and planted with a wide variety of edible plant species, including banana (*Musa* hybrid), tapioca (*Manihot esculenta*), papaya (*Carica papaya*), long beans (*Vigna unguiculata* subsp. *sesquipedalis*), kalo (Colocasia esculenta), okra (*Abelmoschus esculentus*), eggplant (*Solanum melongena*), tomato (*Solanum lycopersicum*), dragonfruit (*Selenicereus undatus)*, wingbeans (*Psophocarpus tetragonolobus*), pumpkin (*Cucurbita pepo*), chili peppers (*Capsicum annuum*), and lime trees (*Citrus* × *aurantiifolia*) (Figure 3).

Figure 3. A cultivated edible plant garden found within the survey area. The garden included a wide variety of edible fruit and vegetable species.

6.3 Fauna

6.3.1 Avifauna

Three nonnative bird species were observed during the survey (Table 1). All three of these species are common in disturbed low-elevation areas on Maui.

Table 1. Birds Observed in and Near the Survey Area on July 24, 2023

Common Name	Scientific Name	Status*	MBTA Species (Yes or No)
Spotted dove	*Spilopelia chinensis*	NN	No
House finch	*Haemorhous mexicanus*	NN	No
Zebra dove	*Geopelia striata*	NN	No

* NN = nonnative permanent resident

Endangered Hawaiian waterbirds were not detected during the field survey, and the project footprint does not consist of potential foraging habitat such as lowland streams with herbaceous riparian vegetation or tidal mudflats that would support waterbird foraging.

Seabirds were not observed in the survey area but may potentially fly over the survey area to and from higher elevation nesting areas during the seabird fledging period.

6.3.2 Mammals

Feral cat (*Felis catus*) scat was found in the site. Although house mice (*Mus musculus*) and rats (*Rattus* spp.) were not detected, they are also likely to occur in the survey area. In addition, federally and state endangered Hawaiian hoary bat forage and roost habitat does occur in the survey area within the vegetation type.

6.3.3 Terrestrial Reptiles and Amphibians

No reptiles or amphibians were detected. No terrestrial reptiles and amphibians are native to Hawai‘i.

6.3.4 Insects and Other Invertebrates

No native insects or other invertebrates were observed during the survey. Tree tobacco, which serves as a nonnative host plant for the federally and state-listed endangered Blackburn’s sphinx moth (*Manduca blackburni*), was found on-site and examined, but no eggs or larvae of this species were seen. Nonnative invertebrates observed were wandering glider (*Pantala flavescens*) and Surinam cockroach (*Pycnoscelus surinamensis*).

7 SPECIAL-STATUS SPECIES AND CRITICAL HABITAT

No special-status species were observed in the survey area.

7.1 Flora

No USFWS-designated critical habitat for federally endangered plant species was observed within the survey area.

8 DISCUSSION AND RECOMMENDATIONS

The following relevant avoidance and mitigation measures are provided to reduce or eliminate project-related impacts and to avoid adverse effects on special-status species. These measures should be implemented as part of the project.

8.1 Flora

The vegetation type and species identified during the survey are not considered unique, and the native plant species recorded at the site are not threatened or endangered, proposed for listing, or a candidate plant. Ninety-nine percent of the plant species observed in the survey area are not native to the Hawaiian Islands. The proposed project is not expected to have a significant, adverse impact to botanical resources.

Weedy nonnative plant species are common in the survey area. Most of these weedy species are widespread in Hawai‘i, and their control is not expected to result in a significant decrease in their number or distribution. However, construction activities are known to spread invasive species to new areas through the movement of vehicles and materials. For this reason, SWCA recommends the following invasive species minimization measures to avoid the unintentional introduction or transport of new terrestrial invasive species to Maui:

- All construction equipment and vehicles arriving from outside of Maui should be washed and inspected before entering the survey area.
- Construction materials arriving from outside of Maui should also be washed and/or visually inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful nonnative species (plants, amphibians, reptiles, and insects).
- Inspection and cleaning activities should be conducted at a designated location before entering the survey area. The inspectors should be qualified botanists and/or entomologists able to identify invasive species that are of concern relevant to the point of origin of the equipment, vehicle, or material.
- When possible, raw materials (e.g., gravel, rock, soil) should be purchased from a local supplier on Maui to avoid introducing nonnative species not yet present on the island.
- If landscaping occurs as part of the project, native Hawaiian plants or non-invasive plants should be used to the maximum extent possible. Additional information on selecting appropriate (non-invasive) plants for landscaping can be obtained from the following online sources:
    - http://www.plantpono.org/pono-plants/
    - http://www.hear.org/alternativestoinvasives/pdfs/mcaac_hpwra_a2i_list.pdf
    - http://www.hear.org/oisc/oahuearlydetectionproject/pdfs/oedposterwhatnottoplant.pdf

8.2 Fauna

8.2.1 Seabirds

Major threats to the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and threatened Newell’s shearwater (*Puffinus newelli*) include the attraction of adults and newly fledged juveniles to bright lights while transiting between their nest sites and the ocean. Juvenile birds are particularly vulnerable to light attraction and are sometimes grounded when they become disoriented by lights (Mitchell et al. 2005). Many of these grounded birds are vulnerable to mammalian predators or to being struck by vehicles. The following recommendations are provided to avoid and minimize light attraction of the endangered Hawaiian petrel and threatened Newell’s shearwater to the survey area:

- Construction activity should be restricted to daylight hours as much as practicable during the seabird breeding season (April–November) to avoid the use of nighttime lighting that could attract seabirds.
- All outdoor lights should be shielded to prevent upward radiation. This has been shown to reduce the potential for seabird attraction (Reed et al. 1985; Telfer et al. 1987).
- Outside lights that are not needed for security and safety should be turned off from dusk through dawn during the fledgling fallout period (September 15–December 15).

8.2.2 Hawaiian Hoary Bat

Hawaiian hoary bats occur on Maui in native, nonnative, agricultural, and developed landscapes (U.S. Department of Agriculture 2009; USFWS 1998). Hawaiian hoary bats forage in open, wooded, and linear habitats with a wide range of vegetation types. These animals are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet (91.4meters [m]) offshore (U.S. Department of Agriculture 2009). Hawaiian hoary bats typically roost in trees greater than 16 feet (5 m) 1) with dense canopy foliage or 2) in the subcanopy when the canopy is sparse and there is open access for launching into flight (Gorresen et al. 2013; U.S. Department of Agriculture 2009). Hawaiian hoary bats have been documented roosting in mango trees (*Mangifera indica*) and may roost in other trees (e.g., hau) that occur in the survey area.

Direct impacts to bats could occur during vegetation removal if a juvenile bat that is too small to fly but too large to be carried by a parent is present in a tree or branch that is cut down. To prevent direct impacts to the Hawaiian hoary bat, the following measures are recommended:

- No trees taller than 15 feet (4.6 m) in the survey area should be trimmed or removed between June 1 and September 15 when flightless juvenile bats may be roosting in the trees.
- Any fences that are erected as part of the project should have a barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire.

Implementation of these measures, which have been promulgated by the USFWS (1998), is expected to result in avoidance of all direct impacts to Hawaiian hoary bats. Because all impacts to the Hawaiian hoary bat will be discountable, the proposed project *may affect, but is not likely to adversely affect*, individuals or populations of the species.

8.2.3 Blackburn's Sphinx Moth

The Blackburn's sphinx moth is one of Hawaii's largest insects and has a wingspan of up to 12 centimeters. It is closely related to the North American tomato hornworm (*Manduca quinquemaculata*), with which it has been confused in the past.

The Blackburn's sphinx moth is currently found in topographically diverse landscapes and in areas with low to very high levels of nonnative vegetation. Blackburn's sphinx moth larvae forage, shelter, and develop on two host plant species in the genus *Nothocestrum* (*N. latifolium* and *N. breviflorum*), both of which themselves are endangered species. At lower elevations, moth larvae are found most often on the nonnative tree tobacco but have also been found on commercial tobacco (*Nicotiana tabacum*), eggplant (*Solanum melongena*), tomato (*Solanum lycopersicum* var. *cerasiforme*) (USFWS 2005c), and the indigenous pōpolo (*Solanum americanum*). Adult moths have been observed feeding on the native morning glory (*Ipomoea indica*) and hala pepe (*Pleomele auwahiensis*), but they are expected to feed on a range of potential host plants with flowers that are adapted to moth pollination. Possible native adult nectar plants include maiapilo and ʻilieʻe (*Plumbago zeylanica*), but nonnative plants, including tree tobacco, may be used by adult moths for feeding.

Vegetation disturbance can dislodge Blackburn's sphinx moth eggs and soil disturbance can result in crushing of pupae. The death of individual Blackburn's sphinx moths would impact the moth population in the short term, but the insect's vulnerability is even more closely tied to the availability of host plants within suitable habitat. Therefore, disturbance of a site containing Blackburn's sphinx moth larval host plants may result in a decline in successful Blackburn's sphinx moth breeding.

To minimize the potential for Blackburn's sphinx moth pupae to be crushed as a result of soil disturbance within the project area, we recommend the following measures be taken one year prior to groundbreaking to remove larval host plants from the site and thereby stop attracting moths to a site where they may be injured or killed. The following procedures entail habitat removal and translocation of eggs and larvae and therefore should not be conducted until take resulting from such actions is addressed pursuant to the ESA (through section 7 consultation or a Habitat Conservation Plan) and HRS 195D.

- Host plants without eggs or larvae should be cut to minimize the likelihood that a moth may use the plant and pupate in the soil near the plant. Maintain cut stems free of growth by painting them with herbicide to prevent use by the Blackburn's sphinx moth. Root disturbance could dislodge pupae; therefore, the unoccupied plant should be cut and treated, but soil and plant roots should be left undisturbed for a period of one year. A 10-meter (33-foot) disturbance-free buffer must be established around the host plant to prevent disturbance of any pupating larvae in the ground around the plant. After one year, roots may be removed and soil compaction and disturbance related to the project may take place within the buffer area.
- If Blackburn's sphinx moth eggs or larvae are present on the plant, either wait until the plant is free of Blackburn's sphinx moth eggs and larvae and then follow the steps outlined above to remove the plant or follow the protocols specified in your Permit to remove them to a new location. Repeat surveys and removal of Blackburn's sphinx moth–free plants until all plants are removed.
- Once tree tobacco is removed from the project site, these areas should be kept free of tree tobacco to minimize the likelihood that moths will be attracted to the project site to breed in an area where they may not survive. If soil is disturbed and left fallow during project build-out, there is the potential for tree tobacco plants to become established within the project site after groundbreaking. Therefore, after groundbreaking, disturbed areas should be monitored closely and maintained or kept covered by barrier material to prevent tree tobacco from becoming established within active construction zones. If tree tobacco becomes established, the steps above would need to be repeated to ensure Blackburn's sphinx moths are not injured or killed as a result of the project.

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APPENDIX A

Survey Plant List

Table A-1 provides a checklist of plant species observed by SWCA on July 24, 2023, during surveys of the proposed Relocation of DOE Maui District Mowers and Community School for Adults project area. The plant names are arranged alphabetically by family and then by species into two groups: monocots and dicots. The taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999) and Staples and Herbst (2005). Recent name changes are those recorded in Wagner et al. (2012).

Table A-1. List of Vascular Plants Observed within the Proposed Survey Area on July 24, 2023

Family	Scientific Name and Authorship	Hawaiian and/or Common Name	Status*
Monocots			
Agavaceae	*Cordyline fruticosa* (L.) A.Chev.	kī, ti	P
Araceae	*Colocasia esculenta* (L.) Schott	kalo, taro	P
Musaceae	*Musa* hybrid	banana, apple banana	X*
Poaceae	*Cenchrus ciliaris* L.	buffelgrass	X
Poaceae	*Cenchrus echinatus* L.	common sandbur, ʻumeʻalu, mauʻu kukū	X
Poaceae	*Chloris barbata* Sw.	swollen fingergrass	X
Poaceae	*Urochloa maxima* (Jacq.) R.D.Webster	Guinea grass	X
Zingiberaceae	*Zingiber officinale* Roscoe	ginger	X*
Dicots			
Anacardiaceae	*Mangifera indica* L.	mango, manakō, manakō meneke, meneke	X
Apocynaceae	*Catharanthus roseus* (L.) G.Don	Madagascar periwinkle, kīhāpai	X
Araliaceae	*Schefflera actinophylla* (Endl.) Harms	octopus tree, umbrella tree	X
Asclepiadaceae	*Calotropis gigantea* (L.) W.T.Aiton		X
Asteraceae	*Pluchea carolinensis* (Jacq.) G.Don	sourbush, marsh fleabane	X
Asteraceae	*Tridax procumbens* L.	coat buttons	X
Boraginaceae	*Cordia subcordata* Lam.	kou	I
Cactaceae	*Selenicereus undatus* (Haw.) D.R.Hunt	dragonfruit	X*
Caricaceae	*Carica papaya* L.	papaya	X
Cucurbitaceae	*Cucurbita pepo* L.	pumpkin	X*
Cucurbitaceae	*Momordica charantia* L.	balsam pear, bitter melon	X
Euphorbiaceae	*Euphorbia hirta* L.	hairy spurge, garden spurge, koko kahiki	X
Euphorbiaceae	*Euphorbia hyssopifolia* L.	spurge	X
Euphorbiaceae	*Manihot esculenta* Crantz	cassava	X
Fabaceae	*Caesalpinia pulcherrima* (L.) Sw.	Barbados-pride	X*
Fabaceae	*Chamaecrista nictitans* subsp. *patellaria* var. *glabrata* (Vogel) H.S.Irwin & Barneby	partridge pea, laukī	X
Fabaceae	*Indigofera suffruticosa* Mill.	indigo, ʻinikō, ʻinikoa, kolū	X
Fabaceae	*Lablab purpureus* (L.) Sweet	hyacinth bean, pāpapa, pī	X
Fabaceae	*Leucaena leucocephala* (Lam.) de Wit	koa haole	X
Fabaceae	*Macroptilium atropurpureum* (DC.) Urb.		X
Fabaceae	*Psophocarpus tetragonolobus* (L.) DC.)	wingbean	X*
Fabaceae	*Pithecellobium dulce* (Roxb.) Benth.	ʻopiuma	X

Family	Scientific Name and Authorship	Hawaiian and/or Common Name	Status*
Fabaceae	*Vigna unguiculata* subsp. *sesquipedalis*	longbean	X*
Malvaceae	*Abelmoschus esculentus* (L.) Moench	okra	X*
Malvaceae	*Hibiscus tiliaceus* L.	hau	I
Myrtaceae	*Eucalyptus sp.*		X
Myrtaceae	*Eugenia uniflora* L.	Surinam cherry, pitanga	X
Papaveraceae	*Argemone mexicana* L.	Mexican poppy	X
Rutaceae	*Citrus* × *aurantiifolia* (Christm.) Swingle	lime	X*
Solanaceae	*Capsicum annuum* L.	bird pepper, nïoi, nïoi pepa	X
Solanaceae	*Nicotiana glauca* Graham	tree tobacco, mustard tree, mākāhala, paka	X
Solanaceae	*Solanum lycopersicum*	tomato, ʻōhiʻa lomi, kamako, ʻōhiʻa, ʻōhiʻa haole	X*
Solanaceae	*Solanum melongena* L.	eggplant	X
Sterculiaceae	*Waltheria indica* L.	ʻuhaloa	I?
Tiliaceae	*Corchorus olitorius* L.		X
Verbenaceae	*Citharexylum spinosum* L.	fiddlewood	X

Notes: P = Polynesian introduced, P? = probably Polynesian introduced but possibly introduced in historic times, I = indigenous, I? = probably indigenous but possibly naturalized, E = endemic, E? = probably endemic but possibly naturalized (see pp. 126–127 in Wagner et al. 1999), X = nonnative, X* = nonnative cultivated.

APPENDIX D

Archaeological Literature Review and Field Inspection

Literature Review and Field Inspection Study to Inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Maintenance Branch and Maui High School Facilities Project

August 2024

Prepared by: Nohopapa Hawai‘i, LLC

FINAL Literature Review and Field Inspection Study to Inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Development Branch and Maui High School Facilities Project

MHS Campus, Wailuku Ahupua‘a, Wailuku Moku, Maui Mokupuni, Tax Map Key (TMK): [2] 3-8-007:098

Prepared by:

NOHO PAPA HAWAI‘I

Prepared for:

BOWERS + KUBOTA

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Date	August 2024
Land Jurisdiction	The State of Hawaiʻi is listed as the Fee Owner of the approximately 2.2 acre project area (County of Maui 2023).
Project Proponent	DOE-FDB
Project Area	The project area occupies a southern subsegment of the study area - TMK [2] 3-8-007:098 - located at the Department of Education (DOE) Facilities Development Branch (FDB) and Maui High School (MHS) Facilities Project at MHS, 660 Lono Avenue, Kahului, HI, 96732
Project Area Acreage	2.2 acres (95,832 square feet)
Project Description	Proposed is the expansion of MHS facilities to include construction of two new buildings - a new one-story building for the DOE Maui District Mowing Facility (6,400 square feet), paved areas and a parking lot (an additional 11,600 square feet), and a new one-story building for the McKinley Community School for Adults Maui Campus (CSA; 9,125 square feet) and associated parking lot (18,450 square feet) - as well as one access routes for the DOE-FDB connecting each facility to West Papa Avenue, and electrical, communications, water, sewer, and drainage utilities for each building on an undeveloped tract of land adjacent to the existing high school. The CIA and LRFI studies will be used to inform an Environmental Assessment (EA) under Hawaiʻi Environmental Policy Act (HEPA) Hawaiʻi Revised Statutes (HRS) §343 and to initiate historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawaiʻi Administrative Rules (HAR) §275. Anticipated ground disturbance for the project is listed below. **DOE Maui District Mowing Facility:** Facility (6,400 square feet) - 64 feet long x 67 feet wide x 2 feet deep Paved areas and a parking lot (11,600 square feet) - 141 feet long x 120 feet wide x 1.17 feet deep Drainage utilities - 707 feet long x 2 to 3 feet wide x 4 to 7 feet deep, 65 feet long by 37 feet wide x 8.6 feet deep (detention system) Water utilities - 385 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep Sewer utilities – 338 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep **McKinley Community School for Adults Maui Campus:** Facility (CSA; 9,125 square feet) - 125 feet long x 73 feet wide x 4 feet deep McKinley Community School for Adults Maui Campus parking lot (18,450 square feet) – 152.5 feet long x 121 feet wide x 1.17 feet deep Drainage utilities - 345 feet long x 2 to 3 feet wide x 4 to 7 feet deep Water utilities - 297 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep Sewer utilities – 259 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep Access routes for the DOE-FDB connecting each facility to West Papa Avenue - 346 feet long x 24 feet wide x 1.17 feet deep

	Fence – 1258 feet long x 1 feet wide x 3.5 feet deep **Electrical/Communication Utilities:** Primary Electrical, Fire Alarm, Communication - 273 feet long x 3 feet wide x 3 deep Primary Electrical – 197 feet long x 16 feet wide x 3 feet deep Secondary Electrical – 400 feet long x 16 feet wide x 3 feet deep Communications – 341 feet long x 16 feet wide by x 3 feet deep Fire Alarm – 386 feet long x 16 feet wide x 3 feet deep Fire Alarm, Communications – 301 feet long x 16 feet wide x 3 feet deep Lighting – 906 feet long x 16 feet wide x 3 feet deep
Document Purpose	The LRFI study will be used to inform project planning, an Environmental Assessment triggered by Hawai‘i Revised Statutes (HRS) §343, and to initiate historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawai‘i Administrative Rules (HAR) §275.
Regulatory Context	The proposed project is a DOE state agency undertaking, an action that triggers an Environmental Assessment and Cultural Impact Assessment under Hawai'i Revised Statutes (HRS) §343, and historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawai‘i Administrative Rules (HAR) §275.
Built Environment	The project area is located in the northern reaches of the Central Maui Plains and sand dune system. The MHS campus is ensconced in a heavily developed suburb within the city of Kahului. The project area is bound to the south by West Papa Avenue, a housing development, and beyond them the Dunes at Maui Lani Golf Course, to the west by Molokai Hema Street and housing development, to the north by Kahului Park, Haumanā Baptist Church, and Kahului Elementary School further to the north, and to the east by Lono Avenue and additional housing development. The project area is located a little over one mile south of Kahului Harbor, and roughly one half mile northeast of agricultural lands.
Ethnohistorical Research Methods	Background research using culturally-informed methods and approaches detailed in the “Ethnohistorical Research Methods” subsection of this study was used to build a place-based, contextual understanding and synthesis of: ○ Natural/cultural resources (environmental zones, soils, geology, plants, wai) associated with the project area, ○ Native Hawaiian oral traditions and accounts including ka‘ao, mo‘olelo, inoa ‘āina, mele, oli, ‘ōlelo no‘eau, nūpepa (histories, narratives, place names, songs, chants, proverbs, newspapers) associated with the project area, ○ Cultural resources, practices, and beliefs found within the broad geographical area that hosts the project area, including its relationships to people and places throughout the pae ‘āina, ○ Post-European contact historical accounts (early visitor accounts, Plantation Era records, historical maps, English language newspapers) associated with the project area, ○ Kingdom of Hawai‘i land use and resource management practices within the project area and vicinity (Māhele information-Boundary Commission Testimonies, Land Commission Awards, Native & Foreign Testimonies and Registers, Government Land Grants, Crown lands), ○ Archaeological information pertaining to cultural and historic sites within the project area and vicinity in order to understand existing and the potential for additional wahi kūpuna/historic properties

	○ Wahi kūpuna stewardship best practices and historic preservation compliance recommendations
Field Work	Fieldwork was conducted on on July 31, 2023, by Nohopapa Hawai'i, LLC field technicians Momi Wheeler and Kalama'ehu (Holden) Takahashi, under the supervision of Principal Investigator Rachel Hoerman, Ph.D., State Historic Preservation Department (SHPD) permit #23-28. A pedestrian field inspection of 95% of the project area was performed and required 2.5 hours to complete. Its purpose was to record current conditions and generate information that could be used to understand the presence of known or newly-noted historic properties and the potential, to the extent possible, for the presence of historic properties. Limitations of the field inspection included a small segment of the northeastern project area that was overgrown with vegetation and inaccessible (see Figure 22) and a fenced-off and potentially abandoned area that appeared to contain fixtures for utilities (see Figure 24), both of which were inaccessible.
Literature Review and Field Inspection Results Summaries	The project area is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians and must first be understood in that context. Ke Kula o Kama'oma'o, the central plains of the isthmus region of Maui, is comprised of dune systems oral traditions identify as battlefields and burial grounds. Four decades of previous archaeological studies support the Hawaiian cultural understanding of the dune systems in Central Maui, including those underlying the project area, as a burial ground. Additionally, the combined literature review and field inspection yielded one 2009 SHPD determination for the northeast MHS campus, northeast of the project area, and potential history property within and outside of the project area that requires additional investigation to confirm. The 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The letter also requires implementation of an Archaeological Monitoring Program for any ground-disturbing activities. Background research revealed no previously-identified historic properties in the project area. Likewise, no definitive historic properties were located in the project area during Nohopapa's recent field inspection. However, a surface scatter of shell midden, potential evidence for a historic property that requires further investigation, was noted along the north central border of the project area. In the project area vicinity, the Maui Lani Burial Complex (SIHP #-50-50-04-02797) is located roughly ¼ mile northwest of the current project area, and the Kahului Historic District (SIHP #-1607) is located roughly ½ mile to the north (Rotunno-Hazuka et al. 1995:i). SIHP #5404, two burials, were revealed on the Maui Lani development and ordered disinterred and relocated to SIHP #4146, a burial preserve in the Maui Lani golf course whose precise location is indeterminate based on the information currently available (Rotunno-Hazuka and Pantaleo 2004:i). Extensive alteration of the vegetation, topography, and hydrography of the project area and vicinity commenced with nineteenth century ranching and

	continued with industrialized agricultural activities and the expansion of Kahului suburbs over the course of the last 40 years. Given that Shefcheck, Dega, and Fortini 2005 was not available, and documentary evidence of subsurface excavations in the project area were not provided (Cordle, Fortini, and Dega 2007), not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area beyond the heightened probability for burials.
Historic Preservation Recommendations	The project area is slated for redevelopment, therefore effects to any newly-discovered historic properties located in the project area are possible. This literature review and field inspection of the proposed project area discloses evidence for and discusses lines of information used to inform the historic preservation next steps recommendations outlined here: ○ Ke Kula o Kamaʻomaʻo saw heated battles, and served the widely-known Hawaiian cultural function as an internment space for the remains of the deceased and is a known burial ground; ○ No definitive historic properties are currently associated with the project area; ○ One potential historic property requiring further investigation to confirm was noted during the field inspection – a shell midden scatter on the north central project area boundary; ○ A 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The letter also requires implementation of an Archaeological Monitoring Program for any ground-disturbing activities; ○ Human burials have been revealed south (Maui Lani development) and northwest (Maui Lani Burial Complex, SIHP #-50-50-04-02797) of the current project area, in sand dune deposits that also underlie the current project area; ○ Not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area beyond the enhanced likelihood for burials. Based on the above listed facts, we conclude there exists a heightened probability for burials and historic properties in the project area as well as evidence for a potential historic property, a shell midden scatter, that requires additional archaeological investigation to understand and evaluate. Further investigation is thus required before potential project impacts to iwi kūpuna and historic properties can be adequately understood, evaluated, and mitigated for, if needed. Therefore, our historic preservation next steps recommendations consist of a community-based, archaeological inventory survey comprised of an ethnographically-informed, SHPD-reviewed and approved Archaeological Inventory Survey Plan (AISP) containing research questions and lines of inquiry meaningful to the Hawaiian and local community, implementation of the AISP with archaeological and cultural monitors present, and SHPD-

	reviewed and approved Archaeological Inventory Survey Report (AISR) before the project can commence. The AISP, AISP implementation, and AISR should realize professional best practices and must additionally meet the standards set forth in HAR §276, "Rules Governing Standards for Archaeological Inventory Surveys and Reports," (HAR) Chapter 13-276 2002). Since the proposed project is located in known burial grounds documented by Hawaiian oral traditions and secondarily by piecemeal archaeological evidence, it is further recommended that community consultation occur to determine whether it is desirable to secure a previously-identified designation for all potential future burials in the project area. If so, it is recommended that a "previously-identified" designation be secured and documented in the AISP per HAR §13-300-31(a)&(b) in the "Rules of Practice and Procedure Relating to Burial Sites and Human Remains." In accordance with professional best practices, these actions should occur prior to archaeological inventory survey and the historic preservation next steps that follow. Concurrently, and due to the enhanced likelihood for burials to be revealed in the project area, and in alignment with historic preservation next steps recommendations from previous archaeological studies and the 2009 SHPD determination, also recommended are: a SHPD-approved Archaeological Monitoring Plan developed with the local community and in place prior to ground disturbing activities; archaeological and cultural monitoring for all ground disturbing activities; and an archaeological monitoring report meeting professional best practices and the standards of HAR §13-279, "Rules Governing Standards for Archaeological Monitoring Studies and Reports".

PROJECT SCOPE & METHODS

He Leo Mahalo

Mahalo to all the individuals involved with this project. We are grateful to Jared Chang and Matthew Fernandez of Bowers + Kubota Consulting, Inc., for the opportunity to complete this study for the DOE FDB Facilities Improvement Project at MHS. Mahalo nui loa to Stacy Naipo from the State Historic Preservation Department (SHPD) for her support in tracking down archival materials related to the project area.

Introduction

At the request of Bowers and Kubota Consulting, Inc., Nohopapa Hawai'i completed a Literature Review and Field Inspection (LRFI) Study, and Hawai'i Revised Statutes (HRS) §6E Consultation supporting environmental and historic preservation compliance review for the Department of Education (DOE) Facilities Development Branch (FDB) and Maui High School (MHS) Facilities Project at MHS, 660 Lono Avenue, Kahului, Wailuku Ahupua'a, Wailuku Moku, Maui (TMK: [2] 3-8-007:098). The State of Hawai'i is listed as the Fee Owner of the roughly 2.2 acre project area (Figure 1, Figure 2, Figure 3; County of Maui 2023). Note, throughout this report, the entirety of TMK [2] 3-8-007:098 is referred to as the "study area." The "project area" refers to the location of the proposed project and its associated ground disturbance.

Project Description

Proposed is the expansion of MHS facilities to include construction of two new buildings - a new one-story building for the DOE Maui District Mowing Facility (6,400 square feet) plus paved areas and a parking lot (an additional 11,600 square feet) and a new one-story building for the McKinley Community School for Adults Maui Campus (CSA; 9,125 square feet) and associated parking lot (18,450 square feet) - as well as one access routes for the DOE-FDB connecting each facility to West Papa Avenue, and electrical, communications, water, sewer, and drainage utilities for each building on an undeveloped tract of land adjacent to the existing high school (Figure 4).

DOE Maui District Mowing Facility
Facility (6,400 square feet) - 64 feet long x 67 feet wide x 2 feet deep
Paved areas and a parking lot (11,600 square feet) - 141 feet long x 120 feet wide x 1.17 feet deep
Drainage utilities - 707 feet long x 2 to 3 feet wide x 4 to 7 feet deep, 65 feet long by 37 feet wide x 8.6 feet deep (detention system)
Water utilities - 385 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep
Sewer utilities – 338 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep

McKinley Community School for Adults Maui Campus:
Facility (CSA; 9,125 square feet) - 125 feet long x 73 feet wide x 4 feet deep
McKinley Community School for Adults Maui Campus parking lot (18,450 square feet) – 152.5 feet long x 121 feet wide x 1.17 feet deep
Drainage utilities - 345 feet long x 2 to 3 feet wide x 4 to 7 feet deep
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Sewer utilities – 259 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep
Access routes for the DOE-FDB connecting each facility to West Papa Avenue - 346 feet long x 24

feet wide x 1.17 feet deep
Fence – 1,258 feet long x 1 feet wide x 3.5 feet deep

Electrical/Communication Utilities:
Primary Electrical, Fire Alarm, Communication - 273 feet long x 3 feet wide x 3 deep
Primary Electrical – 197 feet long x 16 feet wide x 3 feet deep
Secondary Electrical – 400 feet long x 16 feet wide x 3 feet deep
Communications – 341 feet long x 16 feet wide by x 3 feet deep
Fire Alarm – 386 feet long x 16 feet wide x 3 feet deep
Fire Alarm, Communications – 301 feet long x 16 feet wide x 3 feet deep
Lighting – 906 feet long x 16 feet wide x 3 feet deep

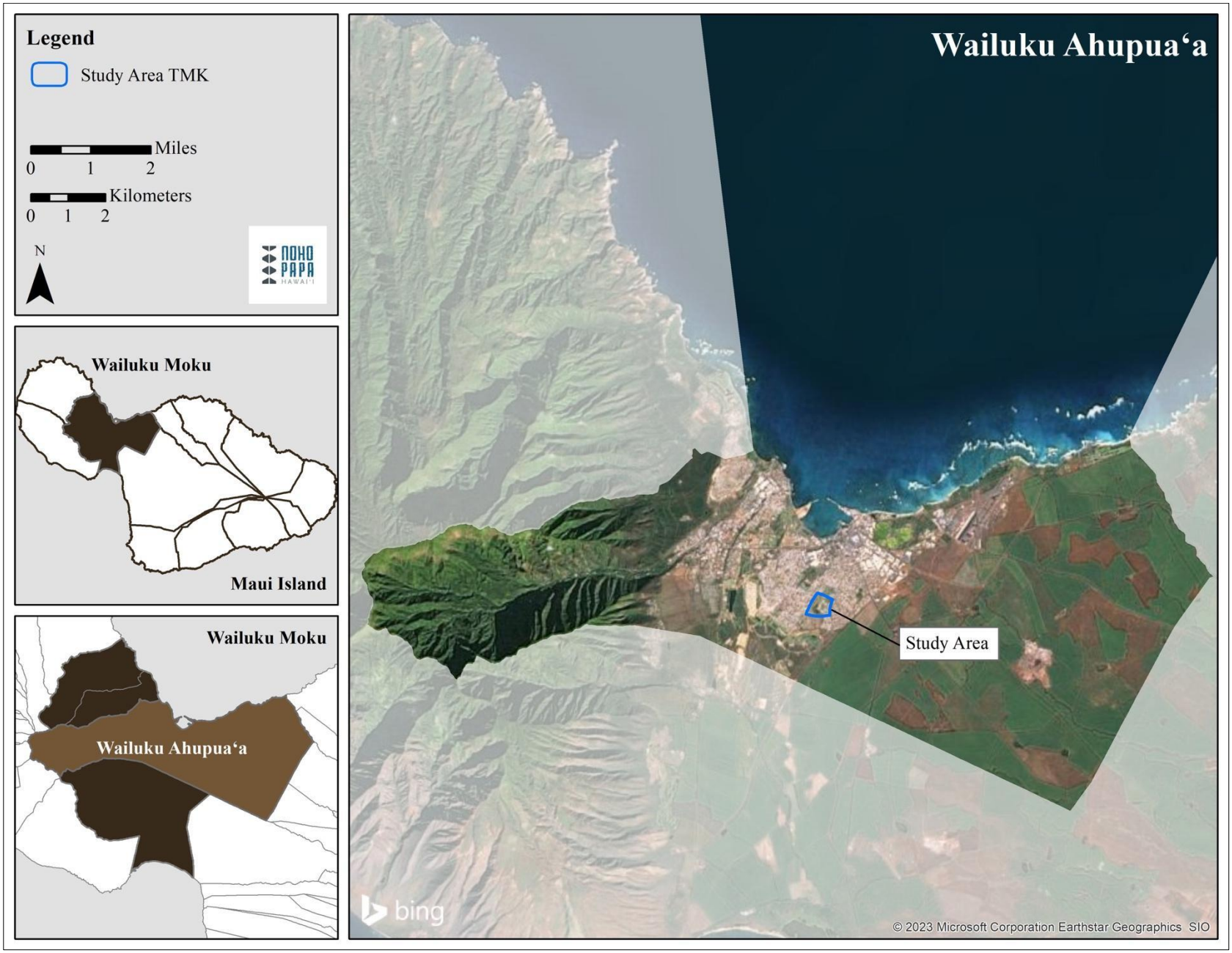


Figure 1. Aerial imagery depicting the location of the study area and project area TMK in Kahului, Wailuku Ahupua‘a, Maui.

Figure 2. Portion of the USGS 7.5-minute topographic quadrangle showing the location of the project area TMK in Kahului, Wailuku Ahupua‘a, Maui.

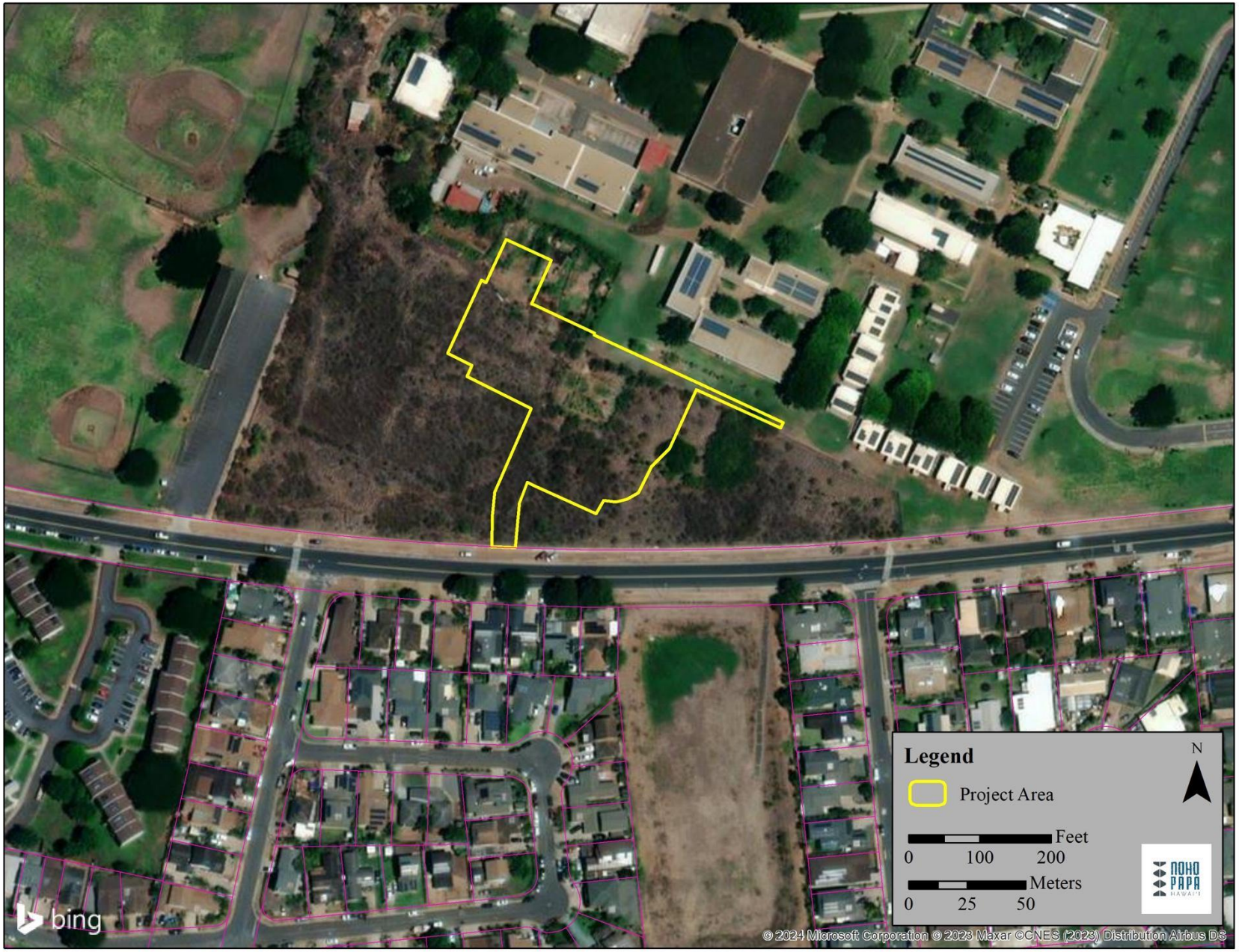


Figure 3. Aerial imagery depicting the project area, delineated in yellow, in Kahului, Wailuku Ahupuaʻa, Maui.

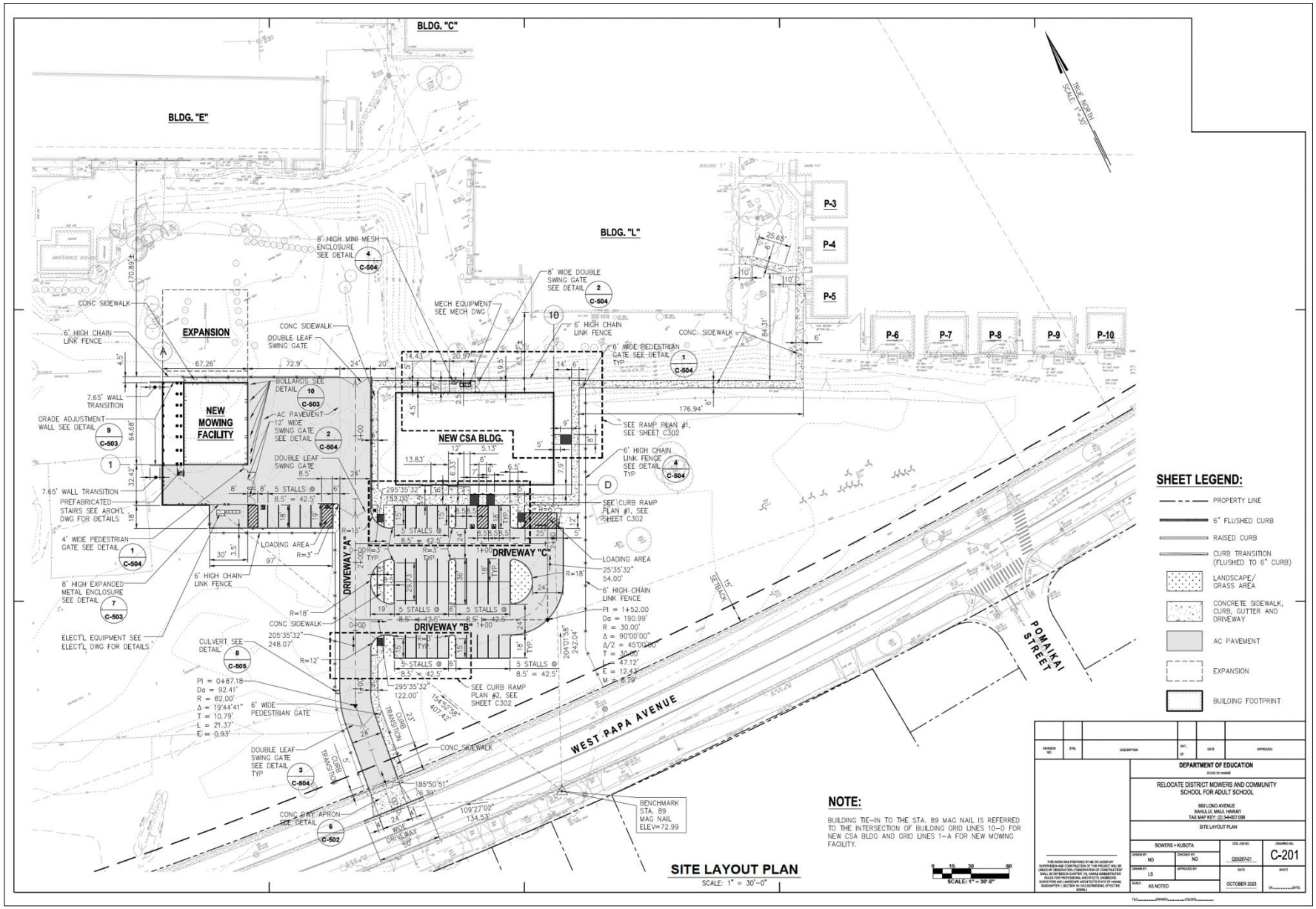


Figure 4. Current design plans for the proposed project illustrating the footprint and estimated ground disturbance associated with the MHS facilities expansion (Bowers and Kubota Consulting, Inc., 2024).

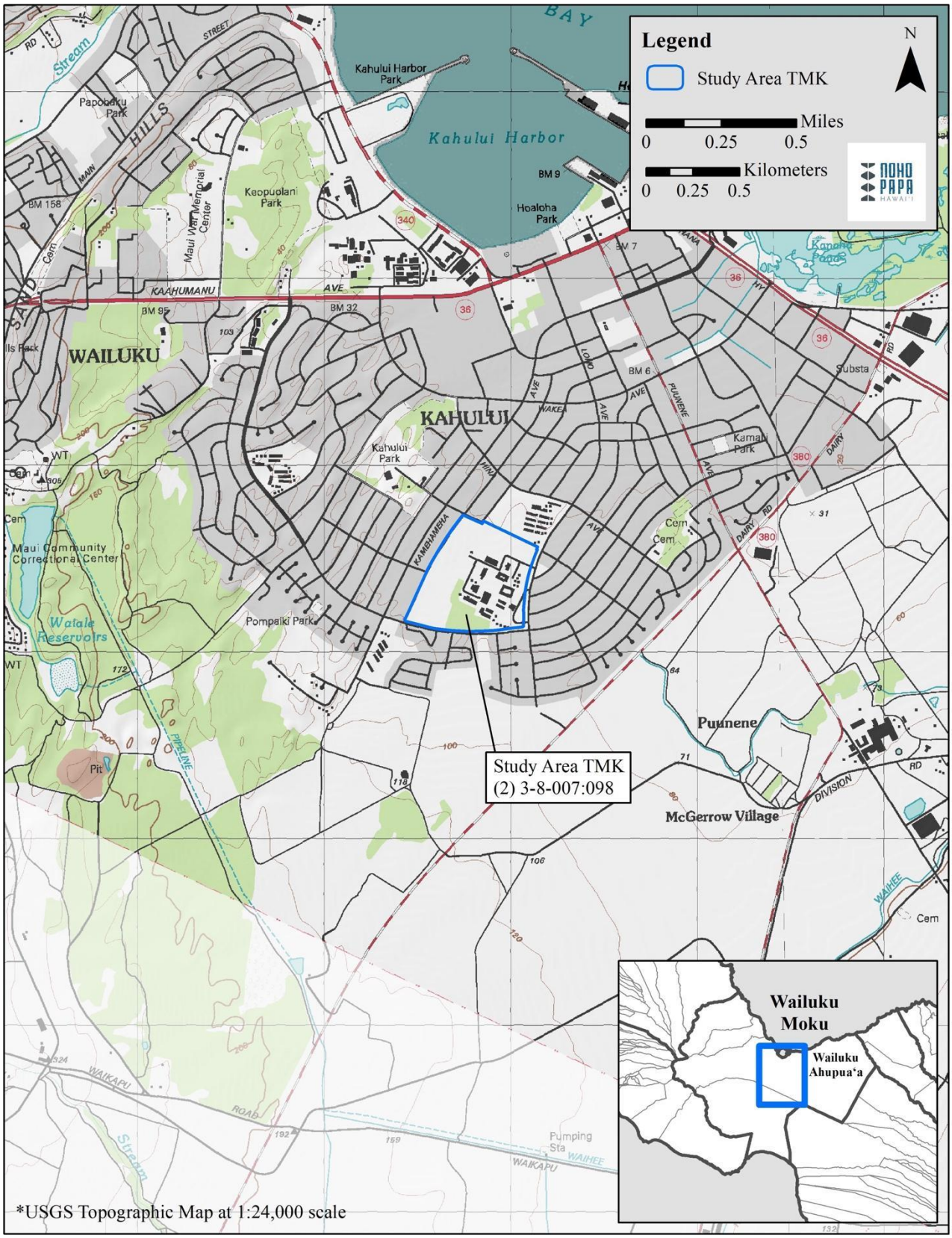


Figure 5. Aerial imagery depicting the project area overlain with the TMK of the project area (TMK [2] 3-8-007:098), and surrounding vicinity.

Document Purpose

This LRFI study reports results from the background research literature review and field inspection, and uses them to: 1) Synthesize what is known about the project area, vicinity, and greater ahupuaʻa, its environmental context, natural and cultural landscape, resources, historical trajectory, and previous compliance archaeological studies, 2) Summarize known and newly-noted wahi kūpuna (Hawaiian ancestral places) and historic properties in their cultural landscape contexts, 3) Provide a predictive model for the presence of possible additional historic properties in the project area and vicinity, 4) Generate next steps wahi kūpuna stewardship and historic preservation compliance recommendations for the historic properties in order to inform wahi kūpuna stewardship, project planning, and satisfy historic preservation compliance requirements.

The LRFI study will be used to inform project planning and an Environmental Assessment triggered by Hawai'i Revised Statutes (HRS) §343 and to initiate historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawaiʻi Administrative Rules (HAR) §275.

Ethnohistorical Research Methods

Background research performed for this study emphasized original efforts and the identification, gathering, and utilization of Hawaiian and other historical resources in order to provide a place-based, culturally-grounded contextualization of land use, settlement patterns, historic properties in the project area in Wailuku Ahupuaʻa through time.

Resources targeted during background research included: Hawaiian oral traditions and other ʻŌlelo Hawaiʻi ethnohistorical resources (including 19th and 20th century Hawaiian scholarship), historical accounts, Māhele and other land documents and maps, Hawaiian and English language newspapers, ethnographic and historical studies, historical photos and records, and previous academic and compliance archaeological studies. Online repositories consulted included: the Hawaiʻi State Archives Digital Collection, the Bishop Museum Library and Archives, the Hawaiian Missions Houses Library and Archives, the University of Hawaiʻi at Mānoa (UHM) Hamilton Library, UHM's Online Maps, Aerial, Photograph and GIS (MAGIS) library, Papakilo Database, Ulukau, and AVA Konohiki. Reports, historical maps and photographs from the Nohopapa internal database as well as books and other publications from the authors' personal libraries were also utilized.

Nohopapa Hawaiʻi's methodological approach for evaluating and using primary ʻike kūpuna (ancestral knowledge) and primary source Hawaiian materials is derived from Kikiloi (2010:80), who writes that researchers must preference:"…testimonies in the ethno-historic record that were (a) recorded first in Hawaiian Language, and (b) written by native Hawaiian people or recorded first hand from their testimony."

In addition to these required attributes, Nohopapa Hawaiʻi researchers possess the skills Kikiloi (2010:80) asserts are necessary for accurate, careful, and respectful utilization of ʻike kūpuna (ancestral knowledge) and primary source Hawaiian materials:

> "(a) an emic (insider) understanding of cultural context, meaning, and metaphor;
> (b) a level of fluency in the native language or ʻōlelo Hawaiʻi (Hawaiian Language)
> (c) a familiarity with ʻāina (environment) as a critical point of reference to orient and position oneself to have legitimacy in interpretation." [Kikiloi 2010:80]

Background research using the methods and approaches described above was used to inform, as relevant, the contextual synthesis of:

- Natural/cultural resources (environmental zones, soils, geology, plants, wai) associated with the project area,
- Native Hawaiian oral traditions and accounts including kaʻao, moʻolelo, inoa ʻāina, mele, oli, ʻōlelo noʻeau, (legends, stories, place names, songs, chants, proverbs) associated with the project area,
- Cultural resources, practices, and beliefs found within the broad geographical area that hosts the project area, including its relationships to people and places throughout the pae ʻāina (archipelago),
- Post-European contact historical accounts (early visitor accounts, Plantation Era records, historical maps, English language newspapers) associated with the project area,
- Archaeological information pertaining to cultural and historic sites within the project area and vicinity in order to understand existing as well as the potential for additional wahi kūpuna/historic properties
- Wahi kūpuna stewardship best practices and historic preservation compliance recommendations

Additionally, a remote public records search of the SHPD archives, University of Hawaiʻi at Mānoa Hamilton Library and Bishop Museum Archives for previous academic and compliance archaeological studies associated with the project area and vicinity in Wailuku Ahupuaʻa was conducted in May and June 2023. The Maui Historical Society's website indicated their holdings were closed to research, and June 2023 email inquiries to the MHS from Nohopapa Hawaiʻi regarding research access or enlisting the MHS's research services received no response.

Field Inspection Methods

Fieldwork was conducted on July 31, 2023, by Nohopapa Hawaiʻi, LLC field technicians Momi Wheeler and Kalamaʻehu (Holden) Takahashi, under the supervision of Principal Investigator Rachel Hoerman, Ph.D., State Historic Preservation Department (SHPD) permit #23-28. A pedestrian field inspection of 95% of the project area was performed and required four hours to complete. Its purpose was to record current conditions and generate information that could be used to understand the presence of known or newly-noted historic properties and the potential, to the extent possible, for the presence of historic properties. Limitations of the field inspection included a small segment of the northeastern project area that was overgrown with vegetation and inaccessible (see Figure 22) and a fenced-off and potentially abandoned area that appeared to contain fixtures for utilities (see Figure 26), both of which were inaccessible.

ENVIRONMENTAL SETTING

This section describes the natural landscape of the project area, including its topography (general elevations, distance inland, and general terrain patterns), vegetation, geology and soils, climate (including rainfall and winds), and hydrology.

The project area is located in Wailuku Ahupuaʻa, Wailuku Moku, at an elevation of 22 to 25 m (72.2 to 16.4 ft) above mean sea level (Google Earth 2023). It occupies an undeveloped tract of land within the Maui High School grounds, in the northern reaches of the Central Maui Plains and sand dune system. The general area has an average high temperature of 23.63° C (74.53° F), and receives approximately 436 mm (17.2 inches) of rain per year (Giambelluca et al. 2013; Geography Department UHM 2023).

The ahupuaʻa of Wailuku, location of the project area, is the largest land division within the moku of Wailuku. It straddles Kahului Harbor, and is bounded to the east by the lands within the moku of Hāmākuapoko and Kula, to the south by Waikapū Ahupuaʻa, and to the west by the ahupuaʻa of Waiehu, both in Wailuku Moku. Lands within the moku of Kaʻanapali and Lāhainā abut the western boundary of Wailuku Ahupuaʻa. The ahupuaʻa encompasses the waters of Kahului Harbor, the Central Maui Plains as well as the eastern reaches of the West Maui Mountains and lands on the western slopes of Haleakalā (Handy, Handy, and Pukui 1972: 510, 511; Google Earth 2023). Hawaiian oral tradition describes Wailuku, along with the ahupuaʻa of Waikapū, Waiehu, and Waiheʻe as "na wai ʻehā (The four waters)", which twentieth century Hawaiian Bishop Museum ethnographer Mary Kawena Pukui (1983: 251, #2300) describes as "[a] poetic term for these places on Maui:, each of which has a flowing water (wai)." Another ʻōlelo noʻeau (Hawaiian proverb or poetical saying) reads "Wailuku i ka malu he kuawa (Wailuku in the shelter of the valleys)" and describes the land division as "repos[ing] in the shelter of the clouds and the valley," Pukui (1983:319, #2912). The project area is located in the Central Maui Plains. A Hawaiian oral tradition gathered and published by nineteenth century foreign researcher Abraham Fornander in his *Collection of Hawaiian Antiquities and Folklore* describes the project area's locale and its character-defining features: "Wailuku is the source of the flying clouds. It is a broad plain where councils are held," (Fornander 1917[4]:304).

Some rain names and wind names associated with Wailuku, Maui, were revealed during background research for this report. The selection discussed below is a surface overview and starting point for further research, not a comprehensive inventory. More Wailuku wind and rain names undoubtedly exist. The makani (winds) and ua (rains) featured here were integrated into dynamic, storied, intertwined Hawaiian ocean, land, and skyscapes. They are emblems and vehicles of Hawaiian ancestral knowledge as well as cultural beliefs, practices, and relationship to ʻāina.

Named rains of Wailuku Ahupuaʻa include the Kiliʻoʻopu, ʻUlalena, Nāulu, and Uhiwai. The Kiliʻoʻopu is a rain and wind (Akana and Gonzalez 2015: 83, 84). Akana and Gonzalez (2015:262, 267) translate ʻUlalena to mean "yellowish-red," and note its affiliation with Wailuku. The widespread Nāʻulu is defined as a "sudden shower" as well as a cloud and wind type (Akana and Gonzalez 2015: 187). Uhiwai is a mist specifically affiliated with ʻĪao Valley in Wailuku (Pukui and Elbert 1986:364). Iʻa-iki is named as the wind of Wailuku in the nineteenth and twentieth century Hawaiian language newspaper editor and government official Moses Kuaea Nakuina's version of the moʻolelo *The Wind Gourd of Laʻamaomao* (Nakuina [Mookini and Nākao, trans.] 2005:55). Oral history shared by Rebecca Nuuhiwa (n.d. in Sterling 1998:63) names Wailuku's wind as "the Makani-lawe-malie, the wind that takes it easy." Relatedly, James Kahale's mele published in 1948 describes Wailuku's wind, also called Wailuku, as "easygoing," (Kahale n.d. in Clark 1989:4).

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the primary soil in the project area and vicinity is Puuone sand (PZUE), 7 to 30 percent slopes (Figure 6). Foote et al. (1972:117) describe Puuone sand soils as consisting of "somewhat excessively drained soils on low uplands," that "developed in material derived from coral and seashells." Foote et al. (1972:117) further describe PZUE as "on sandhills near the ocean," with a surface layer that is "grayish-brown, calcerous sand about 20 inches thick. This is underlain by grayish-brown, cemented sand. The soil is moderately alkaline in the surface layer".

Jaucas sand (JaC) is also present in the study area, with deposits northwest and southeast of the proposed project area. Foote et al. (1972:48) describe Jaucas sand soils as consisting of "excessively drained, calcerous soils that occur as narrow strips on coastal plains, adjacent to the ocean." Foote et al. (1972:48) further describe JaC as "single gran, pale brown to very pale brown, sandy, and more than 60 inches deep. In many places the surface layer is dark brown as a result of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile."

Indigenous and invasive plant species are associated with Wailuku Ahupua'a and the project area and vicinity (Table 1). Background research performed for this report identified indigenous plants linked to the project area vicinity in Wailuku cited in twentieth century surveys and studies (e.g. Foote et al. 1972; Handy, Handy, and Pukui 1972; Krauss 1993). Hawaiians engineered an expansive taro (*Colocasia esculenta* spp.) cultivation system in Waihe'e, Waiehu, Wailuku, and Waikapū that was contiguous and at one point the largest in the archipelago (Handy, Handy, and Pukui 1972:488, 496). Breadfruit (*Artocarpus altilis* spp.) was cultivated in the Wailuku lowlands and plains while dried taro fields may also have been planted with bananas (*Musa* spp.; Handy, Handy, and Pukui 1972:153, 162).

Foote et al. 1972:48, 117 associate invasive trees like kiawe (*Prosopis pallida*), and koa haole (foreign koa; Leucaena), as well as bristly foxtail (*Cenchrus ciliaris*), Bermuda grass fingergrass (*Digitaria eriantha)*, Australian saltbush (*Atriplex semibaccata*), and lantana (*Lantana camara*) with soils found in the project area and vicinity.

Built Environment

The project area is located in the northern reaches of the Central Maui Plains and sand dune system. The MHS campus is ensconced in a heavily developed suburb within the city of Kahului. The project area is bound to the south by West Papa Avenue, a housing development, and beyond them the Dunes at Maui Lani Golf Course, to the west by Molokai Hema Street and housing development, to the north by Kahului Park, Haumanā Baptist Church, and Kahului Elementary School further to the north, and to the east by Lono Avenue and additional housing development. The project area is located a little over one mile south of Kahului Harbor, and roughly one-half mile northeast of agricultural lands.

Figure 6. Overlay of Soil Survey of the State of Hawai‘i (Sato et al. 1973), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001).

Table 1. Table of Endemic and Indigenous Plant Species Associated With the Project Area

Plant Species	Status	Use	Existing in project area	Existing in surrounding area	Previously existing in project area	Previously existing in surrounding area	Citation
Ground Cover/Ferns/Herbs							
Kalo Taro (*Colocasia esculenta* spp.)	Indigenous	Cultural and food staple				X	Handy, Handy, and Pukui 1972:488, 496; Abbott 1992:23; Krauss 1993:178,179
Overstory							
ʻUlu Breadfruit (*Artocarpus altilis* spp.)	Indigenous	Food, wood				X	Handy, Handy, and Pukui 1972:153; Krauss 1993:314
Maiʻa Bananas (*Musa* spp.)	Indigenous	Food				X	Handy, Handy, and Pukui 1972:162; Krauss 1993: 221, 222

CULTURAL LANDSCAPE

An intertwined and contiguous array of significant cultural features and resources constitute the Hawaiian cultural landscape of the project area and vicinity in Wailuku Ahupuaʻa, Wailuku Moku, Maui Mokupuni. Hawaiian oral traditions used to relay ʻike kupuna (ancestral knowledge) and ways of knowing across centuries and generations – from the past through today – are utilized to contextualize the project area in its Hawaiian cultural landscape. These include historical information passed from one generation to the next and transcribed beginning in the nineteenth century through contemporary times. Hawaiian oral traditions relay understandings of things including but not limited to Hawaiian spirituality, culture and cultural practice, history, unique cultural relationships to place and ʻāina, systems of traditional land tenure, sustainability and use, the trajectories of communities, and lives of individuals throughout the pae ʻāina.

Wahi Kūpuna

Wahi kūpuna are special ancestral spaces and places where Native Hawaiians maintain relationships to the past and foster their identity and well-being in the present (The Kaliʻuokapaʻakai Collective 2021:4). As cultural anchors to place, ancestral knowledge and practices, wahi kūpuna are strikingly similar to Traditional Cultural Properties defined by the National Park Service as places associated with the cultural practices or beliefs of a living community that are both rooted in a community's history and important in maintaining its continued cultural identity (Parker and King 1998:1).

Wahi kūpuna and wahi pana (storied places) comprise component parts and/or entire contiguous Hawaiian cultural land, sea, and skyscapes (Pukui, Elbert, and Mookini 1974: x- xii; Oliveira 2014: 78, 79; The Kaliʻuokapaʻakai Collective 2021). Place names embody and perpetuate Hawaiian cultural history, knowledge, and practice. As explained by Oliveira (2014:78): "To Kānaka and other indigenous peoples who share a close connection to their land and use oral traditions to record their history, place names and landmarks serve as triggers for the memory, mapping the environment and ultimately the tradition and culture of a people." Wahi pana and wahi kūpuna are special places and spaces. As noted by Maly and Maly (2022:14,15): "Names would not have been given to – or remembered if they were – mere worthless pieces of topography". Traditional nomenclature indicates the variety of functions that named localities served, such as describing a particular feature of the landscape; indicating a site of cultural and ceremonial significance; recording particular events or practices that occurred in that given area; revealing the source of a natural resource or other materials necessary for a cultural practice; marking trails and trailside resting places; signifying triangulation points for cultural practices; giving notice of residences; showing the use of an area; and recording a notable event that occurred in the area (Maly 2022:14, 15).

Examples specific to Wailuku, Maui, location of the current project and study areas, illustrate the broad genealogical, biographical, and geographical significance and interconnectedness of wahi kūpuna. In the article series "Ka Moʻolelo Hawaiʻi" authored by Nineteenth century Hawaiian scholar Samuel Mānaiakalani Kamakau and originally published in the Hawaiian language newspaper *Ke Au Okoa* from 1869–1871, ruling chief Kapawa is identified as an important historical example of: "Iā Kapaka ka mālama ʻana mai, a me ka hoʻomanaʻo ʻana o ka poʻe kahiko i kahi i hānau ai kēlā aliʻi kēia aliʻi," (Kamakau 1869); "During the time of Kapawa the care of the traditions [began], and traditional society recorded the places that each chief was born," (translated by Kalamaʻehu Takahashi).

The mele below identifies the place of Kapawa's birth at Kūkaniloko, and the location of his death and burial, described by a series of epithets that carefully identifies a sacred burial place in the moku of Wailuku:

ʻO Kapawa ʻo ke aliʻi o Waialua,
I hānau i Kūkaniloko,
ʻO Wahiawā ke kahua
ʻO Līhuʻe ke ēwe
ʻO Kaʻala ka piko
ʻO Kapukapuākea ka ʻaʻa,
ʻO Kaiaka i Māeaea,
Hāʻule i Nūkea i Wainakia,
I ʻAʻaka i Hāleu,
I ka laʻi malino o Hauola,
Ke aliʻi ʻo Kapawa, hoʻi nō,
Hoʻi nō i uka ka waihona,
Hoʻi nō i ka pali kapu o nā aliʻi,
He kiaʻi Kalakahi no Kakaʻe,
ʻO Heleipawa ke keiki a Kapawa,
He keiki aliʻi no Waialua i Oʻahu.
[Kamakau 1869]

This mele for Kapawa is important because, as Hawaiian Studies and Law Professor Malia Akutagawa and Natasha Baldauf, the authors of the 2013 *Hoʻi Hou i Ka Iwikuamoʻo: A Legal Primer for the Protection of Iwi Kūpuna in Hawaiʻi Nei* assert: "The burial of iwi impart the mana of the deceased to that particular ground, to that specific ahupuaʻa (land division), and to the island itself" (Baldauf and Akutagawa 2013:6). The connectivity of wahi kūpuna are further reflected in W. D. Alexander's description of the unique relationship the moku of Wailuku to the history of land tenure in Hawaiʻi:

> On Maui ·the lands of Waikapu and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two ahupuaas, together with Waiehu and Waihee, which were independent, belonging to no Moku, were called Na Poko, and have been formed into a district in modern times. [Alexander 1891 in Thrum 1891:106]

The arrangement of each historical layer is the key towards understanding the project area's relationship to the holistic history of this heavily urbanized region. The accounts of intensively cultivated inland regions with highly complex agriculture and noted aquaculture systems, shoreline resource cultivation, and numerous religious sites outlined here provide more points of reference across the landscape to further reinforce the cultural themes and interconnectivity of the project area to its surrounding landscape.

Place names of Wailuku Ahupuaʻa relay cultural knowledge and relationship to place. Table 2, below, features a selection of wahi kūpuna of Wailuku Ahupuaʻa, Wailuku Moku, Maui. Wailuku Ahupuaʻa includes the valley of ʻĪao, which drains the waters from the west-side mountain of the same name into Wailuku River, which meets the ocean near Nehe Point just north of Kahului Harbor. Pukui, Elbert, and Mookini (1974:225) translate Wailuku as "waters of destruction," with the word 'luku' meaning "massacre, slaughter, destruction; to massacre, destroy, slaughter, lay waste, devastate, exterminate, ravage. Mea luku wale, vandal, one who destroys needlessly. Hele luku, go on a raid…" (Ulukau 2023). A possible interpretation is that "luku" refers to the violence

and intensity of the Wailuku River during heavy rain events. The name is also appropriate as significant battles took place within Wailuku Ahupuaʻa.

Ke Kula o Kamaʻomaʻo is a name for the central plains of the isthmus region of Maui. These dune systems are famed sites in the historical accounts of the battles that took place on the plains and in valley interiors of the upland regions. An important cultural function of the dune system is the interment of the remains of the deceased, mainly iwi (bones). Kamakau offers valuable firsthand knowledge of Hawaiian society, values, and cultural practices applicable to the project area and vicinity whose natural sand dunes are known to contain burials. Kamakau writes:"ʻO ia he wa kuapapa nui a maluhia ke aupuni, ʻo ia ka wā i kanu pono ʻia nā kupapaʻu, (It was a time of tranquility and security of the nation, a time when the deceased were properly buried)" (Kamakau 1870; translated by Kalamaʻehu Takahashi). The particular reverence held for the final resting places in the same regard for those interred is an important aspect of culture that should be respected, adopted, and applied to areas where reconciliation and respectful avoidance of burials are possible. Writing in the mid-nineteenth century, minister George Washington Bates describes the characteristics of Maui's Central Plains:

> It is a sandy alluvial, constantly changing the configuration of its surface beneath the action of heavy winds. This neck of land has a gradual elevation from the sea-shore on the southwest, to nearly two hundred feet on the northeast, in the region of Wai-lu-ku. In extent it is seven miles by twelve... distinctly marked by moving sand-hills, which owe their formation to the action of the northeast trades. Here these winds blow almost with the violence of a sirocco, and clouds of sand are carried across the northern side of the isthmus to a height of several hundred feet. These sand-hills constitute a huge "Golgotha" for thousands of warriors who fell in ancient battles. In places laid bare by the action of the winds, there were human skeletons projecting, as if in the act of struggling for a resurrection from their lurid sepulchres. In many portions of the plain whole cart-loads were exposed in this way. Judging of the numbers of the dead, the contests of the old Hawaiians must have been exceedingly bloody .... [Bates 1854 in Sterling 1998:92]

Table 2.Wahi Kūpuna of Wailuku Ahupuaʻa, Wailuku Moku, Maui

Inoa (name)	Possible Translation	Description and Location
ʻĀalalōloa	Translated in Clark (1989:52) as "long path of rough lava."	According to Clark (1989:52), the name for "an extensive range of hills and rocky sea cliffs between Māʻalaea and Pāpalaua."
Hekuawa	--	"Tomorrow we will drink the waters of Wailuku and rest in the shade of Hekuawa," (Kamakau 1992:87).
ʻIao	--	Valley and Peak, West Maui (Pukui, Elbert, and Mookini 1976:55)
Kaihuwaʻa	"The bow of a canoe, bowsprit," Pukuʻi and Elbert	ʻIli ʻĀina, Kahului
Māʻalaea (Kamaalaea)	Described by Pukui, Elbert, and Mookini (1974:137) as a possible a contraction of "Makaʻalaea," meaning "ocherous earth beginnings." Kamakau	Described by Pukui, Elbert, and Mookini (1974:137) as a "bay, village, and boat harbor, Maui isthmus."
Nā Poko	--	"..the lands of Waikapu and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two ahupuaa, together with Waiehu and Waihee, which were independent, belonging to no Moku, were called. Na Poko, and have been formed into a district in modern times." (Alexander 1891 in Thrum 1891:106)
Paʻuniu	--	Secret hidden burial area of Lonoapiʻilani (Kamakau 1870)
Palalau	Literally translated as "yellow leaf," (Pukui, Elbert, and Mookini 1974:76).	Described as the Māʻalaea coastal area in Pukui, Elbert, Mookini (1974:176). Another name for the shoreline at Māʻalaea per Clark (1989:50).
Papalekailiu	--	Uaua (1871) "When Ka-nene-nui-a-ka-wai-kalu was chief of Maui, there lived a certain noted man, Kapoi and wife in Wailuku. Wife goes to plain of Papalekailiu to catch uhini (locusts).
Pihana	--	(Thrum 1909:45)
Kahaluʻu	--	Sandhills of region described where the Poʻouahi and Niuʻula divisions of Kahekiliʻs forces ambushed the Alapa forces of Kalaniʻopuʻu (Kamakau 1992:85).

Inoa (name)	Possible Translation	Description and Location
Kahului	--	Town, elementary school, port, bay, railroad, and surfing area known as Kahului breakwater (Finney 1959:108)
Kalua	--	Sandhill region where the Poʻouahi and Niuʻula divisions of Kahekiliʻs forces slew the Alapa forces of Kalaniʻopuʻu (Kamakau 1992:85) . Ahulau ka Piʻipiʻi i Kakanilua, the slaugther at the battle of Kakanilua. (Kamakau 1992:86).
Kamaʻomaʻo	--	(Kamakau 1992: 85) Plain marched by Alapa warriors of Kalaniʻōpuʻu Ahulau ka Piʻipiʻi i Kakanilua, the slaugther at the battle of Kakanilua, (Kamakau 1992: 86).
Puʻuʻainako (Puʻuʻāinakō/ Puʻuʻainakō)	Cane trash hill (Kamakau 1992:85)	Kamakau (1992:85) lists Puʻuʻainako along the march of the Alapa warriors.
Wailuku	Pukui, Elbert, and Mookini (1974:225) translate Wailuku as “water of destruction.”	Moku, ahupuaʻ a, location of an eighteenth century battle (Pukui, Elbert, and Mookini 1974:225).

The major battle events connect larger land divisions, multiple ahupuaʻa and moku, but Ke Kula o Kamaʻomaʻo is a focal point because of the location of the project area specifically within the broader region of the coastal sand dunes system. Pukui (1983: 189, #1761) wrote that "[t]he plain of Kamaʻomaʻo, Maui, was said to be the haunt of ghosts whose activities were often terrifying." Ke Kula o Kamaʻomaʻo is also significant because of its central cultural historical relevance to other localities within the ahupuaʻa of Wailuku, the greater moku of Wailuku, and the island of Maui.

The valley of ʻIao and the ahupuaʻa and moku of Wailuku were heavily cultivated and settled in the pre-contact era: "the whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty," (Cheever 1851:124). On the basis of archaeological, ecological, and ethnographic evidence, Bishop Museum research affiliate E.S. Craighill Handy wrote of Wailuku:

> This is the third of 'The Four Streams," the great torrent that drains the highest cloud-capped uplands of western Maui through deep Iao Valley. Much of the upper section of what is now the city of Wailuku is built on old terrace sites. Along the broad stream bed of Iao Valley, extending several miles up and inland, the carefully leveled and stone-encased terraces may be seen. In the lower section of the valley these broad terraces now serve as sites for camps 10 and 6 of Wailuku Sugar Plantation... A little farther up, neat private homes and vegetable and flower gardens cover these old taro terraces; while at their upper limit the terraces are submerged in guava thickets. [Handy 1940:108]

The valley interiors of Nā Wai ʻEhā were not the only areas of cultivation within Wailuku Moku. The main aquaculture feature of the Kahului region werere the fishponds Kanahā and Mauʻoni. Kamakau (1992:42) credits Maui's ruling chief Kihapiʻilani with its construction and notes he was living in Kahului during the construction of the ponds. Kamakau recorded a visit of Keawenuiaʻumi to Maui to meet with Kihapiʻilani:

> Keawe-nui-a-'Umi sailed from Hilo to Kapuʻekahi [Kapueokahi] in Hana and from Hana to Kahului of Wailuku. There the chief of Hawaii met Kiha-a-Pi'ilani, ruler of Maui. Kiha-aPi'ilani was building the walls of the pond of Mau'oni. A wide expanse of water lay between Kaipu'ula and Kanaha, and the sea swept into Mau'oni. The two ruling chiefs met and greeted each other with affection. [Kamakau 1992:42]

These abundant food systems sustained large populations and required meticulous planning and an immense amount of collective labor. An account of a wahine named Puea-a-Makakaualii identified Kapiʻiohookalani, a chief of Oʻahu and a portion of Molokaʻi as the chief that commissioned its construction and details of the large workforce.

> Tradition relates that the laborers stood so closely together that they passed the stones from hand to hand. The line extended from Makawela (the sea fishery at the sea base of the Wailuku road, as you turn in to Kahului) to Kanaha. ...with such a multitude to feed, the nehu and opae were most suitable as being obtainable in quantity. At times the men had only one nehu each for a meal and had to fill up with sea-weed and salt, hence the saying "Kakahi ka nehu a Kapiioho (Blaisdell 1923 in Sterling 1998: 87).

Hawaiian oral Traditions

Hawaiian oral traditions are streams of information that have been passed down by word of mouth from one generation to the next and recorded in more contemporary times. Hawaiian oral traditions provide a general sense of Native Hawaiian history, their connection to land, how they lived, and their traditional land tenure. These Hawaiian oral traditions come in the forms of oli (chants), mele (songs), ʻōlelo noʻeau (proverbs and poetical sayings), moʻolelo (stories), moʻokūauhau (genealogies), and nūpepa (Hawaiian language newspapers). These forms of oral traditions can be woven into each other. For instance, a moʻolelo may present a mele or oli about a moʻokūʻauhau. Essentially, these oral traditions are vehicles for intergenerational transmission of knowledge that ensures the survival of cultural beliefs, practices, and traditions. They are a direct link to experience Hawaiʻi through a timeless bridge of cultural insights that have guided Hawaiians for generations. The Hawaiian oral traditions gathered below relay information regarding resources of the land, akua (gods), kupua (shapeshifting demigods), ʻaumākua (familial guardians), aliʻi (chiefs), and ka poʻe kānaka (the Hawaiian people) whose stories weave a unique and treasured history of this ʻāina (cultural landscape).

Moʻolelo and Kaʻao

Moʻolelo (narratives) and kaʻao (histories), which are more flexible in structure, version, and meaning, are the second type of Hawaiian oral traditions – verbal testimonies or reported statements concerning the past," and ʻike kūpuna (Kikiloi 2010:78).

Amongst all of the vivid detail of the battles that ensued on the Central Maui Plains which claimed many warriors and chiefs then laid to rest at Kamaʻomaʻo, the procession of aliʻi after their passing on the way to sacred inland burial sites offers insight into other wahi kūpuna within the moku along the procession. The following is an account of the death and procession of the great Maui chief Kekaulike recorded by Kamakau:

> "The chiefs then prepared a manele or palanquin to carry the sick King overland and at a place called Halekii the King expired. This happened in 1736. The High Chiefs being in fear of Alapainui coming to do battle with them, they immediately performed the sacred ceremonies… and decided to take the royal remains to Iao. They again embarked landing at Kapoli in Maalaea, thence to Puuhele,Kaluamanu, Waikapu, Wahanemaili, Kaumuilio, Aoakamanu, Puuelinapao, Kaumulanahu, Kapohakai, Kalua, Kekio, Kamaauwai, Kahua at Kailipoe, Kalihi at Kaluaoiki. Along the route relays of high chiefs bore the remains of their beloved sovereign to Kihahale, at Ahuwahine they rested, thence to Loiloa where the royal remains were placed in Kapela Kapu o Kakae, the sacred sepuluture of the sovereigns and the blue blood of Mauiʻs nobility." [Henriques 1916 in Sterling 1998:80]

From 1775–1779, conflict between ruling chiefs occurred on the Central Maui Plains as well as other locations between Kalaniʻopuʻu and Kahekili (Kamakau 1992:85). Kalaniʻōpuʻu and his forces, the ʻĀlapa and Pipiʻi landed in the moku of Honuaʻula at Keoneʻōʻio in and extended to Mākena. All were eager, thirsting for battle with the collective desire to "drink the waters of Wailuku,"[victory] (Kamakau 1992:85). After ravaging the population there, Kahekili prepared his forces the Niuʻula and Poʻouahi. Occupying the area of Kīheipūkoʻa, to the south east of Waikapū, the forces of Kalaniʻoʻpuʻu marched northwest towards Wailuku crossing the plains of Puʻuʻainako and Kamaʻomaʻo. They met their demise at the hands of the Poʻouahi and Niuʻula divisions of Kahekiliʻs army at the sandhills of Kahaluʻu and Kalua. There were two survivors that

reported back to a prematurely celebrating Kalaniʻopuʻu who immediately broke out into hysterical wailing, mourning the loss of his most coveted forces. This was a particularly disheartening defeat as he and his entire alo aliʻi had full confidence in their victory (Kamakau 1992:85–87).

Oli, Mele, and ʻŌlelo Noʻeau

Kikiloi (2010:78) defines Hawaiian oral traditions as "verbal testimonies or reported statements concerning the past," and ʻike kūpuna and divides them into two types. One group of Hawaiian oral traditions identified by Kikiloi (2010:79) include oli (*chants*), mele (*songs*), and ʻōlelo noʻeau (*proverbs*) which are short, reproduced through strict protocol, and often "part of sacred learning or tradition," Kikiloi (2010:78).

Nogelmeier (2001:vii, 1) defines mele as "Hawaiian poetic compositions to be performed as chants or dances," and "both an art and an ancient tradition…". The ancient, pan-Pacific roots, developmental trajectory, and depth and breadth of the Hawaiian oral tradition is synthesized by Nogelmeier:

> Before Europeans arrived in the Islands, poetry was part of the vast collective repository of oral tradition necessary for social continuity in such a complex oral culture. Poetic form was useful for remembering genealogies and for documenting historical events; combined into histories and legends, this kind of poetry has been recorded throughout the many Pacific cultures. Eventual interior changes in Hawaiian society certainly affected the uses of poetry, fostering its status in the protocols of royal court and religious ceremony and at the same time expanding the practice and appreciation of the art throughout the general population. Whether recited as prayer or invocation, intoned in chant without accompaniment, or presented through dancers as a hula, poetic compositions were called *mele*. Expressing the skills of the poet and the reciter, the art came to be widely embraced; poetic presentation, as pleasant pastime and formal purpose, became a social norm. [Nogelmeier: 2001:1]

ʻŌlelo noʻeau, or Hawaiian proverbs and poetical sayings, are valuable in perpetuating Hawaiian cultural knowledge, presenting layers of kaona (*meaning*), and illustrating creative expressions that incorporate observational knowledge with cultural values, history, knowledge, and humor. Today, they serve as a traditional source to learn about the communities, people, places, histories, and environments of Hawaiʻi.

Notably, Ka pela kapu o Kakaʻe at ʻĪao Valley, in Wailuku Moku,is identified in the ʻōlelo noʻeau below as a sacred burial place of the chiefs of old:

Papani ka uka o Kapela; puaʻi hānono wai ʻole Kukaniloko; pakī hunahuna ʻole o Holoholokū; ʻaʻohe mea nana e ʻaʻeʻ paepae kapu o Līloa.
Close the upland of Kapela; no red water gushes from Kukaniloko; not a particle issues from Holoholokū; there is none to step over the sacred platform of Līloa.
…the descendants are no longer laid to rest at Ka-pela-kapu-o-Kakaʻe at ʻĪao, the descendants no longer point to Kukaniloko on Oʻahu and Holoholokū on Kauaʻi as the sacred birthplaces; there is no one to tread on the sacred places in Waipiʻo, Hawaiʻi, where Līloa dwelt.
[Pukui 1983: 286, #2602]

Although the ʻōlelo noʻeau relays a degree of loss, the descendants prevail. Preservation of these wahi kūpuna, their histories, in all themes and tones, is what further ingrain the intimate details of our relationship with these spaces.

Another ʻōlelo noʻeau mentions the sacred nature of ʻĪao Valley are gathered below:

Ka Malu ao o na pali kapu o Kakaʻe.
The Cloud Shelter of the sacred cliffs of Kakaʻe.
Kakaʻe, an ancient ruler of Maui, was buried in ʻĪao Valley, and the place was given his name. It was known as Na-pali-Kapu-o-Kakaʻe (Kakaʻe's Sacred Precipice) or Na-pela-kapu-o-Kakaʻe. Since that time, many high chiefs have shared his burial place.
[Pukui 1983: 159, #1473]

Battles are another prevalent theme in ʻōlelo noʻeau for Wailuku Moku:

Ahulau ka Piʻipiʻi i Kakanilua,
A slaughter of the Piʻipiʻi at Kakanilua.
In the battle between Kahekili of Maui and Kalaniʻōpuʻu of Hawaiʻi, on the sand dunes of Wailuku, Maui there was a great slaughter of Hawaiʻi warriors who were called the Piʻipiʻi. Any great slaughter might be compared to the slaugther of the Piʻipiʻi.
[Pukui 1983:5, #19]

Ke inu aku la paha aʻu ʻĀlapa i ka wai o Wailuku.
My ʻĀlapa warriors must now be drinking the water of Wailuku. Said when an unexpected success has turned into failure.
This was a remark made by Kalaniōpuʻu to his wife Kalola and son Kiwalaʻō, in the belief that his selected warriors, the ʻĀlapa, were winning in their battle against Kahekili. Instead they were utterly destroyed.
[Pukui 1983: 184, #1711]

Wehe i ka mākāhā i komo ka iʻa.
Open the sluice gate that the fish may enter.
This was uttered by Kaleopuʻupuʻu, priest of Kahekili, after the dedication of the heiau of Kaluli, at Puʻuʻohala on the north side of Wailuku, Maui. A second invasion from Kalaniōpuʻu of Hawaiʻi was expected, and the priest declared that they were now ready to trap the invaders, like fish inside the pond. The saying refers to the application of strategy to trap the enemy.
[Pukui 1983:320, #2923]

Select additional ʻōlelo noʻeau commemorate resources and features of Wailuku Moku:

Na wai ʻehā.
The four wai.
A poetic term for these places on Maui: Wailuku, Waiehu, Waiheʻe, Waikapū, each of which has a flowing water (wai).
[Pukui 1983:251, #2300]

Ke alanui pali o ʻAʻalaloa.
The cliff trail of ʻAʻalaloa.
A well-known trail from Wailuku to Lahaina.
[Pukui, 1983:181, #1675]

Pili ka hanu o Wailuku. Wailuku holds its breath. Said of one who is speechless or petrified with either fear or extreme cold. There is a play on luku (destruction). Refers to Wailuku, Maui. (Pukui 1983, 290, 2647)

Ke kula o Kamaʻomaʻo ka ʻāina huli hana.
The plain of Kamaʻomaʻo —that is the place where plenty of work is to be found.
A taunt of one who talks of looking for work but does not do it. The plain of Kamaʻomaʻo, Maui, was said to be the haunt of ghosts whose activities were often terrifying.
[Pukui 1983: 189, #1761).

Kaʻōlohe puka awakea o Kamaʻomaʻo.
The bare one of Kamaʻomaʻo that appears at noonday.
The plain of Kamaʻomaʻo, Muia, is said to be the haunt of ghosts (ʻōlohe) who appear at night or at noon. Also a play on ʻōlohe (nude), applied to one who appears unclothed.
[Pukui 1983: 164,#1514)

HISTORICAL LANDSCAPE

Early Historical Period

During the 18th century, Wailuku was a known location of Hawaiian settlements. Writes Kamakau:

> In the year 1765 a quarrel arose among the descendants of the chief Ke-kau-like Ka-lani-kuʻi-hono-i-ka-moku. Ka-hekili was living at Pihana, at Pukukalo, and at Wailuku with the chiefs, his companions and favorites, and his warriors, Ka-niu-ʻula and Ke-poʻo-uahi. The chiefs of Wailuku passed their time in the surf of Kehu and Kaʻakau… [Kamakau 1961:83]

Hawaiian ethnographer Mary Kawena Pukui collaborated with E.S. Craighill Handy and Elizabeth Green Handy on the 1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. They identify Kahului as a possible location for early Hawaiian settlement with its "protected bay and beach areas where fresh water was available and where there was good inshore and offshore fishing," (Handy, Handy, and Pukui 1972:268). They note the taro cultivation system in Waiheʻe, Waiehu, Wailuku, and Waikapū was contiguous and "the largest continuous area of we-taro cultivation in the islands (Handy, Handy, and Pukui 1972:488, 496). Breadfruit was cultivated in the Wailuku lowlands and plains and dried loʻi may also have been planted with bananas (Handy, Handy, and Pukui 1972:153, 162). Their work also discusses the shift in land use that occurred in Wailuku during the early historical era:

> On Maui there were five centers of population. Kahakuloa was an isolated area on the northwest coast of West Maui, a valley intensively cultivated in wet taro. The second was the southeast and east part of West Maui where four deep valley streams watered four areas of taro land spreading fanwise to seaward: The Four Waters (Na-wai-ʻeha) famed in song and story - Waiheʻe, Waiehu, Wailuku, and Waikapu. Here sugar cane has taken over former taro lands. [Handy, Handy, and Pukui 1972:272]

Wailuku appears on the earliest Hawaiian cartographic representations of land divisions including moku and ahupuaʻa. "Wailuku" is a land division label on an 1837 map of the archipelago engraved by Simon Peter Kalama, a talented engraver and mapmaker at Lahainaluna Seminary, Maui (Kalama 1837; Forbes 2012:150; Figure 7 and Figure 8). Kalama's 1838 map engraving of the archipelago depicts the location and bounds of Wailuku Ahupuaʻa (Kalama 1838; Forbes 2012:150; Figure 9).

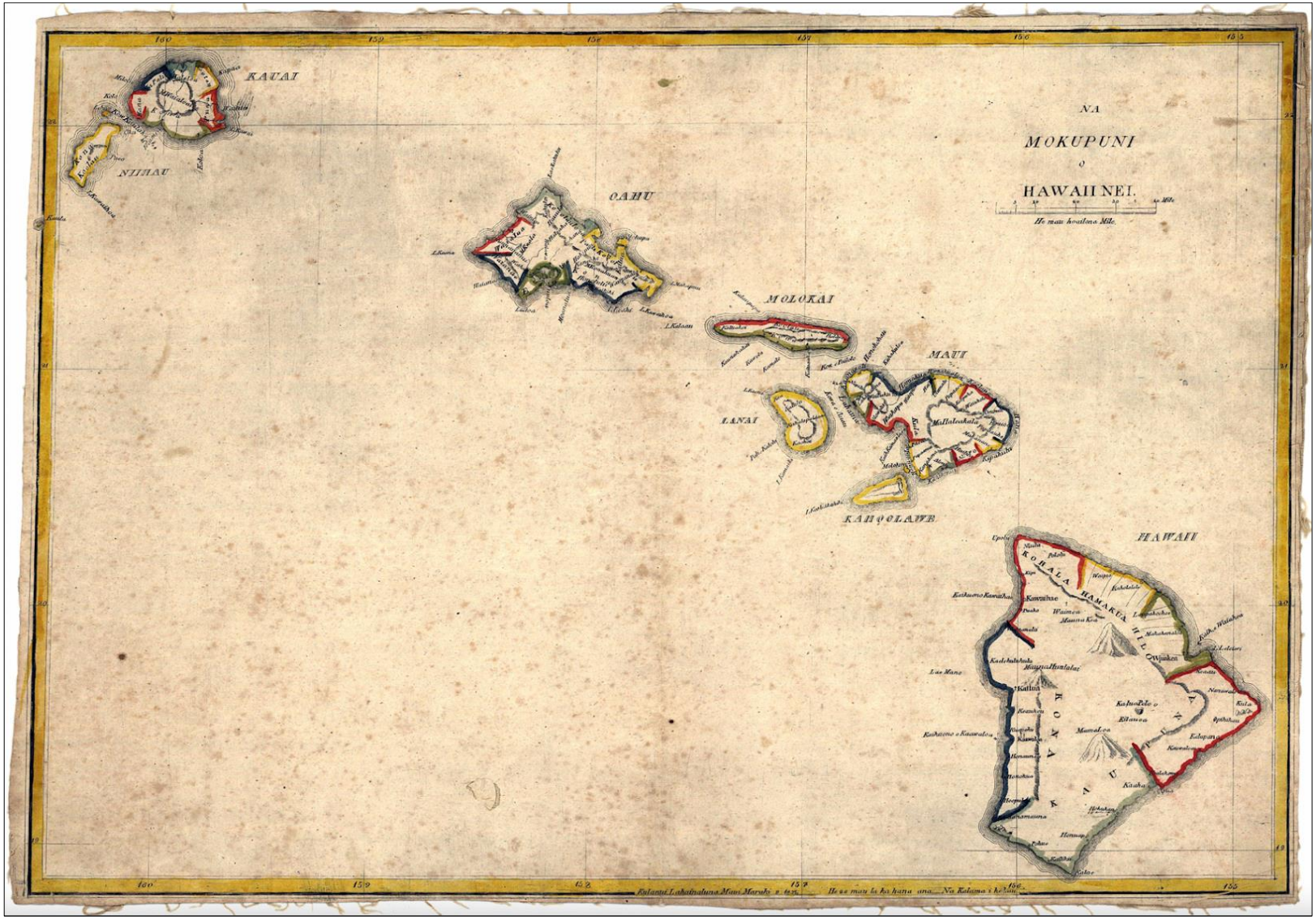


Figure 7. Kalama's 1837 map engraving of the archipelago entitled "Ka Mokupuni o Hawaii Nei" (*The Islands of Hawai'i*) depicting Wailuku, Maui (Kalama 1837; Forbes 2012:150)

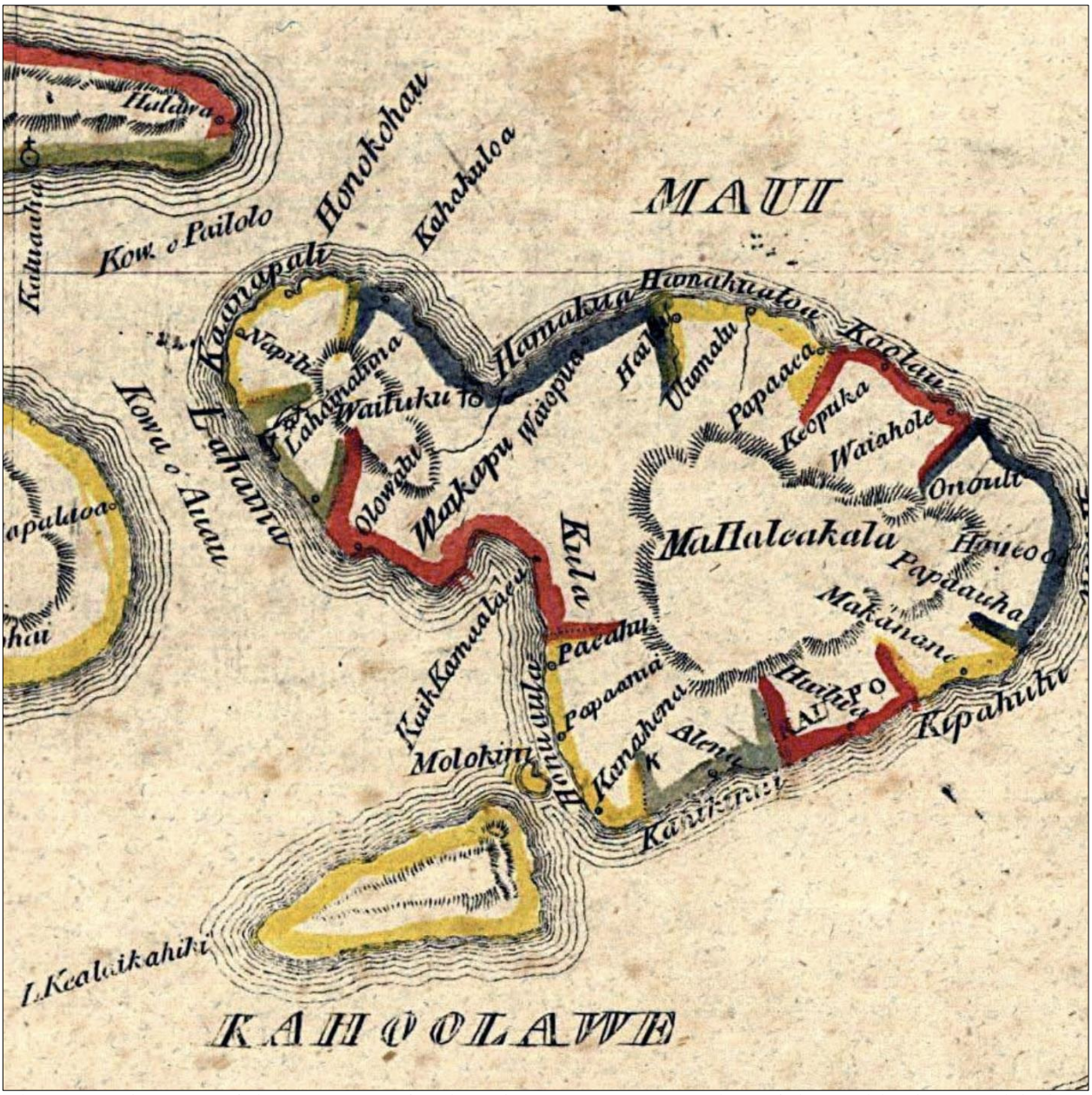


Figure 8. Close-up of the segment of Kalama's 1837 map engraving of the archipelago entitled "Ka Mokupuni o Hawaii Nei" depicting Wailuku, Maui (Kalama 1837; Forbes 2012:150)

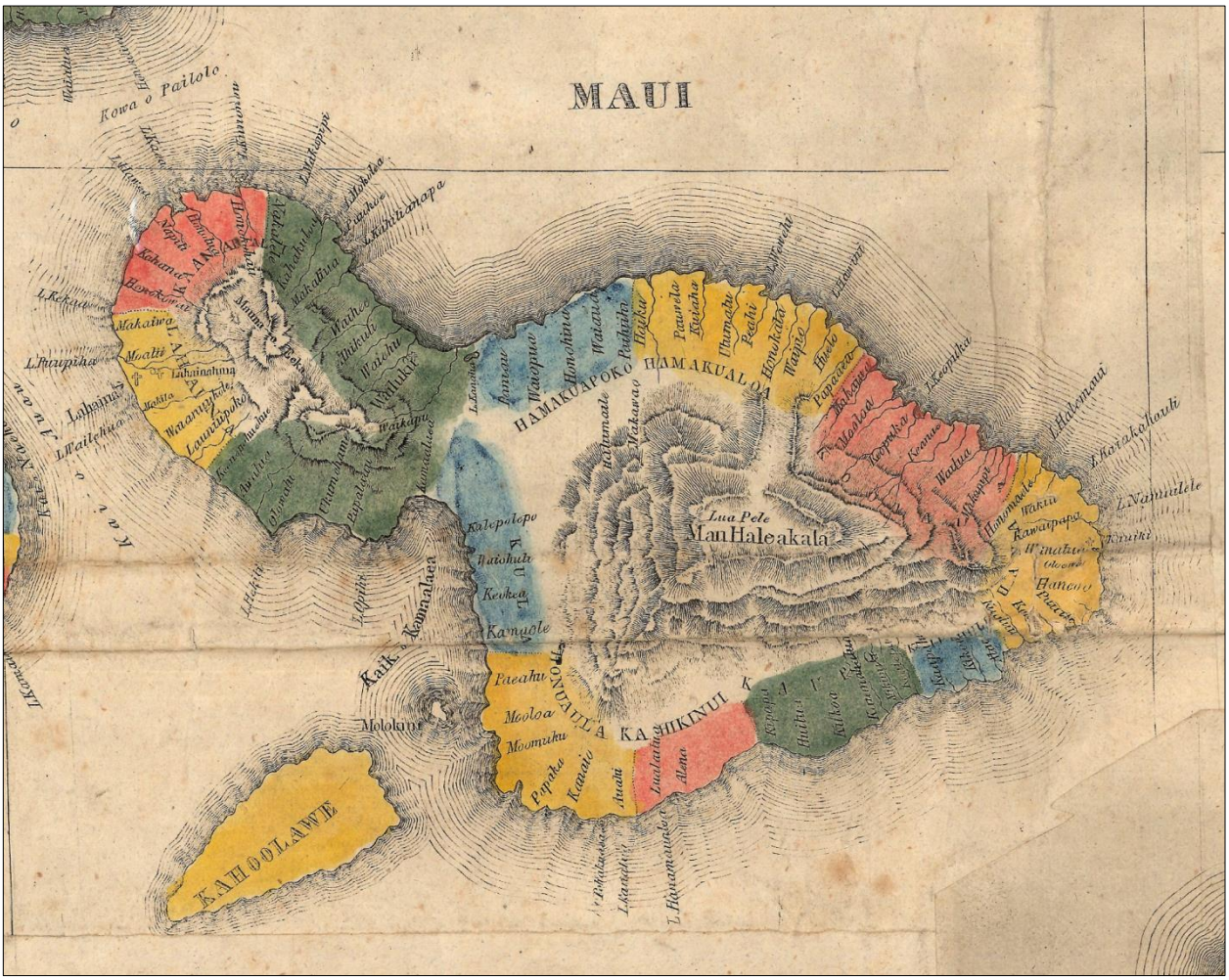


Figure 9. Close-up of a segment of Kalama's 1838 map engraving of the archipelago depicting the location and bounds of Wailuku Ahupua'a (Kalama 1838; Forbes 2012:150)

Mid to Late-1800s

The local manifestation of global, extractive sugar industries and economies began in Central Maui and on the lands west, south, and east of the project area beginning in the 1820s. The industry began a long term boom in the 1860s, enhanced by the ratification of the Reciprocity Treaty of 1875 that allowed free trade between the sovereign Hawaiian Kingdom and the United States (Dorrance and Morgan 2000:68; Maclennan 2014:23). Maclennan summarizes the evolution and economic as well as social impacts of the sugar industry in Hawai‘i:

> The corporate form of organizing sugar production in Hawai‘i grew out of the early experimentation with sugar cultivation promoted by the Hawaiian king and foreign planters. Corporations are a form of property organization that emerged throughout the world as a regular tool for organizing production in the late nineteenth century – but especially in North America and Europe. Hawai‘i’s sugar corporations – later known as the “Big Five” – followed a somewhat unique path, beginning with missionary settlers who pooled their money, property, and influence into vertically organized institutions that eventually controlled vast resources. Hawai‘i’s brand of capitalism was organic to the social and political arrangements of nineteenth-century life based on a native constitutional monarchy that operated in a global world of trade. The first missionary-created corporations emerged in the 1860s during the first sugar boom and within a quarter-century had brought enough wealth and power to their owners to enable them to challenge the political authority of the Hawaiian monarchy. Corporate property then propelled the missionary-descendants-turned-capitalists into positions of political power, serving the industrial drive toward sugar production for a global market. [Maclennan 2014:33]

Sugar plantations active in the project area vicinity included the Hawaiian Commercial Company which merged with the Maui Agricultural Company to become the Hawaiian Commercial and Sugar Company, managed by Asa Baldwin (Dorrance and Morgan 2000: 59-61). Bal and Adams and the Waikapu Sugar Company were active in the vicinity (Dorrance and Morgan 2000: 60,61). An 1885 Hawai‘i Government Survey map shows the project area in Wailuku Ahupua‘a as part of Grant 3343 in a landscape of sand hills dotted with loko i‘a, and also features the location of the Hawaiian Commercial and Sugar Company landholdings (Figure 10; Dodge and Alexander 1885). An 1893 map of the Sprecklesville sugar plantation, east of the study area, shows the project area in the Central Maui Plains surrounded by roads, railroads, and other plantation infrastructure (Figure 11).

In 1882, the project and study areas were components of an illegal and unauthorized sale of the 24,000 acre Wailuku Ahupua‘a – Crown Lands - to California sugar baron Claus Spreckles by Princess Ruth Ke‘elikolani (Van Dyke 2008:100). The land deal allowed Spreckles to acquire inalienable Crown Lands from an individual who had no authority or right to sell them (Van Dyke 2008:104).

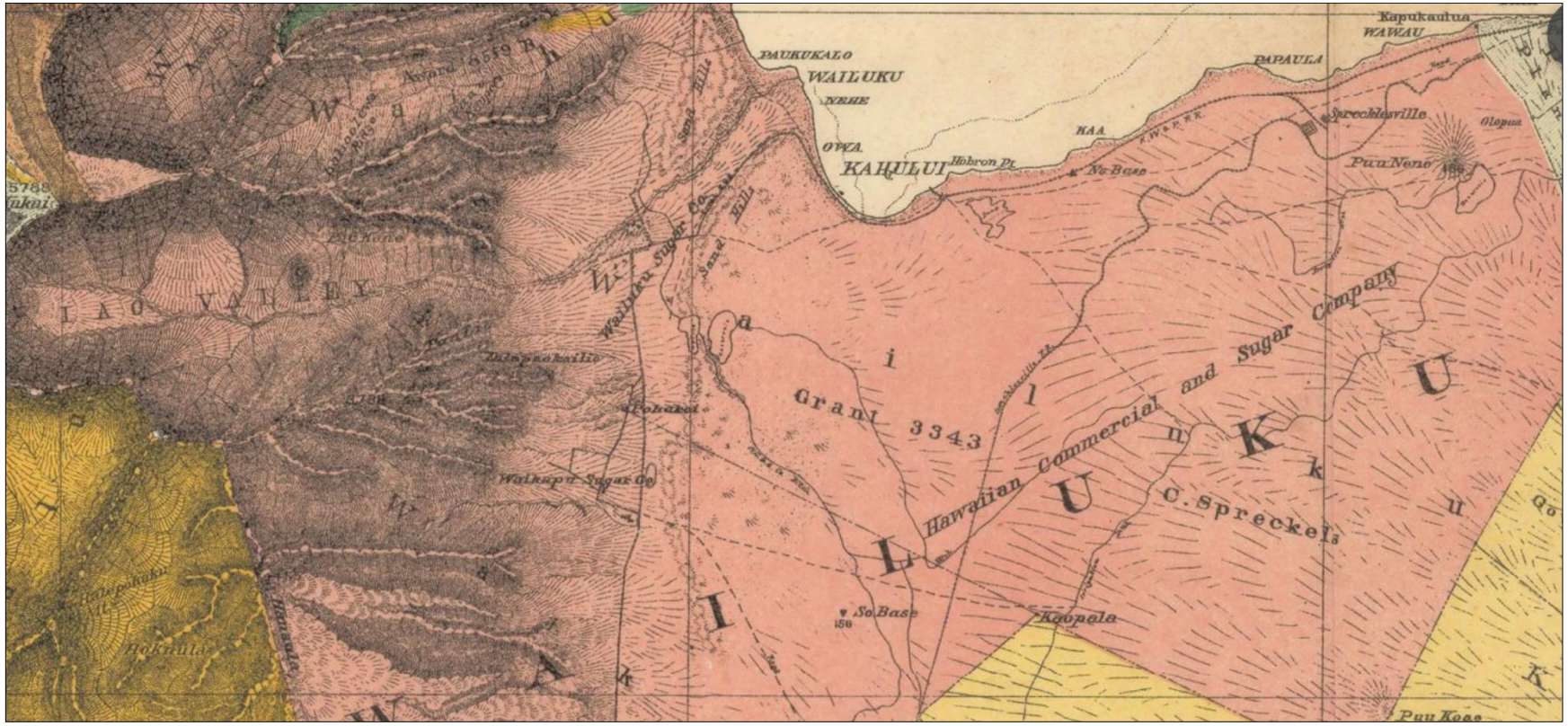


Figure 10. Close-up of an 1885 Hawaii Government Survey map showing the project area in Wailuku as part of Grant 3343 in a landscape of sand hills dotted with fishponds (Dodge and Alexander 1885)

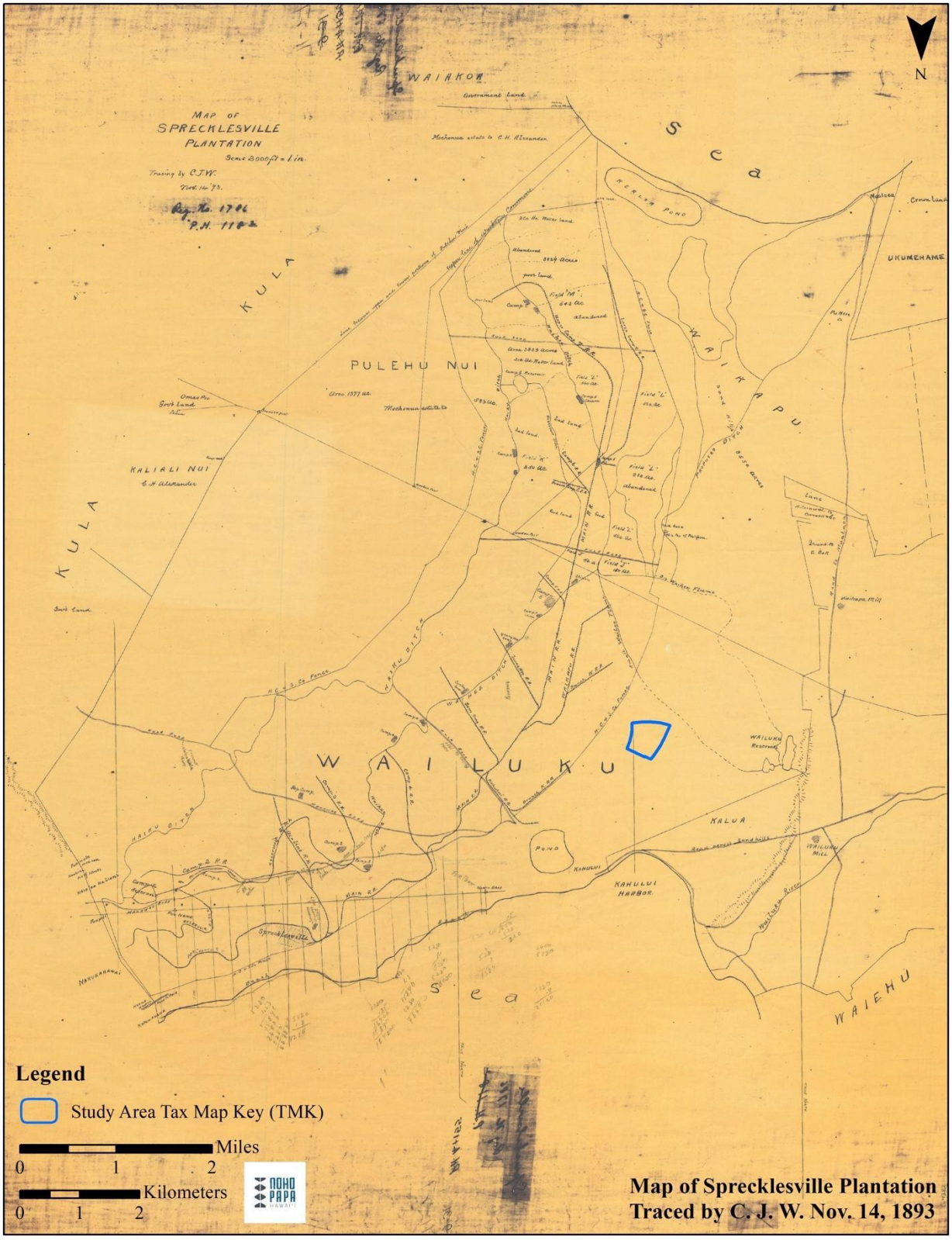


Figure 11.1893 map of the Specklesville Sugar Plantation featuring the study area, outlined in blue, on Maui's Central Plains

1900s to Present Day

Historical and modern accounts, maps, and photographs provide an understanding of the cultural landscape, settlement, and land use of Wailuku Ahupua‘a and the project area during the 20th century through the present. A 1929 map of Maui shows the Central Maui Plains and location of the project area as undeveloped, with natural topography, and bounded by the settlement of Kahului to the north, and infrastructure like roads and railroads to the west, south, and east (Iao and Wall 1929; Figure 12). Previous archaeological studies associated with the project area and vicinity and the MHS website further detail the twentieth century trajectory of land use in the project area and Central Maui Plain. The project area is described as natural sand dune topography and sediment that served as pasture lands until the late 1960s (Neller 1984:2; Miura et al. 1983:1, 2; Rotunno and Cleghorn 1990:7). Extensive ground disturbance and the modification, reduction, and leveling of the natural sand dune associated with the installation of a papaya and lilikoi fruit plantation by Orchards Hawaii occurred in 1968 (Miura et al. 1983:2). Concurrently, intact or partially intact sand dune systems are recorded south and west of the project area through the 1980s (Neller 1984:2; Miura et al. 1983:2).

According to information on the MHS website (Maui High School 2023), the MHS “opened in 1913 in the community of Hamakuapoko, on the north shore. It was the first academic high school on the island and had an initial enrollment of sixteen students. In 1972, the present Maui High School campus opened in the heart of central Maui.” Historical photographs of the project area and vicinity (Figure 13, Figure 14) taken in the 1970s feature the MHS campus on the fringes of encroaching Kahului suburbs. The photographs show the current project area in the southern part of the campus as undeveloped land with forested and vegetated segments that were observed roughly intact during the field inspection for this study, roughly four decades later. The photographs also corroborate previous archaeological studies describing sugar cane fields and continued extensive additional ground disturbance from farming and recreational activities like sand mining, dirt biking, the use of informal roads, installation of a drainage pond, and trash dumping observed in lands to the south and west in the 1980s and 1990s (Neller 1984:2; Miura et al. 1983:1, 2; Rotunno and Cleghorn 1990:7).

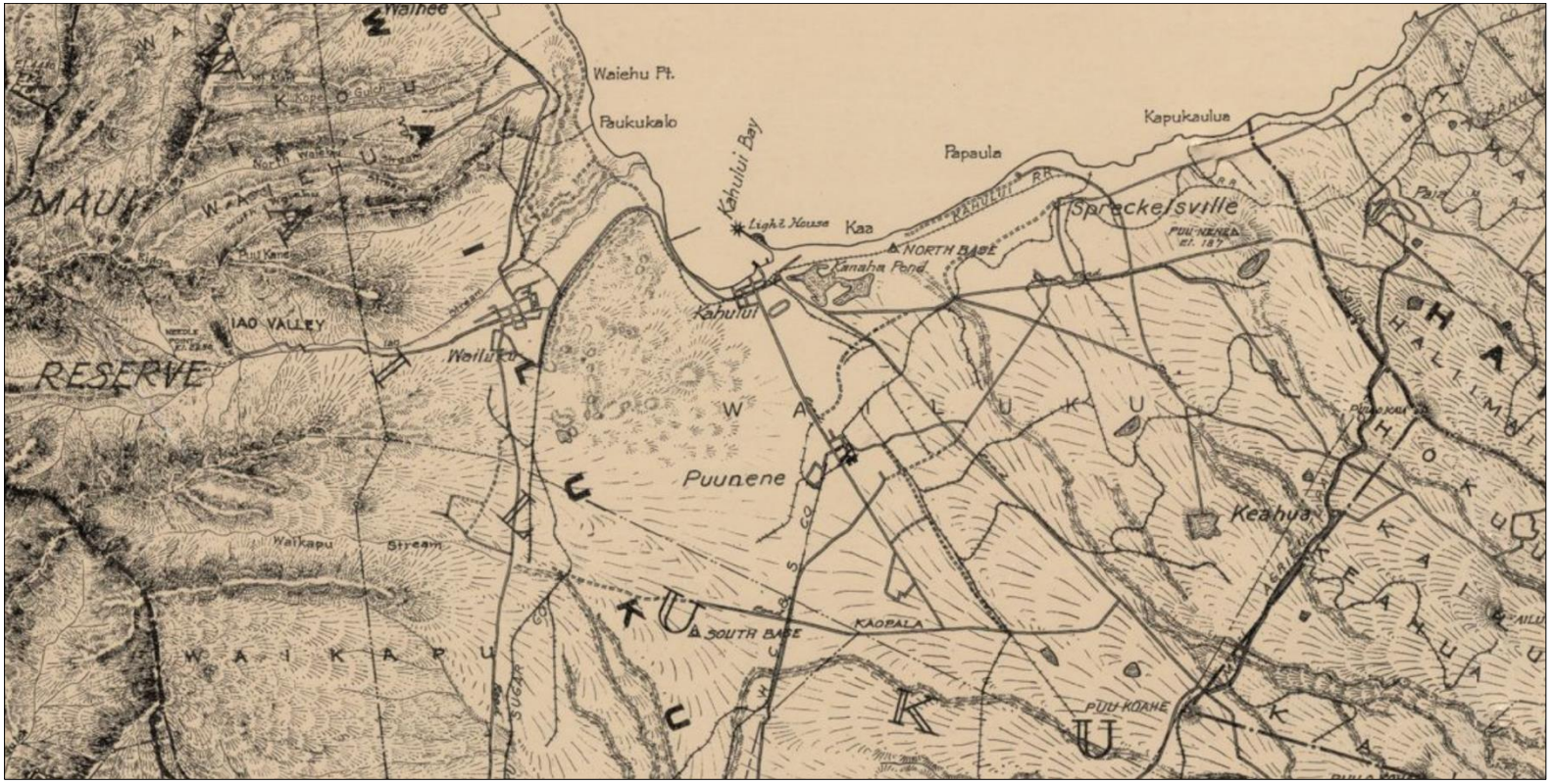


Figure 12. A 1929 map of Maui showing Central Maui Plains and location of the project area as undeveloped, with natural topography, and bounded by the settlement of Kahului to the north, and infrastructure like roads and railroads to the west, south, and east (Iao and Wall 1929).

Figure 13. A photograph of Kahului in Wailuku Ahupua‘a taken in the 1970s after the establishment of the MHS campus in 1972 (yellow arrow), view to the southwest (Bacon 1970s)

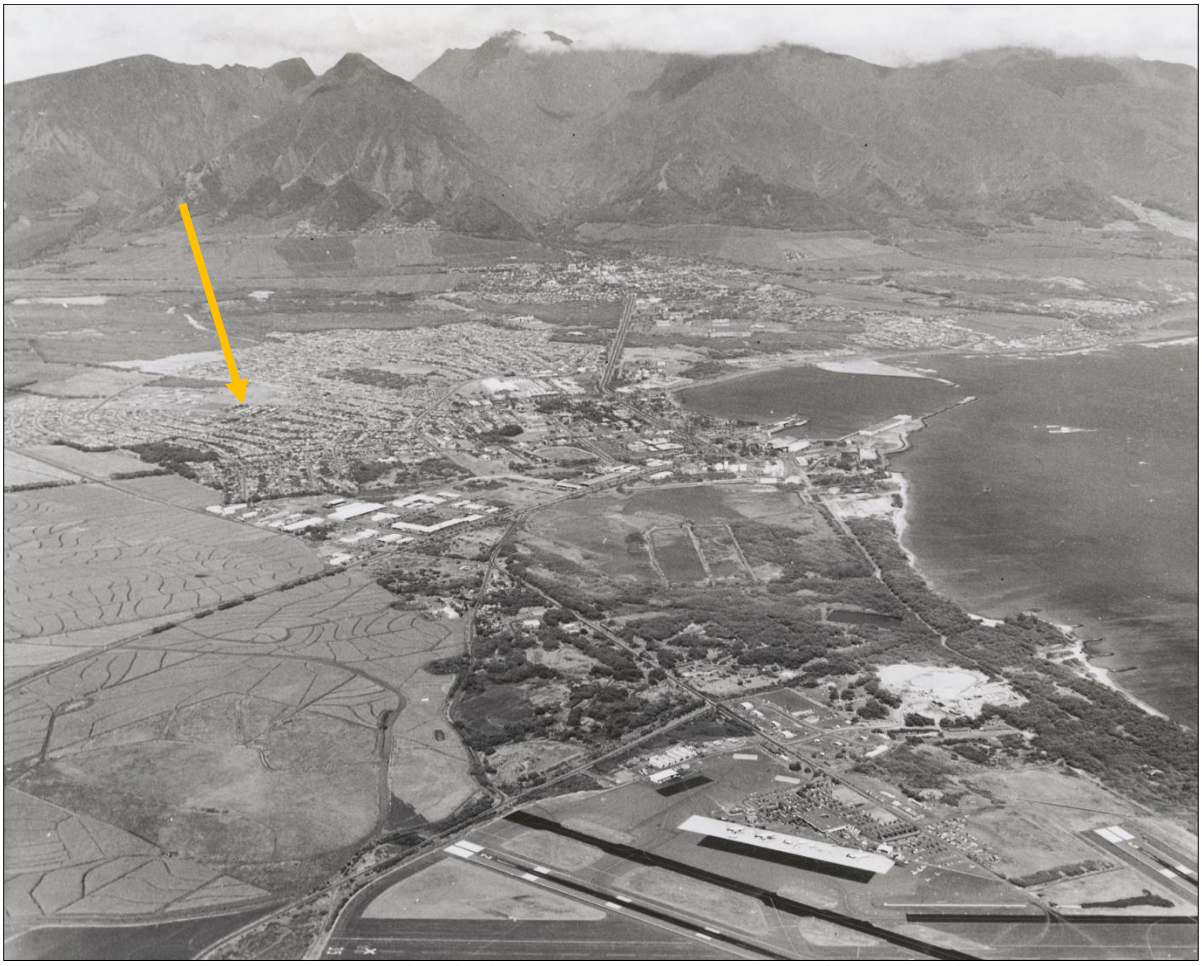


Figure 14. A 1975 photograph of Kahului in Wailuku Ahupua‘a, featuring the MHS campus established in 1972 (yellow arrow), view to the west (Bacon 1975)

PREVIOUS ARCHAEOLOGICAL STUDIES

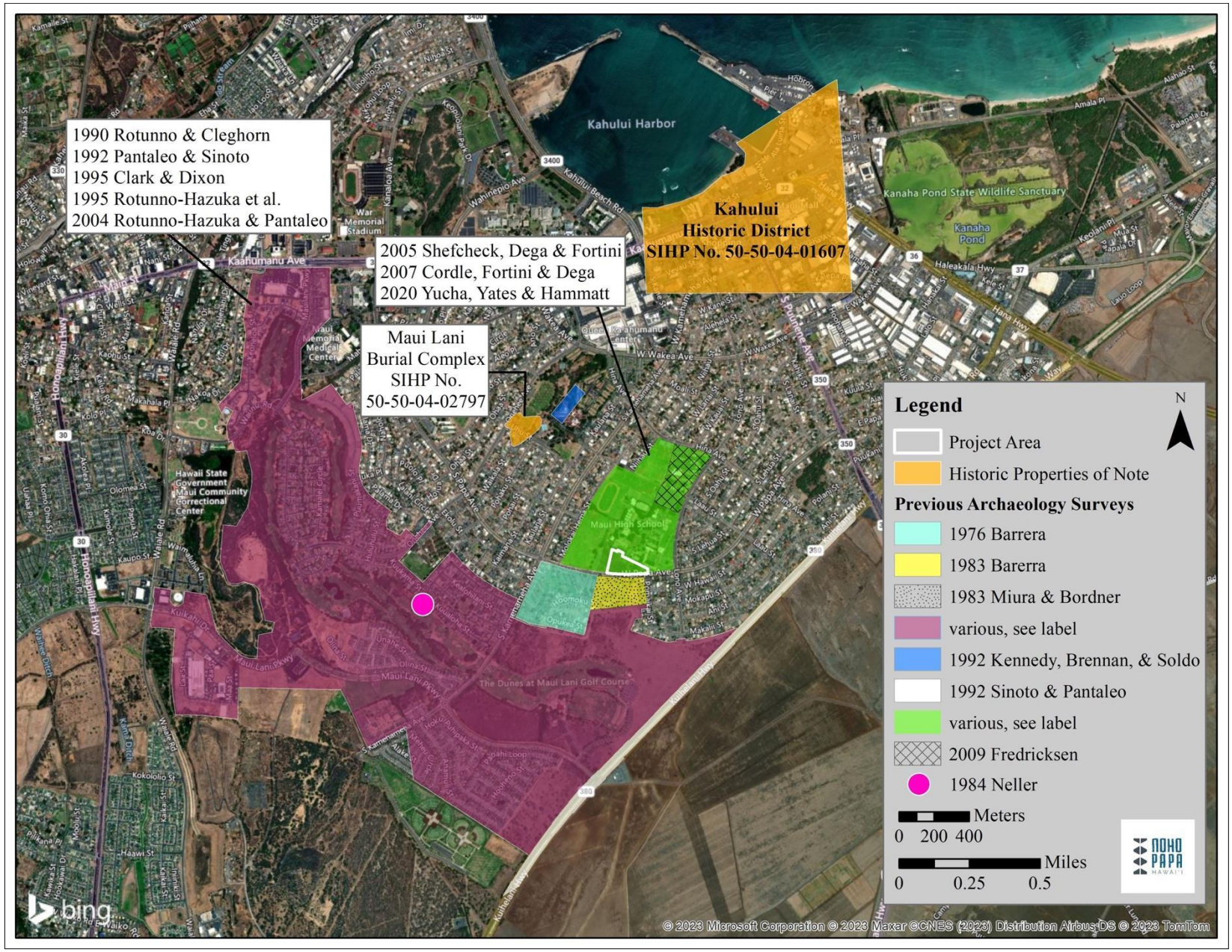
Results of Nohopapa Hawai'i's public records search indicates three compliance archaeological studies have occurred in the 2.2 acre project area and no historic properties are officially recorded as associated with the project area. Figure 15 illustrates the locations pf previous archaeological studies associated with the project area, study area, and vicinity, listed in Table 3. Background research did uncover a previously-issued SHPD determination regarding historic preservation next steps within the project area TMK (SHPD DOC NO: 0903PC83; SHPD 2009; Appendix A). The SHPD determination requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus (north of the current project area); as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities.

Numerous limitations are important to note regarding the resources yielded and available during background research conducted during this study. William Barrera Jr.'s 1976 *Archaeological Survey at Waiale, Maui* by Chiniago, Inc. was not available. Regarding Sinoto and Pantaleo 1992, the version of the report available from the SHPD was incomplete – all odd numbered pages were missing. Referenced in Cordle and Dega (2007:5), Donna Shefcheck, Michael Dega, and William Fortini's 2005 *Archaeological Monitoring Report for the Maui High School Softball Field, Kahului, Wailuku Ahupua'a* for the lands and segment of the MHS campus just north of the project area also was not available.

Previous Archaeological Research Within the Project Area

Background research performed for this study yielded three previous compliance-related archaeological studies completed for the current study area and project area: an archaeological monitoring report, draft archaeological monitoring plan, and literature review and field inspection completed for environmental compliance review only and therefore not on file at the SHPD (Yucha, Yates, and Hammatt 2020). The studies are summarized in catalog form below.

Study Title: *Archaeological Monitoring Report for Maui High School, Kahului, Wailuku Ahupua'a. Wailuku District, Island of Maui, Hawai'i [TMK: 3-8-007:098]*
Study Type: Archaeological Monitoring Report
Author(s): Shayna Cordle, William Fortini Jr., and Michael F. Dega
Year: 2007
Firm or Organization: Scientific Consultant Services


1990 Rotunno & Cleghorn
1992 Pantaleo & Sinoto
1995 Clark & Dixon
1995 Rotunno-Hazuka et al.
2004 Rotunno-Hazuka & Pantaleo
2005 Shefcheck, Dega & Fortini
2007 Cordle, Fortini & Dega
2020 Yucha, Yates & Hammatt
Kahului Historic District SIHP No. 50-50-04-01607
Maui Lani Burial Complex SIHP No. 50-50-04-02797
Kahului Harbor
Kanaha Pond State Wildlife Sanctuary
Kanaha Pond
War Memorial Stadium
Maui Memorial Medical Center
Hawaii State Government Maui Community Correctional Center
Maui High School
The Dunes at Maui Lani Golf Course
Kaahumanu Ave
Honoapiilani Hwy
Haleakala Hwy
Kuihelani Hwy
Maui Lani Pkwy
Legend
N
Project Area
Historic Properties of Note
Previous Archaeology Surveys
1976 Barrera
1983 Barerra
1983 Miura & Bordner
various, see label
1992 Kennedy, Brennan, & Soldo
1992 Sinoto & Pantaleo
various, see label
2009 Fredricksen
1984 Neller
Meters
0 200 400
Miles
0 0.25 0.5
NOHO PAPA HAWAII
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© 2023 Microsoft Corporation © 2023 Maxar ©CNES (2023) Distribution Airbus DS © 2023 TomTom

Figure 15. An aerial photograph overlain with the boundaries of previous archaeological studies, labeled by author(s) and year, conducted in the project area and vicinity

Table 3.Previously-identified historic properties and SHPD determinations in the project area and vicinity*
*defined as within ½ mile radius of the project area

Designa-tion	Formal Interpretation	Functional Interpretation	Temporal Interpretation	Status	Firm/ Organization	Notes
Previously-identified SHPD determinations in the project area						
SHPD DOC NO: 0903PC83	N/A	N/A	N/A	N/A	SHPD (DLNR 2009)	Requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus; as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities
Previously-identified historic properties in the project area vicinity						
SIHP #-1607 Kahului Historic District	Historic District	Commerce, housing	19th and 20th centuries	Unknown	Nohopapa Hawai'i Internal GIS Database	
SIHP #-50-50-04-02797	Maui Lani Burial Complex	Burials	"pre-Contact or early historical," (Rotunno-Hazuka et al. 1995:39)	Unknown	Bishop Museum Anthropology Department	"It is recommended that Site 50-50-04-2797 be considered significant under National Register Criteria A and D, and significant under State Criterion E, which assigns a traditional cultural value to the site," (Rotunno-Hazuka et al. 1995:i).
SIHP #-4146	Several burials	Burial preserve	Unknown	Unknown, received one burial from SIHP #-5404	Unknown	See discussion in Rottuno-Hazuka and Pantaleo 2004:i Precise location unknown

Designa-tion	Formal Interpretation	Functional Interpretation	Temporal Interpretation	Status	Firm/ Organization	Notes
SIHP #-5404	Two burials	Burials	Unknown	One burial relocated to SIHP #-4146, a burial preserve on Maui Lani Golf Course; one burial preserved in place	Archaeological Services Hawai'i, LLC	See discussion in Rottuno-Hazuka and Pantaleo 2004:i
SIHP #-5504	Human remains	Burials in primary and secondary contexts	Unknown	Unknown	Archaeological Services Hawai'i, LLC	See discussion in Rotunno-Hazuka and Pantaleo 2004:i

Project Area Location: MHS grounds, TMK (2) 3-8-007:098
Project Area Acreage: Unreported
Study Purpose: Results of archaeological monitoring program outlined in Chaffee and Dega (2004)
Methods: Intermittent monitoring between September 2006 and July 2007.
Results: "No cultural deposits or isolated cultural materials were identified during this project. The strata varied from mostly fill layers to natural, sandy sediment sterile of all organics and cultural material (Dega and Risedorf 2004)," (Cordle, Fortini, and Dega 2007:6).
Mitigation Commitments/Historic Preservation Next Steps: None.
Notes:
No detailed descriptions of subsurface excavations, including their horizontal extents, are provided. No stratigraphic profiles or photographs of the project area or subsurface deposits are included in the 10 page report. It also contains a contradictory description of subsurface deposits. In one section, a range of natural and fill strata are reported in the project area (Cordle, Fortini, and Dega 2007:6). Another states "all ground breaking activities never extended below the fill into natural sands," (Cordle, Fortini, and Dega 2007:7).

Study Title: *An Archaeological Monitoring Plan for Proposed Drainage Improvements for Kahului Elementary School, Wailuku* Ahupuaʻa, *Wailuku District, Maui Island (TMK: [2] 3-8-007:Portion of 041 and 098).**
Study Type and Purpose: Archaeological Monitoring Plan (AMP)
Author(s): Erik Fredericksen
Year: 2009
Firm or Organization: Xamanek Researches, LLC
Project Area Location: Current study area, including current project area (Kahului Elementary School Campus)
Project Area Acreage: 1.6 acres
Methods: Monitoring plan generated in compliance with the SHPD requirement (SHPD DOC NO: 0903PC83) of monitoring all ground disturbance activities within the project area.
Results: The AMP recognizes that significant cultural materials are potentially present on the Maui HS campus.
Mitigation Commitments/Historic Preservation Next Steps:
Notes: Frederickson writes: "Given the location of the proposed project area, the State Historic Preservation Division (SHPD) Maui office had previously indicated that archaeological monitoring of all ground disturbance activities would be necessary (SHPD DOC NO: 0903PC83 Appendix A). This requirement was stipulated because the project area lies in a portion of Maui that contains Jaucas and Puʻuone dune sand deposits. Isolated and clustered burials have been previously located in the general vicinity of the project area in this soil type," (Frederickson 2009: 1).
*The records search performed for this study did not yield a final version of this AMP

Study Title: *Draft Archaeological Literature Review and Field Inspection for the Maui High School STEM Building & Autism Center Project, Wailuku Ahupuaʻa, Wailuku District, Maui Island TMK: [2] 3-8-007:098.*
Study Type and Purpose: Literature review and field inspection
Author(s): Josephine Yucha, Angela Yates, and Hallett H. Hammatt
Year: 2020
Firm or Organization: Cultural Surveys Hawaiʻi
Project Area Location: Maui HS Campus
Project Area Acreage: 73.64 acres
Methods: Literature review and pedestrian field inspection

Results: "No potential historic properties were observed on the surface of the project area during the field inspection," (Yucha et al. 2020:ii).
Mitigation Commitments/Historic Preservation Next Steps: "Consultation with the SHPD Archaeology Branch is recommended to determine appropriate historic preservation requirements for this project. CSH recommends archaeological monitoring during project-related ground disturbance based on previous archaeological finds, including human burials, encountered northwest and southwest of the Maui High School within sand deposits that are also present within the current project area," (Yucha, Yates, and Hammatt 2020:68).

Previous Archaeological Research Within the Project Area Vicinity

At least eight compliance-related previous archaeological studies have occurred directly south and southwest of the current project area and are catalogued below; however, several previous archaeological reports were unavailable for examination and inclusion in this overview and discussion (see limitations discussion in the "Previous Archaeological Synthesis and Predictive Model," below).

Study Title: *Archaeological Reconnaissance Kahului Housing – Phase I (Hale Laulea Subdivision) TMK 3-8-07-106*
Study Type and Purpose: Archaeological reconnaissance survey
Author(s): Marvin Miura and Richard Bordner
Year: 1983
Firm or Organization: Environmental Impact Study Corporation
Project Area Location: Directly south of the current project area, Maui HS campus
Project Area Acreage: Unreported
Methods: Pedestrian survey
Results: The authors note "[t]he study are has undergone tremendous land modification in the last twenty years. The initial clearing, grubbing and dune removal for the plantation effectively destroyed the existing land surface for the majority of the study area. This situation was exacerated [sic] by further clearing and recreational activities," (Miura and Bordner 1983:4).
Mitigation Commitments/Historic Preservation Next Steps: "Due to the very disturbed nature of the study area, no further surface work is recommended. The possibility of sub-surface materials, especially burials, must be taken into account. Due to these concerns, the following recommendations are made: 1) It is recommended that backhoe testing be conducted prior to construction work at the study area," focused on the "remnant dune area" (Miura and Bordner 1983:4). Notice to state and county authorities prior to ground-breaking activities, outreach to construction workers regarding the potential for subsurface cultural materials on-site, and "[a] contingency set-up to provide for re-interment of cultural remains at a suitable location," additionally suggested (Miura and Bordner 1983:4).
Notes: No background research and limited informal consultation to understand land use performed. A previous caretaker on the property relayed the land was a sand dunescape until cleared by a fruit plantation in the late 1960s, and did not recollect any artifacts or iwi revealed at any time (Miura and Bordner 1983:2).

Study Title: *Recovery of Endangered Human Bones from the Wailuku Sand Hills, Maui, Hawaii*
Study Type: *Letter Report of Test Excavation Results*
Author(s): Earl Neller
Year: 1984
Firm or Organization: Historic Preservation Office
Project Area Location: Wailuku sand hills, "sand minding area, in the dunes mauka of Onehee Street," (Neller 1983:1), west/northwest of the current study area

Project Area Acreage: Unreported
Study Type and Purpose: Emergency archaeological recovery of human remains
Methods: Surface survey and excavation of partially exposed burial in a primary context.
Results: The burial was excavated, examined, and then "[t]he bones were then placed in a box and temporarily buried in the woods nearby, outside of the sand mining area," (Neller 1984:3). Additional bones on the ground surface were attributed to at least three and potentially more undetected burials in the area (Neller 1984:4).
Mitigation Commitments/Historic Preservation Next Steps: The author recommends: "Archaeologists should begin probing the area to locate the other graves before they are destroyed. Someday soon, houses will be built on the site. Construction and grading should proceed slowly in undisturbed portions of the sand hills. If the ground surface is removed in layers, an archaeologist must be able to spot burial pits before the bones are demolished by bulldozers and backhoes. All skeletal material should be excavated carefully by hand. Measurements and photographs should be taken in place. Controlled excavations should also be conducted to establish stratigraphic relationships. Samples should be collected for land snails analysis and radiocarbon dating. A report should be written describing the results of the fieldwork," (Neller 1984:4).
Notes: No test excavation descriptions, stratigraphic profiles or photographs that can be tied to specific test excavations and locations are contained in the report.

Study Title: *Archaeological Reconnaissance Survey of TMK 3-8-07:02 and 110 Wailuku, Maui.*
Study Type and Purpose: Archaeological reconnaissance survey in order to "locate and record any archaeological sites within the project area, and to assess the potential for subsurface remains," (Rotunno and Cleghorn 1990:1).
Author(s): Rotunno and Cleghorn
Year: 1990
Firm or Organization: Anthropology Department, Bishop Museum
Project Area Location: Wailuku, Maui, directly south and across the street from the current project area
Project Area Acreage: 1,000 acres
Methods: The project area was divided into five zones, number four of which is directly below the current project area. A surface survey utilizing north-south trending transects spaced at 50 m apart was then conducted (Rotunno and Cleghorn 1990:4).
Results: Two potential historic properties identified. In Zone 1, an approximately 15 m long "possible walkway" consisting of "compacted sand cobbles that are in a parallel alignment," was observed (Rotunno and Cleghorn 1990:5). A roughly 0.3 m high, 2.9 x 1.4 m rock mound of "piled, compacted stone cobbles" oriented north-south was recorded "at the top of a knoll in Zone 3," (Rotunno and Cleghorn 1990:5). The authors repeatedly emphasize that "due to dense vegetation cover, some sites may have been missed," (Rotunno and Cleghorn 1990:7). Neither historic property are located in the vicinity of the current project area.
Mitigation Commitments/Historic Preservation Next Steps: Due to the noted presence of burials, and "the possibility of missed sites due to dense vegetation, the past and currently ongoing ground disturbing activities, and imminent development of the Maui Lani parcel," further archaeological work was recommended. This included: "…detailed mapping, and monitoring if needed, during all phases of grubbing activities and subsurface testing," and a combination of backhoe trenches and excavated test units (Rotunno and Cleghorn 1990:7). The authors also recommended "[f]or the sand dune areas with high potential for burials, the feasibility of using ground penetrating radar (Surface Interface Radar) equipment should be explored. Nondestructive methods of burial identification is [sic] highly recommended in view of addressing recent Native Hawaiian and community concerns," (Rotunno and Cleghorn 1990:7).
Notes: The authors repeatedly emphasize that "due to dense vegetation cover, some sites may have been missed," (Rotunno and Cleghorn 1990:7). They also describe Zone 4, directly south of

the current project area, as a location that "has experience a lot of dumping as well as burning and earth moving," noting "[d]irt roads that traverse Zone 4 led to the orchard where most of the trash seems to have originated," and the entire project area as exhibiting "evidence of extensive previous ground disturbing activities," (Rotunno and Cleghorn 1990:7). Importantly, the authors further note "[e]xcavations in, or just south of the project area were prompted by the discovery of human bone in a sand stockpile that had originated in the sand hills. The fill was being used on a construction site in Lahaina."

Study Title: *Draft: Archaeological Inventory Survey of the East Maui Waterline Project, Wailuku and Makawao, Maui (TMK: 2-5-03 thru 05:2-7-3, 2-7-07 thru 11, 2-7-13, 2-7-16 thru 20, 3-8-01, 3-8-06 thru 07, 3-8-51, 3-8-59, 3-8-70, 3-8-71).*
Study Type and Purpose: Archaeological inventory survey of the footprint for a pipeline
Author(s): Aki Sinoto and Jeffrey Pantaleo
Year: 1992
Firm or Organization: N/A
Project Area Location: Central and northern coastal Maui
Project Area Acreage: Unknown – report pages missing.
Methods: "The survey involved systematic transects along selected segments of the project corridor. Since the majority of the project corridor follows existing paved and cane roads, surface survey concentrated in the gulch areas. Machetes were used to cut through dense vegetation," (Sinoto and Pantaleo 1992:8).
Results: Unknown – report pages missing.
Mitigation Commitments/Historic Preservation Next Steps:
Notes: The version of the report available from the SHPD during background research conducted for this study was incomplete – all odd numbered pages were missing

Study Title: *Inventory Survey with Subsurface Testing Report for a Property Located at TMK: [2] 3-8-07:97 (por.) in the Ahupua'a of Wailuku, District of Wailuku, on the Island of Maui.*
Study Type and Purpose: Inventory survey and subsurface testing results reporting.
Author(s): Joseph Kennedy, Peter Brennan, and David Soldo
Year:1992
Firm or Organization: Archaeological Consultants of Hawaii, Inc.
Project Area Location: Kahului Park, roughly 500 m northeast of the MHS project area
Project Area Acreage: 2.41 acres
Methods: Nine mechanical test excavations measured roughly 70 cm wide, 2-3m deep, "…excavated arbitrarily into the portion of the property eligible for testing, in order to ensure the greatest coverage of the intact dune deposit," were installed in the proposed project area (Kennedy et al. 1992: 20). The authors note all test excavations were monitored and that "…random screening of the back fill at arbitrary distances," occurred. Soil samples were taken and representative profiles generated for a selection of test excavations.
Results: "The excavation on the subject property did not encounter human remains in the sand dune. Indeed, no features or deposits of historic significance were encountered on the subject property," (Kennedy et al. 1992:30).
Mitigation Commitments/Historic Preservation Next Steps:
Notes: The authors further note: "The owner and developer should be aware that human burials have been encountered in sand dunes in the Kahului area. It is possible that the testing undertaken during the present investigations did not locate human burials which are present in the sand dune. In the event that human remains are encountered during construction activities, the State Historic Preservation Division should be contacted immediately, in accordance with HRS Chapter 6E," (Kennedy et al. 1992:30).

Study Title: *Archaeological Testing of Four Sites on the Maui Lani Property in Wailuku Ahupua'a, Wailuku District, Island of Maui, Hawai'i.*
Study Type and Purpose: Archaeological subsurface testing and data recovery
Author(s): Lisa Rotunno-Hazuka, B.A., Lonnie Somer, Ph.D., Stephan D. Clark, B.S., and Boyd Dixon, Ph.D.
Year: 1995
Firm or Organization: Anthropology Department, Bishop Museum
Project Area Location: Maui Lani property (TMKs 3-8-07:2 and 110, Wailuku, Maui, directly south and across the street from the current project area
Project Area Acreage: Unreported
Methods: Four archaeological test excavations at intentionally selected, feature-adjacent locations – T-1 (two parallel alignments), T-2 (adjacent to proposed project area footprint), T-3 (two adjacent rock mounds), and T-4 (a single rock mound).
Results: "Sites T-1, T-3, and T-4 are considered to have no archaeological significance, and no further work at these sites is recommended," (Rotunno-Hazuka et al. 1995:i). "The fourth site, designated as Site 50-50-04-2797 (Bishop Museum Site 50-Ma-C9-40), is a human burial site. Test excavations at this site were focused in areas containing surface fragmented human skeletal remains on the western periphery of a sand borrow pit, near the eastern boundary of the Maui Lani project area. Test excavations did not locate intact burial features, but resulted in the recovery of scattered human skeletal remains in Layer I. Based on osteological analysis, these skeletal remains represent a minimum number of three individuals," (Rotunno-Hazuka et al. 1995:i). The finalized version of Fredericksen's 2009 AMP was also unavailable.
Mitigation Commitments/Historic Preservation Next Steps: "It is recommended that Site 50-50-04-2797 be considered significant under National Register Criteria A and D, and significant under State Criterion E, which assigns a traditional cultural value to the site," (Rotunno-Hazuka et al. 1995:i).

Study Title: *Draft Archaeological Monitoring Report for Maui Lani Development at the Bluffs Subdivision, Kamehameha Avenue and Maui Lani Parkway Extensions (TMK 3-8-07:121 PORS, 130, 131). Wailuku Ahupua'a [sic] District, Island of Maui.*
Study Type and Purpose: *Archaeological monitoring program results reporting*
Author(s): Lisa Rotunno-Hazuka and Jeffrey Pantaleo
Year: 2004
Firm or Organization: Archaeological Services Hawaii, LLC
Project Area Location: Maui Lani subdivision, roughly 400 m south and southwest of the current project area
Project Area Acreage: 1,000 acres
Methods: "Archaeological monitoring was initiated on all ground disturbing activities related to construction," in implementation of an archaeological monitoring plan approved by the SHPD in 1996 (Rotunno-Hazuka and Pantaleo 2004:i).
Results: "Monitoring for the Bluffs residential subdivision was performed intermittently from 2000-2003, where two inadvertent burial sites, FS #54 and #62 (SIHP-5404) were identified. FS54 was disinterred and shall be relocated to SIHP #4146 (Loc. 12), a burial preserve within the Golf Course. SIHP #5404 (FS62) has been left *in situ* according to the Burial Treatment and Preservation Plan submitted in March 2003. Monitoring of the roadway corridors was performed in the year 2003, during the months of February thru October. No significant historic properties were identified within the roadway corridors. However, to date, 63 find spots (localized areas with human remains) containing over 100 Native Hawaiian burials; [sic] have been documented at Maui Lani," (Rotunno-Hazuka and Pantaleo 2004:i). The authors further conclude: "Thirty-five burial features have been identified at the Hawaiian Cement, Ameron and Kuihelani Project Areas within TMK 3-8-07_101_121[sic]. Numerous burial features have also been documented along the Lower Main/Waiale corridor which bounds the above mentioned project areas. The identified

of these aforementioned burial sites further supports the inland dunes as a traditional Native Hawaiian burial ground," (Rotunno-Hazuka and Pantaleo 2004:15).
Mitigation Commitments/Historic Preservation Next Steps: Archaeological monitoring of all subsurface deposits recommended (Rotunno-Hazuka and Pantaleo 2004:16).
Notes: Natural sedimentary deposits observed throughout project area; cultural deposits observed to aggregate along a stream deposit (Rotunno-Hazuka and Pantaleo 2004:15). Both burials were revealed *in situ* (Rotunno-Hazuka and Pantaleo 2004:15). The authors further note: "Human remains were identified along Kuihelani Highway at the sod farm (between Waikapu Stream/Waiko Road and Maui Lani Parkway) and assigned SIHP 50-50-04-5504. These remains were unearthed by HC&S when they were building a berm along Kuihelani Highway, and consisted of one individual *in situ* and at least two individuals in secondary contexts (Rotunno-Hazuka and Pantaleo 2004:15).

Background Summary and Predictive Model

Background research and the survey of previous archaeological studies performed for this study show the project area is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians. Ke Kula o Kamaʻomaʻo, the central plains of the isthmus region of Maui, is comprised of dune systems that are battlefield locations commemorated in oral traditions. Ke Kula o Kamaʻomaʻo also served the widely known cultural function as an internment space for the remains of the deceased.

Previous archaeological studies spanning at least 40 years further evince the Hawaiian cultural understanding of the dune systems in Central Maui as battlefields and a burial ground. All previous archaeological studies summarized above note that burials are an obvious and heightened concern in the project area and vicinity, as do the background research efforts performed for this study. Within the vicinity, the Maui Lani Burial Complex (SIHP #-50-50-04-02797) is located roughly ¼ mile northwest of the current project area, and the Kahului Historic District (SIHP #-1607) is located roughly ½ mile to the north (Rotunno-Hazuka et al. 1995:i). SIHP #5404, two burials, were revealed on the Maui Lani development and ordered disinterred and relocated to SIHP #4146, a burial preserve in the Maui Lani golf course whose precise location is indeterminate based on the information currently available (Rotunno-Hazuka and Pantaleo 2004:i). Writing in 2004, but without further detailed references, Rotunno-Hazuka and Pantaleo (2004:i) state: "…to date, 63 find spots (localized areas with human remains) containing over 100 Native Hawaiian burials; [sic] have been documented at Maui Lani," which is just south of the project area. Several previous archaeological studies underscored the increased likelihood for burials within the dune system, need to abide by community concerns regarding this, and the need for all stages of proposed projects to comply with historic preservation rules and regulations (Kennedy et al. 1992:30; Miura and Marvin 1983:4). Specifically, on the basis of the many burials revealed in the sand dune system, Rotunno-Hazuka and Pantaleo declare "the inland dunes as a traditional Native Hawaiian burial ground," (Rotunno-Hazuka and Pantaleo 2004:15). Lastly, a 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The SHPD determination states that archaeological monitoring is recommended in situations where the SHPD "believe[s] it is possible that archaeological sites from the pre- and/or post-Contact periods may be present in the subsurface deposits exposed during the proposed work," (DLNR 2009:2). The letter goes on to require a SHPD-approved Archaeological Monitoring Plan and implementation of an Archaeological Monitoring Program for any ground-disturbing activities.

Background research did not yield previously-recorded historic properties l in the project or study areas. Extensive alteration of the vegetation, topography, and hydrography of the project area and vicinity commenced with nineteenth century ranching and continued with industrialized agricultural activities and the expansion of Kahului suburbs over the course of the last 40 years. Given that the report by Shefcheck, Dega, and Fortini 2005 was not available, and documentary evidence of subsurface excavations in the project area were not provided (Cordle, Fortini, and Dega 2007), not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area.

FIELD INSPECTION RESULTS

Fieldwork was conducted on July 31, 2023, by Nohopapa Hawai‘i, LLC field technicians Momi Wheeler and Kalama‘ehu (Holden) Takahashi, under the supervision of Principal Investigator Rachel Hoerman, Ph.D., State Historic Preservation Department (SHPD) permit #23-28. A pedestrian field inspection of 95% of the project area was performed and required four hours to complete (see Figure 16 through Figure 36). Its purpose was to record current conditions and generate information that could be used to understand the presence of known or newly-noted historic properties and the potential, to the extent possible, for the presence of historic properties. Limitations of the field inspection included a small segment of the northeastern project area (roughly 5% of the total project area) that was overgrown with vegetation and inaccessible (Figure 22) and a fenced-off and potentially abandoned area that appeared to contain fixtures for utilities (see Figure 26), both of which were inaccessible.

The proposed project area is situated along the south-central edge of the MHS campus, on a fenced-in and undeveloped tract of land bearing some evidence, discussed below, of current and past cultivation activities. The majority of the project area ground surface appeared leveled and graded with some exceptions. Vegetation noted in the project area during the field inspection include ‘Uhaloa (*Waltheria indica*) shrubs, the invasive koa haole and fiddlewood (*Citharexylum fruticosum*) trees, Bermuda grass, and other invasive grasses. Active and abandoned māla (*garden plots*) were also observed. An abandoned māla containing overgrown longbeans and other food plants was noted in the north-central project area (Figure 27). A mai‘a patch was also observed under active cultivation in a formal māla within the project area (Figure 29 and Figure 30). A calcerous sand-soil surface matrix was observed and documented in the southeastern portion of the project area (Figure 31). In the western project area, a mound with an intermixed calcerous sand-soil matrix was noted whose tubular form and mixed sand-soil contents indicate it is from mechanized land clearing and modification activities (Figure 32). Exposed PVC piping was also documented in this section of the project area. At the conclusion of fieldwork, Nohopapa field technicians observed a surface scatter of midden within, as well as extending to unknown lengths beyond, the project area on a slope along its north central border. The midden consisted of shell and possible coral fragments (Figure 35, Figure 36). The midden scatter was only present in disturbed areas, and was observed absent from manicured segments of lawn. While the source of the midden scatter was indeterminate, it could potentially indicate a cultural layer or feature and is therefore a potential historic property that requires additional investigation.

In summary, no definitive historic properties were located in the project area during Nohopapa’s recent surface field inspection. A surface midden scatter and potential indicator of a historic property that requires further investigation to evaluate was noted along the north central project area periphery.

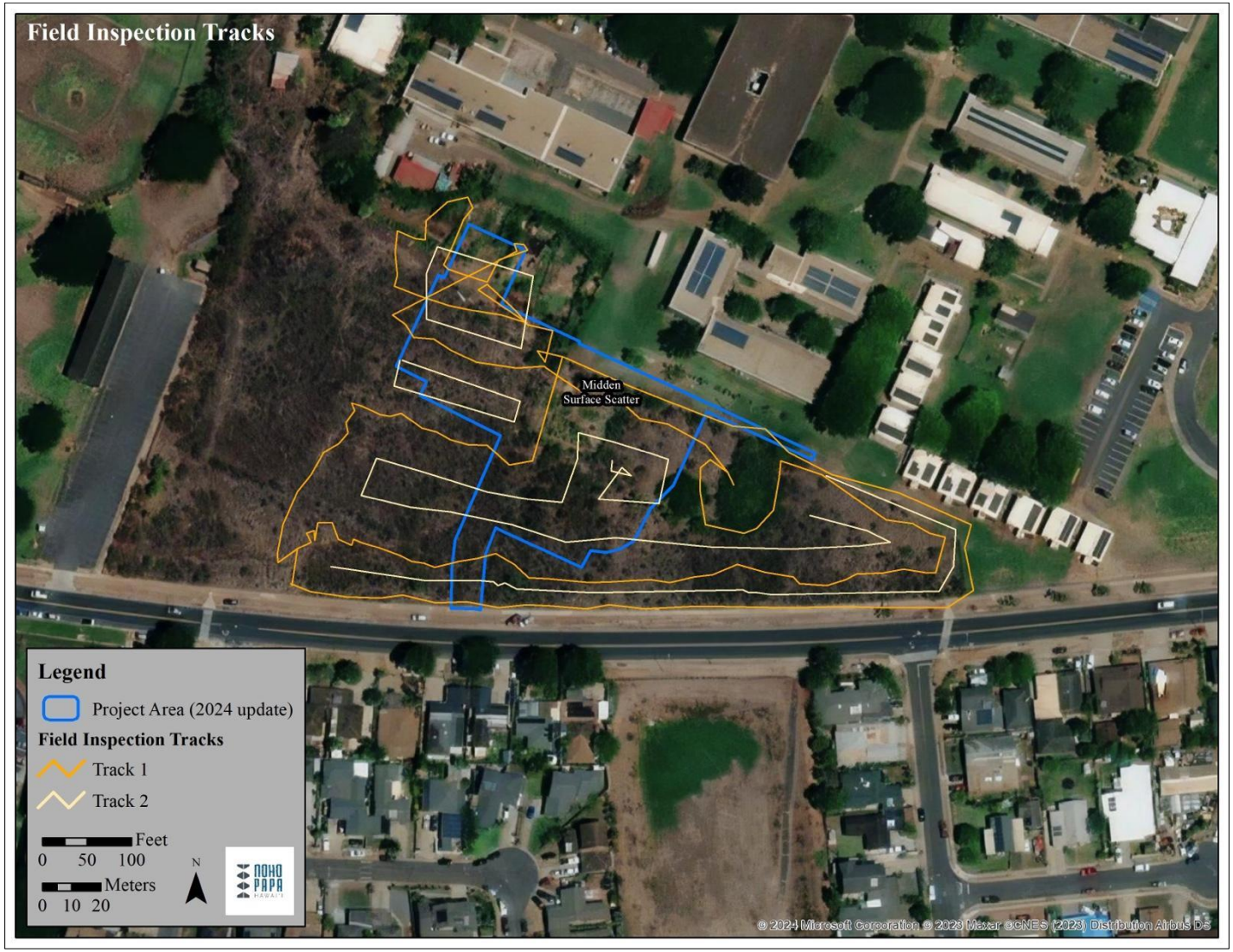

Figure 16. Aerial image overlain with the current project area footprint (in blue) and the tracks taken by Nohopapa Hawai‘i field technicians during the field inspection

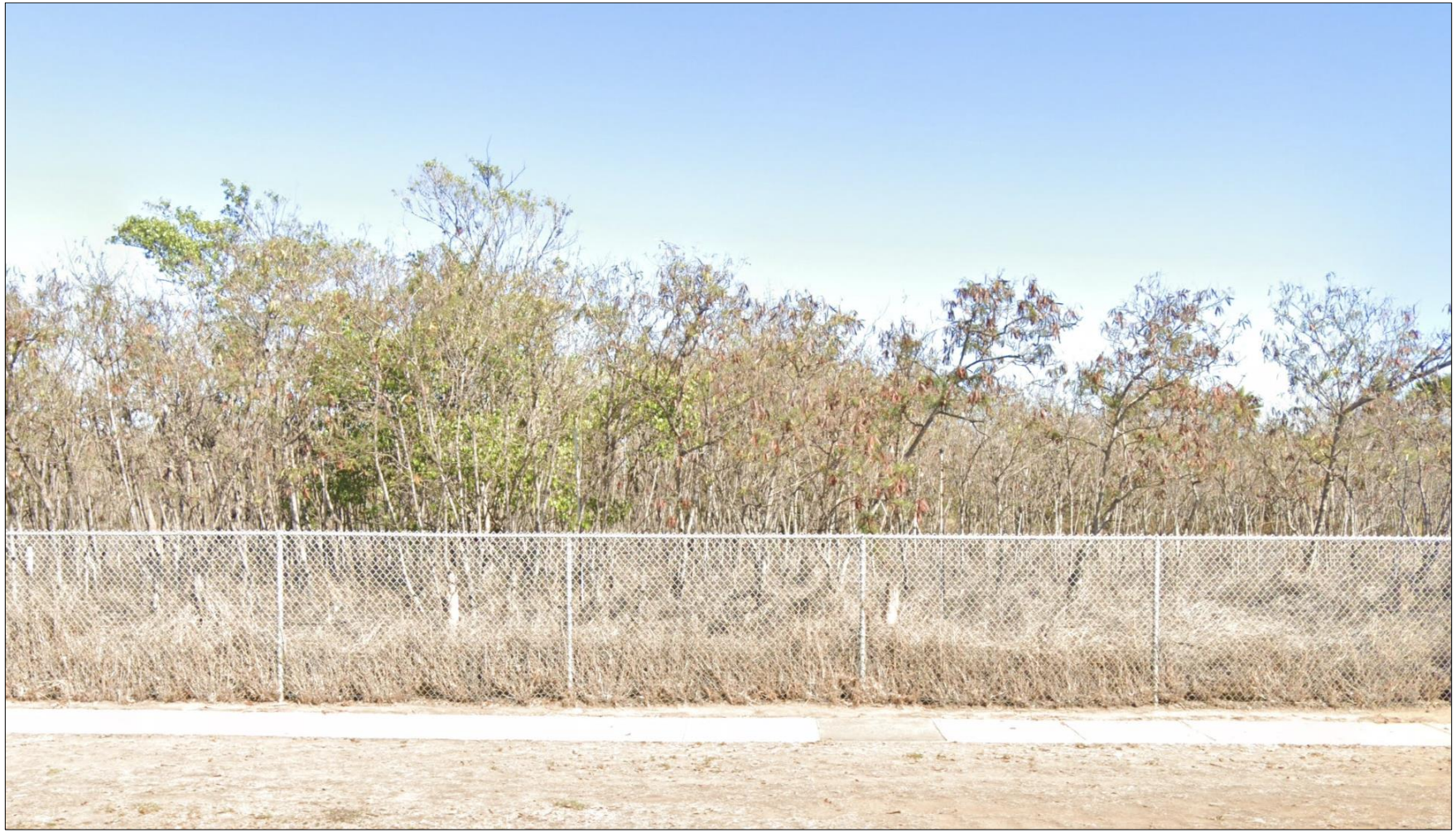

Figure 17. Overview of the central portion of the project area's southern boundary (within the fence) from West Papa Avenue, representative of conditions observed during the 2023 field inspection, view to the north (Google Earth 2023).

Figure 18. Overview of the eastern project area's southern boundary (within the fence) from West Papa Avenue, representative of conditions observed during the 2023 field inspection, view to the east (Google Earth 2023).

Figure 19. Overview of the western project area's southern boundary (within the fence) from West Papa Avenue showing the West Maui Mountains in the left background, representative of conditions observed during the 2023 field inspection, view to the west (Google Earth 2023).

Figure 20. Overview of the south central project area, featuring the chain link fence on the southern project area's periphery bounding West Papa Avenue, view to the south (Nohopapa Hawai'i 2023).

Figure 21. Photograph looking out over project area from the proposed entrance off West Papa Avenue, towards the Maui HS buildings featured, view to the north (Nohopapa Hawai‘i 2023).

Figure 22. Overview of the central northern project area featuring the space that was too overgrown and inaccessible, view to the north (Nohopapa Hawai‘i 2023).

Figure 23. Overview photo of the north-northwest corner of the proposed project area on the MHS campus, view to the northwest (Nohopapa Hawai‘i 2023).

Figure 24. Overview photo of the eastern portion of the proposed project area on the MHS campus, view to the east (Nohopapa Hawai‘i 2023).

Figure 25. Overview photo of the western portion of the proposed project area on the MHS campus, view to the west (Nohopapa Hawai‘i 2023).

Figure 26.Overview of the heavily vegetated and possibly abandoned fenced utility area noted during the field inspection. Haole koa and fiddle trees were observed, as was a possibly water box or valve located within the fenced area, view to the west (Nohopapa Hawai‘i 2023)

Figure 27. Overview photo of the central portion of the proposed project area on the MHS campus that appeared to be an abandoned māla (cultivated garden area) containing overgrown longbeans and other food plants, view to the northwest (Nohopapa Hawai‘i 2023).

Figure 28. Overview photograph of the central interior project area, view to the southeast

Figure 29. Overview photo of land cleared for māla observed in the northwestern proposed project area, view to the southeast. Note the maiʻa patch (Nohopapa Hawaiʻi 2023).

Figure 30. Overview photo of land cleared for māla observed in the northwestern proposed project area, view to the southwest. Note the maiʻa patch (Nohopapa Hawaiʻi 2023).

Figure 31. Exposed calcerous sand-soil matrix in the southeastern portion of the project area, view to the west (Nohopapa Hawai‘i 2023).

Figure 32. A mound in the western portion of the proposed project area featuring an intermixed calcerous sand-soil matrix, view to the northeast (Nohopapa Hawai‘i 2023).

Figure 33. Overview of the northern periphery of the project area (left, within the fence obscured by vegetation) abutting the remainder of the MHS campus and facilities (right), view to the northeast (Nohopapa Hawai‘i 2023).

Figure 34.Overview of the northern periphery of the project area (right, within the fence) abutting the remainder of the MHS campus and facilities (left), view to the southeast (Nohopapa Hawai‘i 2023).

Figure 35. Overview of a representative segment of a surface scatter of shell midden observed on a slope along the north central boundary of the project area (Nohopapa Hawai‘i 2023)

Figure 36. Close-up of a surface scatter of shell midden observed on a slope along the north central boundary of the project area (Nohopapa Hawai‘i 2023).

SUMMARY AND RECOMMENDATIONS

This section discusses and synthesizes the combined results of the literature review and field inspection conducted for the project area and its landscape context in Wailuku Ahupuaʻa, Wailuku Moku, Maui and outlines Nohopapa Hawaiʻi's next steps recommendations for wahi kūpuna stewardship as well as historic preservation compliance requirements.

Literature Review and Field Inspection Results

The project area is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians and must first be understood in that context. Ke Kula o Kamaʻomaʻo, the central plains of the isthmus region of Maui, is comprised of dune systems Hawaiian oral traditions identify as battlefields and burial grounds. Development in and around the project area during the 1970s preceded historic preservation laws and their meaningful implementation and likely attribute to a lack of detailed archaeological data and reports as well as a history of unearthed Native Hawaiian burial sites and trauma in the surrounding Hawaiian community. In short, heavy and dense development occurred prior to legal safeguards protecting Native Hawaiian burial sites. Four decades of previous archaeological studies support the Hawaiian cultural understanding of the dune systems in Central Maui, including those underlying the project area, as a burial ground.

Additionally, the combined literature review and field inspection yielded 1) a 2009 SHPD determination for the northeast MHS campus, within the same TMK just northeast of the project area, and 2) a potential historic property within the project area that requires additional investigation to confirm. The 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The letter also requires implementation of an Archaeological Monitoring Program for any ground-disturbing activities. Background research revealed no previously-identified historic properties in the project area. Likewise, no definitive historic properties were located in the project area during Nohopapa Hawaiʻi's recent field inspection. However, a surface scatter of shell midden, potential evidence for a historic property that requires further investigation, was noted along the north central border of the project area.

In the project area vicinity, the Maui Lani Burial Complex (SIHP #-50-50-04-02797) is located roughly ¼ mile northwest of the current project area, and the Kahului Historic District (SIHP #-1607) is located roughly ½ mile to the north (Rotunno-Hazuka et al. 1995:i). SIHP #5404, two burials, were exposed on the Maui Lani development and ordered disinterred and relocated to SIHP #4146, a burial preserve in the Maui Lani golf course whose precise location is indeterminate based on the information currently available (Rotunno-Hazuka and Pantaleo 2004:i).

Extensive alteration of the vegetation, topography, and hydrography of the project area and vicinity commenced with nineteenth century ranching and continued with industrialized agricultural activities and the expansion of Kahului suburbs over the course of the last 40 years. Given that the Shefcheck, Dega, and Fortini (2005) report was not available, and documentary evidence of subsurface excavations in the project area were not provided (Cordle, Fortini, and Dega 2007), not enough information is available to understand sedimentary deposition and the

likelihood of subsurface historic properties in the project area beyond the heightened probability for burials.
In closing, one SHPD determination (SHPD 2009) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. Most archaeological studies reviewed for this report within the project area, study area, and greater vicinity recommend archaeological monitoring due to increased likelihood for burials, excepting Barrera 1983, the incomplete version available of Sinoto and Pantaleo 1992, and Kennedy et al. 1992. Several studies repeatedly underscore the enhanced likelihood for burials in the project area (Frederickson 2009:1; Yucha, Yates, and Hammatt 202:68) as well as the surrounding vicinity (Miura and Bordner 1983:1; Neller 1984:4; Rotunno and Cleghorn 1990; Rotunno-Hazuka and Pantaleo 2004:i;).

Historic Preservation Next Step Recommendations

The project area is slated for redevelopment, therefore effects to any newly-discovered historic properties located in the project area are possible. Outlined here are lines of information compiling evidence research during this literature review and field inspection:

- The Plain of Kamaʻomaʻo that the project areas sits on, saw heated battles, and served the widely-known Hawaiian cultural function as an internment space for the remains of the deceased and is a known burial ground;
- No definitive historic properties are currently associated with the project area;
- One potential historic property requiring further investigation to confirm was noted during the field inspection – a shell midden scatter on the north central project area boundary;
- A 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The letter also requires implementation of an Archaeological Monitoring Program for any ground-disturbing activities, based on the probability of subsurface burials;
- Human burials have been revealed south (Maui Lani development) and northwest (Maui Lani Burial Complex, SIHP #-50-50-04-02797) of the current project area, in sand dune deposits that also underlie the current project area;
- Not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area beyond the enhanced likelihood for burials.

Based on the above listed facts, we conclude there exists a heightened probability for subsurface sand deposits known to contain burials and historic properties in the project area as well as evidence for a potential historic property, a surface shell midden scatter, that requires additional archaeological investigation to understand and evaluate. Further investigation is thus required before potential project impacts to iwi kūpuna and historic properties can be adequately understood, evaluated, and mitigated for, if needed.

Therefore, our historic preservation next steps recommendations consist of a community-based, archaeological inventory survey comprised of an ethnographically-informed, SHPD-reviewed and approved Archaeological Inventory Survey Plan (AISP) containing research questions and lines of inquiry meaningful to the Hawaiian and local community, implementation of the AISP with

archaeological and cultural monitors present, and SHPD-reviewed and approved Archaeological Inventory Survey Report (AISR) before the project can commence. The AISP, AISP implementation, and AISR should realize professional best practices and must additionally meet the standards set forth in HAR §276, "Rules Governing Standards for Archaeological Inventory Surveys and Reports," (HAR) Chapter 13-276 2002). Since the proposed project is located in an area and substrate that is a known to contain Native Hawaiian burial sites by Hawaiian oral traditions and secondarily by piecemeal archaeological evidence, it is further recommended that community consultation occur to determine whether it is desirable to secure a previously-identified designation for all potential future burials in the project area. If so, it is recommended that a "previously-identified" designation be secured and documented in the AISP per HAR §13-300-31(a)&(b) in the "Rules of Practice and Procedure Relating to Burial Sites and Human Remains." In accordance with professional best practices, these actions should occur prior to archaeological inventory survey and the historic preservation next steps that follow.

Concurrently, and due to the enhanced likelihood for burials to be revealed in the project area, and in alignment with historic preservation next steps recommendations from previous archaeological studies and the 2009 SHPD determination, also recommended are: a SHPD-approved Archaeological Monitoring Plan developed with the local community and in place prior to ground disturbing activities; archaeological and cultural monitoring for all ground disturbing activities; and an archaeological monitoring report meeting professional best practices and the standards of HAR §13-279, "Rules Governing Standards for Archaeological Monitoring Studies and Reports".

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Appendix A: 2009 SHPD Determination

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

March 28, 2009

Ms. Fiona K. van Ammers, P.E.
Ronald M. Fukumoto Engineering, Inc.
1721 Wili Pa Loop, Suite 203
Wailuku, Hawai'i 96793
office@refmaui.com

LOG NO: 2009.1083
DOC NO: 0903PC83
Archaeology

Dear Ms. van Ammers:

SUBJECT: Chapter 6E-8 Historic Preservation Review – Request for Comments Regarding Proposed Drainage Improvements for Kahului Elementary School Wailuku Ahupua'a, Wailuku District, Island of Maui TMK: (2) 3-8-007:041 and (2) 3-8-007:098

Thank you for the opportunity to comment on the aforementioned project, correspondence for which we received on March 4 of 2009.

Based on the submitted information, the project involves excavation deeper than two feet in an area containing sand deposits.

We understand that the area of proposed affect is located within the confines of a currently developed public school campus, which would make anything other than precautionary archaeological monitoring during ground altering disturbance impractical.

We have previously recommended archaeological monitoring as an acceptable form of mitigation in similar situations where we believe it is possible that archaeological sites from the pre- and/or post-Contact periods may be present in subsurface deposits exposed during the proposed work. Therefore, upon review of any permit associated with the proposed project, we will recommend the following:

A qualified archaeological monitor shall be present during all ground altering disturbance within the subject parcels in order to document any historic properties which may be encountered and to provide mitigation measures as necessary.

As per Hawai'i Administrative Rules (HAR) §13-279, this means that prior to the commencement of ground altering disturbance associated with the proposed project, the project developer or developer's agent must submit an appropriately prepared *monitoring plan* to this office for review and acceptance. The plan must contain the following provisions:

1) Specify the kinds of historically or culturally significant sites or remains of sites anticipated and where in the construction area they are likely to be found;
2) Specify how such sites or remains of sites will be documented;

3) Specify how such sites or remains of sites will be treated;
4) Specify that the archaeologist (s) conducting the monitoring has (have) the authority to halt construction in the immediate area of the find in order to carry out the plan;
5) Specify that coordination between the archaeologist and construction crew has been scheduled so that all involved parties are aware of the plan and what it means;
6) Specify what laboratory work will be performed on any cultural sites or remains of sites that might be found in the project area;
7) Specify details concerning the archiving of any collections that are made;
8) Specify a schedule of report preparation and that the report will be submitted within the required 180 days after completion of the proposed undertaking.

A list of those meeting the requirements to perform such work can be obtained on the SHPD's website at http://hawaii.gov/dlnr/hpd/pdfs/2008-Permittee.pdf or by contacting our main office at (808) 692-8015.

Should you have any questions or comments regarding this letter, please contact Patty Conte at (Patty.J.Conte@hawaii.gov).

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793
Maui CRC, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793


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APPENDIX E
Traffic Impact Report

Relocation of DOE Maui District Mowers Facility and
McKinley Community School for Adults

November 2023

Prepared by: Wilson Okamoto Corporation

Traffic Impact Report

Relocation of DOE Maui District Mowers Facility and McKinley Community School for Adults

Prepared for:
Bowers + Kubota Consulting

Prepared by:
Wilson Okamoto Corporation

November 2023

TRAFFIC IMPACT REPORT

FOR THE

RELOCATION OF THE DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

Prepared for:

Bowers + Kubota Consulting
94-408 Akoki Street, Suite 201-A
Waipahu, Hawaii 96797

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #10787-01

November 2023

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the proposed relocation of the Department of Education (DOE) Maui District Mowers Facility (hereafter referred to as the "Mowers Facility") and the McKinley Community School for Adults (MCSA), Maui campus, to the Maui High School (MHS) campus. The proposed project entails the construction of two new buildings that will house the Mowers Facility and MCSA.

B. Scope of Study

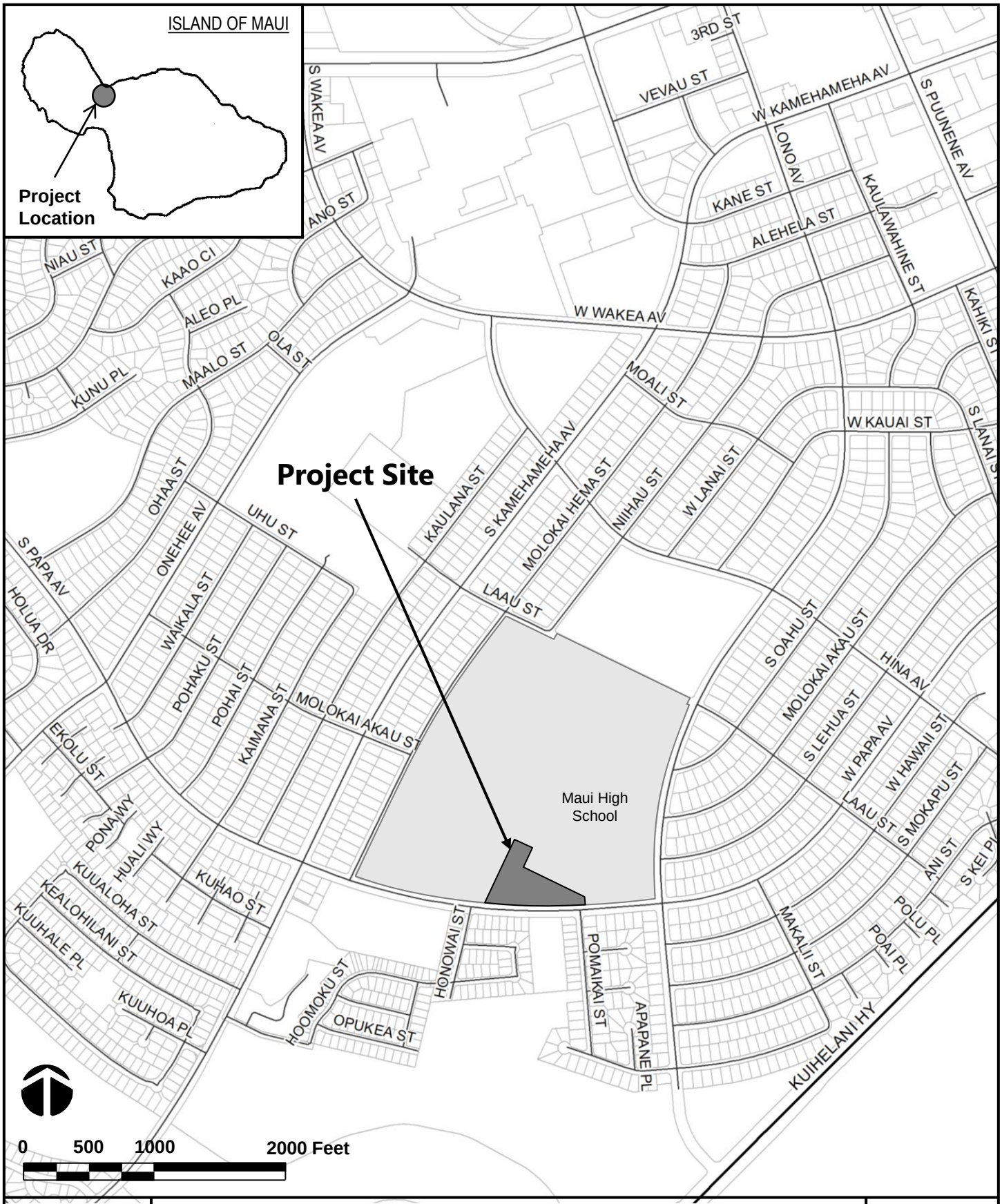
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The existing MHS is located adjacent to Lono Avenue in Kahului, Maui. The MHS campus is bounded by Kahului Elementary School to the north, Lono Avenue to the east, Molokai Hema Street to the west, and W. Papa Avenue to the south. The Mowers Facility and MCSA are expected to be relocated on the south side of the MHS campus adjacent to W. Papa Avenue on the island of Maui (see Figure 1). Access to the project site will be provided via a new driveway off W. Papa Avenue.



WILSON OKAMOTO CORPORATION

DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

LOCATION MAP AND VICINITY MAP

FIGURE 1

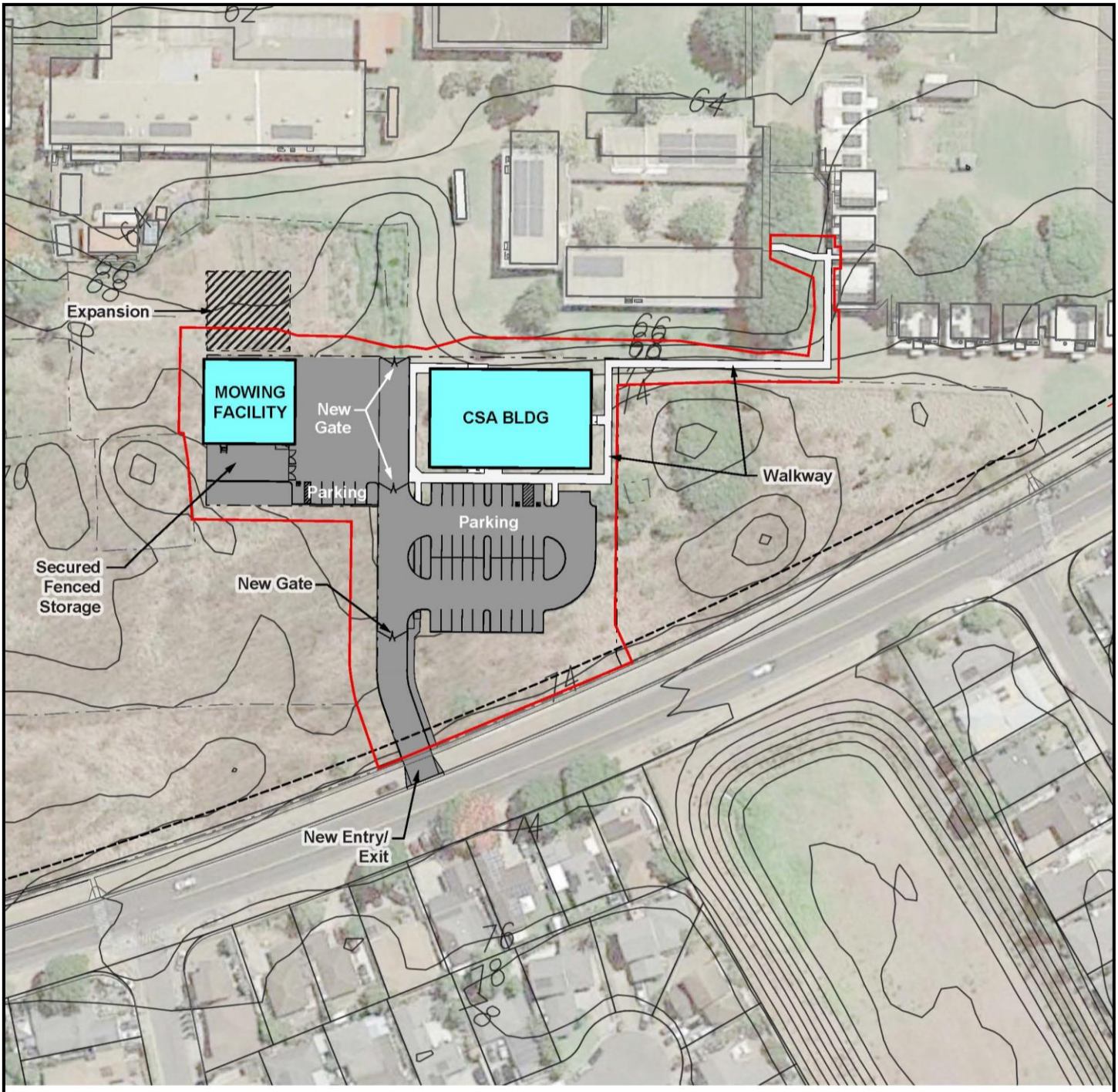
B. Project Characteristics

The project site for the proposed Mowers Facility and MCSA is located on a currently vacant site on the south side of the existing MHS campus. Maui High School serves students in grades 9th-12th with an enrollment of approximately 1,960 students. Based on the bell schedule provided in the school's website, school operations begin at 7:45 AM each weekday with students' dismissal at 2:00 PM on Mondays, Wednesdays, and Fridays and at 1:15 PM and 1:00 PM on Tuesdays and Thursdays, respectively. Primary access to the MHS campus is provided via one-way driveways off Lono Avenue. Both the Mowers Facility and MCSA are being relocated to the MHS campus from an off-site location further north along Kaahumanu Avenue. The Mowers Facility is intended to store and maintain the trucks, trailers, and other associated mowing equipment for the Maui School District mowing operations. The facility will be located on the west portion of the project site and is expected to include a new one-story building, a parking area for the facility's trucks, and a large service area for the facility's trucks with trailers. The MCSA will encompass the east portion of the project site and is expected to include an approximately 9,200 square feet (sf) one-story building for classrooms, offices, and various common areas with an at-grade parking area fronting the building. Access to both uses is expected to be provided via a new two-way driveway off W. Papa Avenue. The proposed project is expected to be completed by Year 2025. See Figure 2 for the proposed site plan.

III. EXISTING TRAFFIC CONDITIONS

A. Area Roadway System

In the vicinity of the project, W. Papa Avenue is a County of Maui roadway generally oriented in the east-west direction serving as a connector roadway between Kaahumanu Avenue and Puunene Avenue. On the southeast corner of the Maui High School campus, W. Papa Avenue intersects Lono Avenue. At this unsignalized intersection, the westbound and eastbound approaches on W. Papa Avenue include a stop-controlled lane that serves all traffic turning movements. Lono Avenue is a



Proposed Project Area

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DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

PROPOSED PROJECT SITE PLAN

FIGURE 2

predominantly two-lane, two-way County of Maui roadway generally oriented in the north-south direction serving adjacent residential uses along its alignment. The northbound and southbound approaches on Lono Avenue include a stop-controlled lane that serves all turning movements.

West of the intersection with Lono Avenue, W. Papa Avenue intersects Pomaikai Street. At this unsignalized T-intersection, the westbound approach on W. Papa Avenue includes one lane that serves left-turn and through movements while the eastbound approach includes one lane that serves through and right-turn movements. The south leg of the intersection is comprised of Pomaikai Street, a two-lane, two-way County of Maui roadway that serves residential uses. The northbound approach on Pomaikai Street includes a stop-controlled lane that serves left and right-turn traffic movements.

Further west, W. Papa Avenue intersects Honowai Street. At this unsignalized T-intersection, the westbound approach on W. Papa Avenue includes one lane that serves left-turn and though movements while the eastbound approach includes one lane that serves through and right-turn movements. The south leg of the intersection is comprised of Honowai Street, a two-lane, two-way County of Maui roadway that serves residential uses along its alignment. The northbound approach on Honowai Street includes a stop-controlled lane that serves left and right-turn movements.

At the southwest corner of the Maui High School campus, W. Papa Avenue intersects Molokai Hema Street. At this unsignalized T-intersection, the westbound approach on W. Papa Avenue includes one lane that serves though and right-turn movements while the eastbound approach includes one lane that serves left-turn and through movements. The north leg of the intersection is comprised of Molokai Hema Street, a two-lane, two-way County of Maui roadway that serves residential uses along its alignment. The southbound approach on Molokai Hema Street includes a stop-controlled lane that serves left and right-turn traffic movements.

West of the intersection with Molokai Hema Street, W. Papa Avenue intersects S. Kamehameha Avenue. At this signalized intersection, the westbound

and eastbound approaches on W. Papa Avenue include exclusive lanes to serve all turning movements. S. Kamehameha Avenue is a predominantly two-lane, two-way County of Maui roadway generally oriented in the north-south direction between Kaahumanu Avenue and Meheu Circle. At the intersection with W. Papa Avenue, the northbound and southbound approaches on Kamehameha Avenue include exclusive lanes for all traffic movements.

B. Traffic Volumes and Conditions

1. General

a. Existing Traffic Data

Field investigations were conducted on September 26, 2023, which consisted of manual turning movement count surveys during the morning peak hours between 6:00 AM and 9:00 AM, and the afternoon peak hours between 3:00 PM and 6:00 PM at the following intersections:

- W. Papa Avenue and Lono Avenue
- W. Papa Avenue and Pomaikai Street
- W. Papa Avenue and Honowai Street
- W. Papa Avenue and Molokai Hema Street
- W. Papa Avenue and S. Kamehameha Avenue

It should be noted that the afternoon data collection was conducted during the typical afternoon commuter peak period rather than during the school peak period based on the anticipated operations associated with the proposed uses. The anticipated operations are discussed in more detail in Section IV of this report. Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2016, and the "Synchro" software, developed by Trafficware. The analysis is based on the concept of

Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Existing Peak Hour Traffic

a. General

Figures 3 and 4 show the existing lane configurations and peak period traffic volumes. The AM peak hour of traffic generally occurs between 7:15 AM and 8:15 AM while the PM peak hour of traffic generally occurs between the hours of 4:45 PM and 5:45 PM. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.

b. W. Papa Avenue and Lono Avenue

At the intersection with Lono Avenue, W. Papa Avenue carries 447 vehicles eastbound and 263 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are slightly higher with 465 vehicles traveling eastbound and 293 vehicles traveling westbound. The eastbound approach operates at LOS "D" during both peak periods while the westbound approach operates at LOS "C" during the AM peak period and LOS "B" during the PM

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DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

EXISTING LANE CONFIGURATIONS

FIGURE 3

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DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

EXISTING YEAR 2023 PEAK HOURS OF TRAFFIC

FIGURE 4

peak period. Traffic queues periodically formed along both approaches of W. Papa Avenue with the most significant queueing observed during the AM peak period. Along the eastbound approach, average queues of 10- 12 vehicles were observed with these queues occasionally extending to the upstream intersection with Pomaikai Street. On the westbound approach, average queue lengths of 8-10 vehicles were observed during the same peak period. Field observations indicate that these queues are influenced by the all-way stop-control at the intersection, as well as by vehicles accessing the nearby schools since these queues were primarily clustered around the start of the school day and dissipated once school was in session.

The Lono Avenue approach of the intersection carries 128 vehicles northbound and 348 vehicles southbound during the AM peak period. During the PM peak period, traffic volumes are less with 108 vehicles traveling northbound and 197 vehicles traveling southbound. The northbound approach operates at LOS "B" during both peak periods while the southbound approach operates at LOS "C" during the AM peak period and LOS "B" during the PM peak period. Traffic queues periodically formed along both approaches on Lono Street with the most significant queuing observed during the AM peak period. Average queue lengths of 3-5 vehicles were observed on the northbound approach while average queue lengths of 7- 9 vehicles were observed on the southbound approach during this peak period. As previously discussed, field observations indicate that these queues are influenced by the all-way stop control at the intersection, as well as by vehicles accessing the nearby schools since these queues were primarily clustered around the start of the school day and dissipated once school was in session.

Crosswalks are provided across W. Papa Avenue on the east and west sides of the intersection, as well as across Lono Avenue on

the north and south sides of the intersection. During the AM peak period, 7 pedestrians and 19 pedestrians were observed crossing W. Papa Avenue on the east and west sides of the intersection, respectively, while 7 pedestrians and 3 pedestrians were observed crossing Lono Avenue on the north and south sides of the intersection, respectively. During the PM peak period, 5 pedestrians were observed crossing W. Papa Avenue on the west side of the intersection, while 1 pedestrian was observed crossing Lono Avenue on the north side of the intersection. There were no pedestrians observed crossing the east and south sides of the intersection during the PM peak period.

c. W. Papa Avenue and Pomaikai Street

At the intersection with Pomaikai Street, W. Papa Avenue carries 466 vehicles eastbound and 452 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is slightly less with 483 vehicles traveling eastbound and 417 vehicles traveling westbound. As previously discussed, queues along W. Papa Avenue from the downstream intersection with Lono Street occasionally extended to this intersection during the AM peak period. Field observations indicate that queueing in the vicinity are influenced by vehicles accessing the nearby schools since these queues were primarily clustered around the start of the school day and dissipated once school was in session.

The Pomaikai Street approach of the intersection carries 44 vehicles northbound during the AM peak period and 35 vehicles during the PM peak period. The northbound approach operates at LOS "C" during both peak periods. Minimal queues were observed at the Pomaikai Street approach of the intersection during both peak periods.

Crosswalks are provided across W. Papa Avenue on the east side of the intersection, as well as across Pomaikai Street on the south side of the intersection. During the AM peak period, 27 pedestrians

were observed crossing W. Papa Avenue on the east side of the intersection, while 18 pedestrians were observed crossing Pomaikai Street on the south side of the intersection. During the PM peak period, 5 pedestrians were observed crossing W. Papa Avenue on the east side of the intersection, while 3 pedestrians were observed crossing Pomaikai Street on the south side of the intersection.

d. W. Papa Avenue and Honowai Street

At the intersection with Honowai Street, W. Papa Avenue carries 441 vehicles eastbound and 471 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is less with 463 vehicles traveling eastbound and 408 vehicles traveling westbound.

The Honowai Street approach of the intersection carries 71 vehicles southbound during the AM peak period and 56 vehicles during the PM peak period. The northbound approach operates at LOS "C" during both peak periods. Minimal queues were observed on the Honowai Street approach during both peak periods.

Crosswalks are provided across W. Papa Avenue on the west side of the intersection, as well as across Honowai Street on the south side of the intersection. During the AM peak period, 9 pedestrians were observed crossing W. Papa Avenue on the west side of the intersection, while 6 pedestrians were observed crossing Honowai Street on the south side of the intersection. During the PM peak period, 1 pedestrian was observed crossing W. Papa Avenue on the west side of the intersection, while 4 pedestrians were observed crossing Honowai Street on the south side of the intersection.

e. W. Papa Avenue and Molokai Hema Street

At the intersection with Molokai Hema Street, W. Papa Avenue carries 510 vehicles eastbound and 483 vehicles westbound during the AM peak period. During the PM peak period, the overall

traffic volume is less with 474 vehicles traveling eastbound and 378 vehicles traveling westbound. Field observation indicates that queues along W. Papa Avenue from the downstream intersection with Kamehameha Avenue occasionally extended through this intersection during the AM peak period. Field observation indicates that these queues are associated with the nearby schools since these dissipated after the start of the school day.

The Molokai Hema Street approach of the intersection carries 37 vehicles southbound during the AM peak period and 24 vehicles during the PM peak period. The southbound approach operates at LOS "B" during the AM peak period and LOS "C" during the PM peak period. Minimal queues were observed on the southbound approach of Molokai Hema Street.

Crosswalks are provided across W. Papa Avenue on the east side of the intersection, as well as across Molokai Hema Street on the north side of the intersection. During the AM peak period, 14 pedestrians were observed crossing W. Papa Avenue on the east side of the intersection, while 7 pedestrians were observed crossing S. Molokai Hema Street on the north side of the intersection. During the PM peak period, 3 pedestrians were observed crossing W. Papa Avenue on the east side of the intersection, while 2 pedestrians were observed crossing Molokai Hema Street on the north side of the intersection.

f. W. Papa Avenue and S. Kamehameha Avenue

At the intersection with S. Kamehameha Avenue, W. Papa Avenue carries 586 vehicles eastbound and 498 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is less with 481 vehicles traveling eastbound and 380 vehicles traveling westbound. The eastbound approach operates at LOS "B" during the AM peak period and LOS "C" during the PM

peak period while the westbound approach operates at LOS "B" during both peak periods. Traffic queues periodically formed along both approaches of W. Papa Avenue with the most significant queues observed during the AM peak period. As previously discussed, field observations indicate that queues occasionally extended through the intersection with Molokai Hema Street with these queues generally clustered around the start of the school day and dissipated once school was in session.

The S. Kamehameha Avenue approaches of the intersection carries 602 vehicles northbound and 295 vehicles southbound during the AM peak period. During the PM peak period, the overall traffic volume is slightly higher with 556 vehicles traveling northbound and 389 vehicles traveling southbound during the PM peak period. The northbound approach operates at LOS "C" during the AM peak period and LOS "B" during the PM peak period while the southbound approach operates at LOS "C" during both peak periods. Traffic queues periodically formed on both approaches of S. Kamehameha Avenue with the most significant queues observed during the AM peak period. Average queue lengths of 8-10 vehicles were observed on the northbound approach while average queue lengths of 4-6 vehicles were observed on the southbound approach during that peak period.

Crosswalks are provided across W. Papa Avenue on the east and west sides of the intersection, as well as across S. Kamehameha Avenue on the north and south sides of the intersection. During the AM peak period, 2 pedestrians and 3 pedestrians were observed crossing W. Papa Avenue on the east and west sides of the intersection, respectively, while 4 pedestrians and 11 pedestrians were observed crossing S. Kamehameha Avenue on the north and south sides of the intersection, respectively. During the PM peak period, no pedestrians were observed crossing W. Papa Avenue on the east and

west sides of the intersection, while 1 pedestrian and 2 pedestrians were observed crossing S. Kamehameha Avenue on the north and south sides of the intersection, respectively.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is generally based upon accepted techniques developed by the Institute of Transportation Engineers (ITE) published in "Trip Generation, 11th Edition," 2021 and anticipated operational information for the proposed uses. Site-generated traffic associated with the Mowers Facility are expected to be primarily attributed to employees and the transport of mowing equipment to various schools within the DOE Maui District. The Mowers Facility is expected to have 3 employees whose work hours are from 6:00 AM and 2:30 PM and as such, employees are expected to access the project site outside of the morning and afternoon commuter peak hours. Trucks that transport the mowing equipment (3 total trucks) are expected to leave the site daily after employees start their work shifts at 6:00 AM and return to the site prior to the end of their work shifts at 2:30 PM. As such, only the trucks exiting the project site in the morning were assumed to occur during the peak periods and thereby incorporated into the analysis. It should be noted that although the return trips associated with the transport of the mowing equipment as well as those related to employees leaving the site at the end of their work shift may overlap with the end of the school day, the total number of these trips is expected to be relatively low. In addition, as previously discussed, access to the Mowers Facility is expected to be provided off W. Papa Avenue, separate from the primary access for the high school off Lono Avenue.

The trips associated with the MCSA are expected to be attributed to employees and students. Site-generated trips associated with the employees of the MCSA were determined based on their expected work hours while

those attributed to students were based on an assessment of the schedule, duration, and maximum capacity of classes. Employees of the MCSA are expected to be comprised of 3 full-time employees whose work hours are between 7:30 AM and 4:00 PM. The MCSA also has 9 total part-time employees whose work shifts are either from 9:00 AM to 12:00 PM in the morning (6 employees) and from 5:00 PM and 8:00 PM in the evening (3 employees). As such, the trips associated with the full-time employees of the MCSA, as well as the entering trips of the evening employees were assumed to occur during the peak periods. The type of classes offered at the MCSA vary depending on the day, but in general, daytime classes occur between 9:00 AM and 3:00 PM with an evening class offered between 5:00 PM and 7:00 PM. The MCSA also offers lab/review sessions during the daytime that are by appointment only. The duration of the classes vary between 2-3 hours long with class sizes ranging between 10-40 students. Based on the class schedule and duration, the majority of trips associated with students of the MCSA are not expected to overlap with the school operations at the adjacent high school. There are tutoring sessions at MCSA that end at 2:00 PM on select days which may overlap with the high school end of day operations, but these sessions are typically by appointment only. In addition, as previously mentioned, access to the MCSA is expected to be provided via a new driveway off W. Papa Avenue separate from the access for the high school off Lono Avenue. Only the trips associated with students accessing the project site for evening class which has a maximum enrollment of 20 students is expected to occur during the PM peak hour. All students were conservatively assumed to access the project site via motorized modes with a vehicular occupancy of 1 student/vehicle. It should be noted that there are transit facilities located in close proximity to the proposed project. However, all site-generated trips were assumed to be made via vehicular mode for a conservative analysis. Tables 1 and 2 summarize proposed peak hour trip generation characteristics for proposed uses. It should also be noted that although the MCSA anticipates

its overall annual enrollment to increase, the number of classes offered is not expected to change at this time. As such, maximum enrollment which serves as the basis of the trip generation calculations used for this report is not expected to increase.

Table 1: Proposed Peak Hour Trip Generation

DOE MAUI MOWERS FACILITY		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	0
	EXIT	3
	TOTAL	3
PM PEAK	ENTER	0
	EXIT	0
	TOTAL	0
MCKINLEY COMMUNITY SCHOOL FOR ADULTS		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	3
	EXIT	0
	TOTAL	0
PM PEAK	ENTER	23
	EXIT	3
	TOTAL	26
TOTALS		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	3
	EXIT	3
	TOTAL	6
PM PEAK	ENTER	23
	EXIT	3
	TOTAL	26

2. Trip Distribution

Figure 5 shows the distribution of new site-generated traffic during the AM and PM peak periods. Access to the project site is expected to be provided via a new driveway off W. Papa Avenue. The directional distribution of all site-generated vehicles was based on the directional distribution of traffic along W. Papa Avenue in the vicinity of the project site. As such, 49% of the vehicles were assumed to be traveling to/from the east while 51% were assumed to be traveling to/from the west during the AM peak

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DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

DISTRIBUTION OF SITE-GENERATED VEHICLES WITH PROJECT

FIGURE 5

period. During the PM peak period, 47% and 53% were assumed to be traveling to/from the east and west, respectively. All site-generated trips were distributed at the study intersections based upon their assumed origin/destination and the relative convenience of the available routes.

B. Through-Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at survey stations in the vicinity of the project site. The historical data indicates fluctuating/declining traffic volumes in the project vicinity. As such, an annual traffic growth rate of approximately 0.5 % was conservatively assumed. Using 2023 as the Base Year, a growth rate factor of 1.02 was applied to the existing through traffic demands along the surrounding roadways to achieve the projected Year 2025 traffic demands.

C. Total Traffic Volumes Without Project

The projected Year 2025 AM and PM peak period traffic volumes and operating conditions without the proposed project is shown in Figure 6 and summarized in Table 2. The analysis incorporates the ambient growth of traffic. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

Table 2: Existing and Year 2025 (Without Project) LOS Traffic Operating Conditions

Intersection	Approach	AM		PM	
		Exist	Year 2025 w/o Proj	Exist	Year 2025 w/o Proj
W. Papa Ave/ Lono Ave	Eastbound	D	D	D	D
	Westbound	C	C	B	C
	Northbound	B	B	B	B
	Southbound	C	C	B	B
W. Papa Ave/ Pomaikai St	Northbound	C	C	C	C
W. Papa Ave/ Honowai St	Northbound	C	C	C	C
W. Papa Ave/ Molokai Hema St	Southbound	B	B	C	C

WILSON OKAMOTO CORPORATION

DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

YEAR 2025 PEAK HOURS OF TRAFFIC WITHOUT PROJECT

FIGURE 6

Table 2: Existing and Year 2025 (Without Project) LOS Traffic Operating Conditions Cont'd)

Intersection	Approach	AM		PM	
		Exist	Year 2025 w/o Proj	Exist	Year 2025 w/o Proj
W. Papa Ave/ S. Kamehameha Ave	Eastbound	B	B	C	C
	Westbound	B	B	B	B
	Northbound	C	C	B	B
	Southbound	C	C	C	C

Under Year 2025 without project conditions, traffic operations are generally expected to remain similar to existing conditions. Along W. Papa Avenue, the approaches at the intersection with Lono Avenue are expected to continue operating at LOS "D" or better during both peak periods. As previously discussed, traffic operations at this intersection are influenced by the all-way stop control at the intersection. At S. Kamehameha Avenue, the approaches at the intersection with W. Papa Avenue are expected to continue operating similar to existing conditions at LOS "C" or better during both peak periods. The remaining study intersections along W. Papa Avenue are also expected to continue operating at LOS "C" or better during both peak periods.

D. Total Traffic Volumes With Project

Figure 7 show the projected Year 2025 cumulative AM and PM peak hour traffic conditions resulting from the proposed project. The cumulative volumes consist of site-generated traffic superimposed over Year 2025 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The projected Year 2025 cumulative AM and PM peak hour traffic conditions resulting from the proposed project are summarized in Table 3. The existing and projected Year 2025 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.

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DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

YEAR 2025 PEAK HOURS OF TRAFFIC WITH PROJECT

FIGURE 7

Table 3: Existing and Year 2025 (Without and With Project) LOS Traffic Operating Conditions

Intersection	Approach	AM		PM	
		Year 2025		Year 2025	
		w/o Proj	w/ Proj	w/o Proj	w/ Proj
W. Papa Ave/ Lono Ave	Eastbound	D	D	D	D
	Westbound	C	C	C	C
	Northbound	B	B	B	B
	Southbound	C	C	B	B
W. Papa Ave/ Pomaikai St	Northbound	C	C	C	C
W. Papa Ave/ Honowai St	Northbound	C	C	C	C
W. Papa Ave/ Molokai Hema St	Southbound	B	B	C	C
W. Papa Ave/ S. Kamehameha Ave	Eastbound	B	B	C	C
	Westbound	B	B	B	B
	Northbound	C	C	B	B
	Southbound	C	C	C	C

Under Year 2025 with project conditions, traffic operations in the vicinity of the proposed project are expected to remain similar to without project conditions. Along S. Kamehameha Avenue, the approaches at the intersection with W. Papa Avenue are expected to continue operating at LOS "C" or better during both peak periods. Along W. Papa Avenue, traffic operations at the intersection with Molokai Hema Street are expected to continue operating at LOS "B" and LOS "C" during the AM and PM peak periods, respectively, whereas those at the intersections with Honowai Street and Pomaikai Street are expected to continue operating at LOS "C" or better during both peak periods. At Lono Avenue, the approaches at the intersection are expected to continue operating at LOS "D" or better during both peak periods.

VI. MULTIMODAL FACILITIES

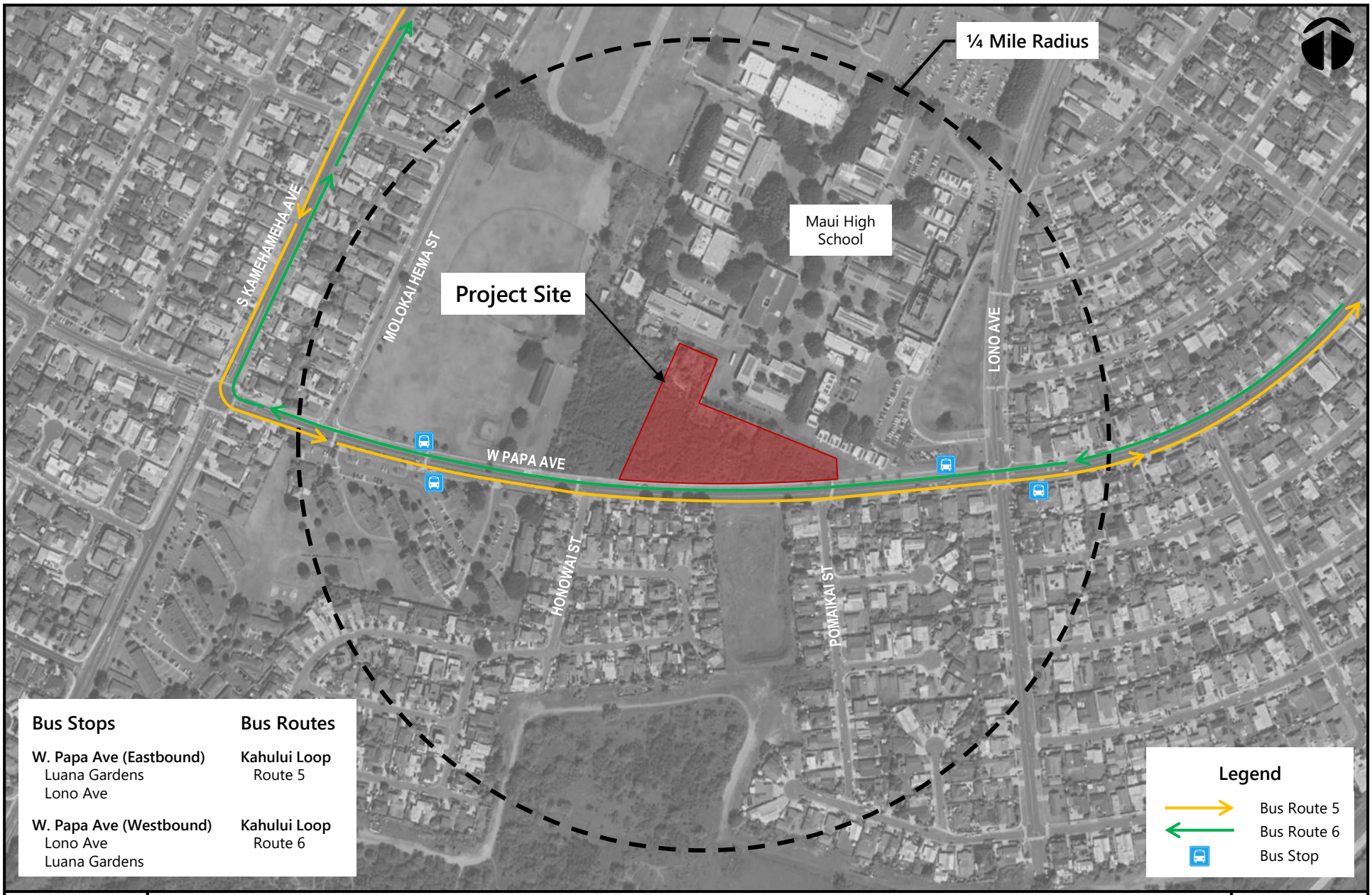
A. Existing Conditions

The proposed project is located within a residential community where there is a network of pedestrian facilities. Along W. Papa Avenue, there are sidewalks and curb ramps to provide access to the nearby schools, transit facilities, and surrounding

residential uses. The sidewalks generally include landscaped strips that serve as buffer between the sidewalk and vehicular travelway. Pedestrian crossings across W. Papa Avenue are facilitated via marked crosswalks at the intersections with S. Kamehameha Avenue, Molokai Hema Street, Honowai Street, Pomaikai Street, and Lono Avenue. A midblock crosswalk is also provided between Honowai Street and Molokai Hema Street to facilitate access to a nearby transit stop. It should be noted that the intersection with Kamehameha Avenue is a signalized intersection with designated pedestrian crossings, while the intersection with Lono Avenue is an all-way stop intersection and as such, motorists at all the approaches of this intersection must come to a complete stop and yield the right-of-way to pedestrians waiting to cross the street. In addition to the aforementioned pedestrian facilities, there is overhead street lighting provided to increase pedestrian comfort during the evening hours.

Existing dedicated bicycle facilities in the vicinity of the project site are generally limited with bicyclists along the surrounding roadways required to share the travel way with vehicular traffic. There are bike lanes provided along Papa Avenue west of the intersection with Kamehameha Avenue, however bicyclists in the immediate vicinity of the proposed project must utilize shared-use facilities to access the designated bike lanes. As such, conditions for bicyclists in the vicinity are generally more suited for those who are experienced.

Transit service in the project vicinity is provided by the "Maui Bus" which is operated by Roberts Hawaii for the County of Maui. Bus stops along W. Papa Avenue are provided near the intersections with Lono Avenue and Molokai Hema Street, both of which are within a five minute walk from the proposed project (see Figure 8). These bus stops are served by Routes 5 and 6 (referred collectively as the Kahului Loop) which operate approximately between 6:30 AM and 9:30 PM and 7:00 AM and 10:00 PM, respectively, with headways of 1 hour. Access to these transit facilities are provided via pedestrian facilities along W. Papa Avenue. As previously discussed, although there are transit facilities in close proximity to the project site, all



WILSON OKAMOTO CORPORATION

DOE MAUI DISTRICT MOWERS FACILITY AND MCKINLEY COMMUNITY SCHOOL FOR ADULTS

TRANSIT FACILITIES

FIGURE 8

site-generated trips were assumed to utilize vehicular mode for a conservative analysis.

B. Projected Conditions

The proposed project is expected to maintain the existing multimodal facilities in the vicinity of the project. In addition, internal pedestrian walkways are expected to be constructed in conjunction with the proposed project to provide pedestrian connectivity between the proposed uses and the existing MHS campus. It should be noted that these are intended for pedestrian use only with vehicular access limited to the new driveway off Papa Avenue. Existing bicycle and transit facilities are also generally expected to be maintained. It should be noted that there are plans to implement Complete Streets improvements along Papa Avenue in the vicinity of the proposed project, as included in the Maui Metropolitan Planning Organization's Long-Range Transportation Plan entitled, "Hele Mai Maui 2040." These include plans to incorporate bicycle lanes, multi-use paths, traffic calming features, wide sidewalks, trees and other landscaping, and intersection improvements along this roadway. The project is listed as a near-term priority, however, the timeline and more specific details about the proposed improvements are not known at this time. As such, these improvements were not incorporated into projected conditions.

VII. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Provide sufficient sight distance for motorists to safely enter and exit all project driveways.

2. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto public roadways.

4. Provide sufficient turning radii at all project driveways to avoid vehicle encroachments to oncoming traffic lanes.

5. Provide adequate pedestrian connections between the on-site and off-site facilities. All pedestrian connections should be made accessible in conformance with the American with Disabilities Act (ADA).

6. Consider incorporating bicycle facilities within the project boundaries including designated and secured bicycle parking to encourage the use of alternate modes of transportation.

7. Consider the preparation of a supplementary traffic assessment if the anticipated operations of the Mowers Facility and the MCSA significantly change (i.e. provision of additional classes, operations to overlap with the high school operations).

VIII. CONCLUSION

The proposed project entails the relocation of the Department of Education Maui District Mowers Facility and the McKinley Community School for Adults to a currently vacant portion of the Maui High School (MHS) campus. Access is expected to be provided via a new driveway off W. Papa Avenue with the project anticipated to be completed by Year 2025. Under with project conditions, traffic operations are expected to remain similar to without project conditions. Based on the daily operations associated with the proposed uses including the anticipated class schedule of the MCSA, the majority of trips accessing the project site are not expected to overlap during the operations of the adjacent high school. As such, with the implementation of the aforementioned recommendations, the proposed project is not expected to have a significant impact on the surrounding roadways.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T218

DATE: Tue, Sep 26, 23

LOCATION: Kahului
NORTH & SOUTH: Lono Ave
EAST & WEST: W Papa Ave

PROJECT #: SC4129
LOCATION #: 1
CONTROL: STOP ALL

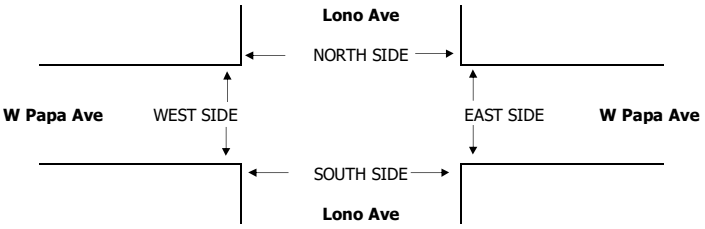
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Lono Ave			SOUTHBOUND Lono Ave			EASTBOUND W Papa Ave			WESTBOUND W Papa Ave			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	6:00 AM	11	4	7	0	2	11	7	39	2	0	23	3	109
	6:15 AM	6	5	10	2	2	9	6	40	6	0	23	1	110
	6:30 AM	15	13	3	2	3	12	8	68	9	1	40	4	178
	6:45 AM	11	12	5	4	4	17	26	73	1	2	39	12	206
	7:00 AM	18	14	15	5	6	44	33	46	5	1	65	11	263
	7:15 AM	17	18	4	13	7	59	60	47	4	1	59	16	305
	7:30 AM	12	20	9	17	6	61	65	40	5	3	47	24	309
	7:45 AM	11	13	5	27	8	61	58	48	1	4	28	25	289
	8:00 AM	5	10	4	24	5	60	76	36	7	3	36	17	283
	8:15 AM	9	7	5	14	8	41	31	54	5	1	23	16	214
	8:30 AM	12	10	4	2	8	17	9	34	3	1	27	3	130
	8:45 AM	3	9	5	3	6	16	8	42	7	1	32	5	137
	VOLUMES	130	135	76	113	65	408	387	567	55	18	442	137	2,533
	APPROACH %	38%	40%	22%	19%	11%	70%	38%	56%	5%	3%	74%	23%	
	APP/DEPART	341	/	659	586	/	138	1,009	/	756	597	/	980	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	45	61	22	81	26	241	259	171	17	11	170	82	1,186
	APPROACH %	35%	48%	17%	23%	7%	69%	58%	38%	4%	4%	65%	31%	
	PEAK HR FACTOR		0.780			0.906			0.939			0.865		0.960
	APP/DEPART	128	/	402	348	/	54	447	/	274	263	/	456	0
PM	3:00 PM	13	7	0	8	12	29	16	47	10	1	58	5	206
	3:15 PM	11	15	7	5	11	21	12	55	14	5	43	7	206
	3:30 PM	8	4	4	5	10	38	28	56	13	4	45	2	217
	3:45 PM	9	9	4	8	9	26	18	64	9	5	52	2	215
	4:00 PM	9	9	5	10	14	29	24	53	11	0	68	3	235
	4:15 PM	16	5	0	4	12	37	24	60	11	9	50	3	231
	4:30 PM	13	15	0	4	18	39	37	55	17	5	48	2	253
	4:45 PM	11	12	7	7	13	33	31	83	16	7	60	6	286
	5:00 PM	11	8	3	6	11	34	28	68	11	7	52	5	244
	5:15 PM	13	12	4	9	12	28	36	69	12	4	63	4	266
	5:30 PM	9	13	5	4	7	33	39	64	8	3	75	7	267
	5:45 PM	11	10	5	5	9	44	41	66	10	3	68	9	281
	VOLUMES	134	119	44	75	138	391	334	740	142	53	682	55	2,907
	APPROACH %	45%	40%	15%	12%	23%	65%	27%	61%	12%	7%	86%	7%	
	APP/DEPART	297	/	508	604	/	333	1,216	/	859	790	/	1,207	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	44	45	19	26	43	128	134	284	47	21	250	22	1,063
	APPROACH %	41%	42%	18%	13%	22%	65%	29%	61%	10%	7%	85%	8%	
	PEAK HR FACTOR		0.900			0.929			0.894			0.862		0.929
	APP/DEPART	108	/	201	197	/	111	465	/	329	293	/	422	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	6:00 AM	0	0	2	2	4	0	0	2	2	4	0	0	0	0	0
	6:15 AM	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1
	6:30 AM	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2
	6:45 AM	0	1	0	3	4	0	1	0	2	3	0	0	0	1	1
	7:00 AM	1	1	0	4	6	1	1	0	2	4	0	0	0	2	2
	7:15 AM	0	0	1	6	7	0	0	1	4	5	0	0	0	2	2
	7:30 AM	1	2	2	2	7	1	0	2	2	5	0	2	0	0	2
	7:45 AM	10	0	4	2	16	4	0	4	2	10	6	0	0	0	6
	8:00 AM	2	3	0	11	16	2	3	0	11	16	0	0	0	0	0
	8:15 AM	1	2	0	6	9	1	2	0	6	9	0	0	0	0	0
	8:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:45 AM	1	0	1	1	3	0	0	1	1	2	1	0	0	0	1
	TOTAL	17	13	11	37	78	9	9	11	32	61	8	4	0	5	17
	AM BEGIN PEAK HR			7:15 AM			7	3	7	19	36					
PM	3:00 PM	0	1	0	4	5	0	1	0	4	5	0	0	0	0	0
	3:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	3:30 PM	0	1	1	1	3	0	1	1	1	3	0	0	0	0	0
	3:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	4:00 PM	0	0	1	2	3	0	0	0	0	0	0	0	1	2	3
	4:15 PM	1	1	0	1	3	1	0	0	0	1	0	1	0	1	2
	4:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	4:45 PM	0	0	0	3	3	0	0	0	3	3	0	0	0	0	0
	5:00 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	5:15 PM	1	0	1	0	2	1	0	0	0	1	0	0	1	0	1
	5:30 PM	0	1	0	2	3	0	0	0	2	2	0	1	0	0	1
	5:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	4	5	3	16	28	2	2	1	12	17	2	3	2	4	11
	PM BEGIN PEAK HR			4:45 PM			1	0	0	5	6					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T218

DATE: Tue, Sep 26, 23

LOCATION: Kahului
NORTH & SOUTH: Pomaikai St
EAST & WEST: W Papa Ave

PROJECT #: SC4129
LOCATION #: 4
CONTROL: STOP N

NOTES:
Queue EB AM

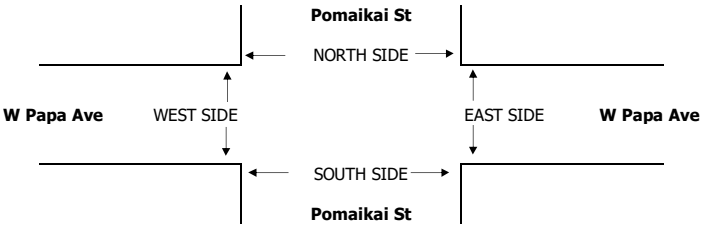
AM / PM / MD / OTHER / OTHER

N / W / E / S

		NORTHBOUND Pomaikai St			SOUTHBOUND Pomaikai St			EASTBOUND W Papa Ave			WESTBOUND W Papa Ave			
	LANES:	NL 0	NT X	NR 0	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 0	WT 1	WR X	TOTAL
AM	6:00 AM	2	0	6	0	0	0	0	42	2	5	40	0	97
AM	6:15 AM	4	0	2	0	0	0	0	52	2	1	38	0	99
AM	6:30 AM	6	0	5	0	0	0	0	80	3	0	68	0	162
AM	6:45 AM	6	0	4	0	0	0	0	98	4	3	65	0	180
AM	7:00 AM	11	0	7	0	0	0	0	88	3	2	125	0	236
AM	7:15 AM	7	0	7	0	0	0	0	103	13	3	131	0	264
AM	7:30 AM	7	0	2	0	0	0	0	105	7	2	115	0	238
AM	7:45 AM	4	0	4	0	0	0	0	105	9	3	99	0	224
AM	8:00 AM	7	0	6	0	0	0	0	113	11	3	96	0	236
AM	8:15 AM	2	0	3	0	0	0	0	73	1	2	70	0	151
AM	8:30 AM	3	0	4	0	0	0	0	42	4	3	55	0	111
AM	8:45 AM	1	0	2	0	0	0	0	53	3	3	49	0	111
AM	VOLUMES	60	0	52	0	0	0	0	954	62	30	951	0	2,109
AM	APPROACH %	54%	0%	46%	0%	0%	0%	0%	94%	6%	3%	97%	0%	
AM	APP/DEPART	112	/	0	0	/	92	1,016	/	1,006	981	/	1,011	0
AM	BEGIN PEAK HR		7:15 AM											
AM	VOLUMES	25	0	19	0	0	0	0	426	40	11	441	0	962
AM	APPROACH %	57%	0%	43%	0%	0%	0%	0%	91%	9%	2%	98%	0%	
AM	PEAK HR FACTOR		0.611			0.000			0.940			0.843		0.911
AM	APP/DEPART	44	/	0	0	/	51	466	/	445	452	/	466	0
PM	3:00 PM	6	0	4	0	0	0	0	70	4	5	95	0	184
PM	3:15 PM	3	0	3	0	0	0	0	76	8	3	71	0	164
PM	3:30 PM	8	0	7	0	0	0	0	94	6	10	82	0	207
PM	3:45 PM	4	0	1	0	0	0	0	82	10	3	83	0	183
PM	4:00 PM	7	0	4	0	0	0	0	84	6	9	97	0	207
PM	4:15 PM	2	0	4	0	0	0	0	93	11	3	100	0	213
PM	4:30 PM	8	0	3	0	0	0	0	112	10	4	96	0	233
PM	4:45 PM	6	0	0	0	0	0	0	131	10	7	92	0	246
PM	5:00 PM	5	0	6	0	0	0	0	94	8	7	93	0	213
PM	5:15 PM	5	0	3	0	0	0	0	115	15	4	100	0	242
PM	5:30 PM	3	0	7	0	0	0	0	103	7	10	104	0	234
PM	5:45 PM	4	0	5	0	0	0	0	109	1	7	113	0	239
PM	VOLUMES	61	0	47	0	0	0	0	1,163	96	72	1,126	0	2,565
PM	APPROACH %	56%	0%	44%	0%	0%	0%	0%	92%	8%	6%	94%	0%	
PM	APP/DEPART	108	/	0	0	/	168	1,259	/	1,210	1,198	/	1,187	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	19	0	16	0	0	0	0	443	40	28	389	0	935
PM	APPROACH %	54%	0%	46%	0%	0%	0%	0%	92%	8%	7%	93%	0%	
PM	PEAK HR FACTOR		0.795			0.000			0.856			0.914		0.950
PM	APP/DEPART	35	/	0	0	/	68	483	/	459	417	/	408	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	6:00 AM	1	0	3	0	4	0	0	2	0	2	1	0	1	0	2
AM	6:15 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
AM	6:30 AM	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2
AM	6:45 AM	0	5	0	0	5	0	2	0	0	2	0	3	0	0	3
AM	7:00 AM	0	3	3	0	6	0	2	3	0	5	0	1	0	0	1
AM	7:15 AM	0	8	5	0	13	0	4	5	0	9	0	4	0	0	4
AM	7:30 AM	0	6	4	0	10	0	1	3	0	4	0	5	1	0	6
AM	7:45 AM	6	5	9	0	20	0	5	9	0	14	6	0	0	0	6
AM	8:00 AM	0	8	10	0	18	0	8	10	0	18	0	0	0	0	0
AM	8:15 AM	0	1	3	0	4	0	1	3	0	4	0	0	0	0	0
AM	8:30 AM	0	2	1	0	3	0	2	1	0	3	0	0	0	0	0
AM	8:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
AM	TOTAL	9	41	38	0	88	0	26	36	0	62	9	15	2	0	26
	AM BEGIN PEAK HR			7:15 AM			0	18	27	0	45					
PM	3:00 PM	0	4	0	0	4	0	2	0	0	2	0	2	0	0	2
PM	3:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	3:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
PM	3:45 PM	0	1	2	0	3	0	0	0	0	0	0	1	2	0	3
PM	4:00 PM	0	1	2	0	3	0	1	1	0	2	0	0	1	0	1
PM	4:15 PM	1	3	1	0	5	1	1	1	0	3	0	2	0	0	2
PM	4:30 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0
PM	4:45 PM	0	3	3	0	6	0	3	2	0	5	0	0	1	0	1
PM	5:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
PM	5:15 PM	0	3	3	0	6	0	0	1	0	1	0	3	2	0	5
PM	5:30 PM	0	1	2	0	3	0	0	2	0	2	0	1	0	0	1
PM	5:45 PM	0	1	2	0	3	0	1	2	0	3	0	0	0	0	0
PM	TOTAL	1	21	17	0	39	1	11	11	0	23	0	10	6	0	16
	PM BEGIN PEAK HR			4:45 PM			0	3	5	0	8					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T218

DATE: Tue, Sep 26, 23

LOCATION: Kahului
NORTH & SOUTH: Honowai St
EAST & WEST: W Papa Ave

PROJECT #: SC4129
LOCATION #: 3
CONTROL: STOP N

NOTES:

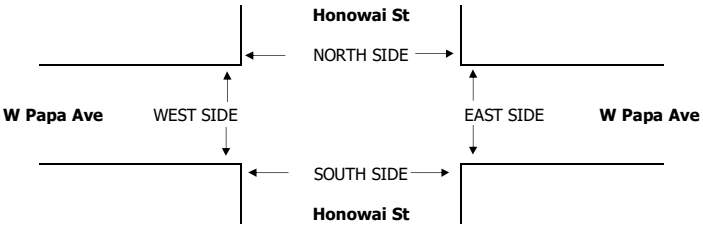
AM / PM / MD / OTHER / OTHER

N / W / E / S

		NORTHBOUND Honowai St			SOUTHBOUND Honowai St			EASTBOUND W Papa Ave			WESTBOUND W Papa Ave			
	LANES:	NL 0	NT X	NR 0	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 0	WT 1	WR X	TOTAL
AM	6:00 AM	2	0	5	0	0	0	0	40	1	1	41	0	90
	6:15 AM	1	0	4	0	0	0	0	51	3	4	39	0	102
	6:30 AM	6	0	8	0	0	0	0	76	3	2	70	0	165
	6:45 AM	1	0	12	0	0	0	0	88	3	4	70	0	178
	7:00 AM	3	0	14	0	0	0	0	76	7	3	131	0	234
	7:15 AM	4	0	16	0	0	0	0	106	4	8	129	0	267
	7:30 AM	9	0	9	0	0	0	0	108	5	12	115	0	258
	7:45 AM	7	0	10	0	0	0	0	102	3	8	94	0	224
	8:00 AM	2	0	14	0	0	0	0	108	5	6	99	0	234
	8:15 AM	4	0	2	0	0	0	0	64	6	7	65	0	148
	8:30 AM	3	0	4	0	0	0	0	40	5	4	54	0	110
	8:45 AM	4	0	6	0	0	0	0	51	3	6	45	0	115
	VOLUMES	46	0	104	0	0	0	0	910	48	65	952	0	2,125
	APPROACH %	31%	0%	69%	0%	0%	0%	0%	95%	5%	6%	94%	0%	
	APP/DEPART	150	/	0	0	/	112	958	/	1,015	1,017	/	998	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	22	0	49	0	0	0	0	424	17	34	437	0	983
	APPROACH %	31%	0%	69%	0%	0%	0%	0%	96%	4%	7%	93%	0%	
	PEAK HR FACTOR		0.888			0.000			0.976			0.859		0.920
	APP/DEPART	71	/	0	0	/	51	441	/	473	471	/	459	0
PM	3:00 PM	4	0	7	0	0	0	0	70	3	9	89	0	182
	3:15 PM	3	0	4	0	0	0	0	80	3	4	70	0	164
	3:30 PM	4	0	4	0	0	0	0	96	1	5	85	0	195
	3:45 PM	3	0	6	0	0	0	0	83	6	6	82	0	186
	4:00 PM	3	0	7	0	0	0	0	82	3	10	96	0	201
	4:15 PM	2	0	5	0	0	0	0	99	5	7	92	0	210
	4:30 PM	3	0	5	0	0	0	0	115	5	15	88	0	231
	4:45 PM	4	0	8	0	0	0	0	135	4	18	78	0	247
	5:00 PM	3	0	4	0	0	0	0	98	3	9	93	0	210
	5:15 PM	5	0	16	0	0	0	0	112	3	14	88	0	238
	5:30 PM	6	0	10	0	0	0	0	102	6	10	98	0	232
	5:45 PM	7	0	6	0	0	0	0	108	7	6	109	0	243
	VOLUMES	47	0	82	0	0	0	0	1,180	49	113	1,068	0	2,539
	APPROACH %	36%	0%	64%	0%	0%	0%	0%	96%	4%	10%	90%	0%	
	APP/DEPART	129	/	0	0	/	162	1,229	/	1,262	1,181	/	1,115	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	18	0	38	0	0	0	0	447	16	51	357	0	927
	APPROACH %	32%	0%	68%	0%	0%	0%	0%	97%	3%	13%	88%	0%	
	PEAK HR FACTOR		0.667			0.000			0.833			0.944		0.938
	APP/DEPART	56	/	0	0	/	67	463	/	485	408	/	375	0

U-TURNS

	NB	SB	EB	WB	TTL
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	1	1
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	1	1
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	6:00 AM	1	1	0	2	4	0	1	0	2	3	1	0	0	0	1
	6:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	6:30 AM	0	3	0	1	4	0	1	0	1	2	0	2	0	0	2
	6:45 AM	0	4	0	0	4	0	1	0	0	1	0	3	0	0	3
	7:00 AM	0	4	0	0	4	0	2	0	0	2	0	2	0	0	2
	7:15 AM	0	5	0	4	9	0	1	0	3	4	0	4	0	1	5
	7:30 AM	0	6	0	3	9	0	3	0	2	5	0	3	0	1	4
	7:45 AM	6	2	0	3	11	0	1	0	3	4	6	1	0	0	7
	8:00 AM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	0
	8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:30 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	8:45 AM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
	TOTAL	8	31	0	14	53	0	15	0	12	27	8	16	0	2	26
	AM BEGIN PEAK HR			7:15 AM			0	6	0	9	15					
PM	3:00 PM	0	2	0	1	3	0	2	0	1	3	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
	4:15 PM	1	2	0	0	3	1	0	0	0	1	0	2	0	0	2
	4:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	4:45 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	5:00 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	5:15 PM	0	2	0	1	3	0	0	0	1	1	0	2	0	0	2
	5:30 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	5:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	1	17	0	4	22	1	8	0	4	13	0	9	0	0	9
	PM BEGIN PEAK HR			4:45 PM			0	4	0	1	5					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Sep 26, 23

LOCATION: Kahului
NORTH & SOUTH: Molokai Hema St
EAST & WEST: W Papa Ave

PROJECT #: SC4129
LOCATION #: 5
CONTROL: STOP S

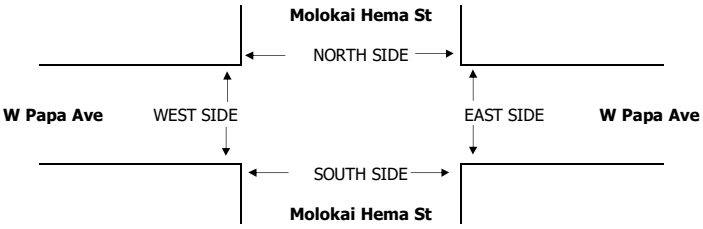
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Molokai Hema St			SOUTHBOUND Molokai Hema St			EASTBOUND S Papa Ave			WESTBOUND W Papa Ave			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	6:00 AM	0	0	0	3	0	0	0	40	0	0	44	1	88
	6:15 AM	0	0	0	0	0	0	0	57	0	0	40	0	97
	6:30 AM	0	0	0	3	0	3	1	68	0	0	74	1	150
	6:45 AM	0	0	0	2	0	2	1	93	0	0	83	1	182
	7:00 AM	0	0	0	0	0	4	6	90	0	0	123	3	226
	7:15 AM	0	0	0	1	0	7	14	106	0	0	142	2	272
	7:30 AM	0	0	0	0	0	11	12	118	0	0	126	6	273
	7:45 AM	0	0	0	5	0	6	21	111	0	0	98	6	247
	8:00 AM	0	0	0	0	0	7	14	114	0	0	97	6	238
	8:15 AM	0	0	0	1	0	4	1	65	0	0	72	1	144
	8:30 AM	0	0	0	4	0	3	0	43	0	0	56	1	107
	8:45 AM	0	0	0	1	0	2	1	54	0	0	52	0	110
	VOLUMES	0	0	0	20	0	49	71	959	0	0	1,007	28	2,134
	APPROACH %	0%	0%	0%	29%	0%	71%	7%	93%	0%	0%	97%	3%	
	APP/DEPART	0	/	99	69	/	0	1,030	/	979	1,035	/	1,056	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	6	0	31	61	449	0	0	463	20	1,030
	APPROACH %	0%	0%	0%	16%	0%	84%	12%	88%	0%	0%	96%	4%	
	PEAK HR FACTOR		0.000			0.841			0.966			0.839		0.943
	APP/DEPART	0	/	81	37	/	0	510	/	455	483	/	494	0
PM	3:00 PM	0	0	0	0	0	0	2	78	0	0	94	0	174
	3:15 PM	0	0	0	2	0	0	2	75	0	0	73	1	153
	3:30 PM	0	0	0	0	0	2	4	102	0	0	76	2	186
	3:45 PM	0	0	0	0	0	3	1	92	0	0	86	0	182
	4:00 PM	0	0	0	0	0	3	3	89	0	0	102	3	200
	4:15 PM	0	0	0	1	0	2	1	103	0	0	98	1	206
	4:30 PM	0	0	0	1	0	1	3	121	0	0	89	2	217
	4:45 PM	0	0	0	1	0	3	5	146	0	0	75	4	234
	5:00 PM	0	0	0	0	0	2	5	93	0	0	101	0	201
	5:15 PM	0	0	0	11	0	3	4	110	0	0	90	1	219
	5:30 PM	0	0	0	1	0	3	4	107	0	0	105	1	221
	5:45 PM	0	0	0	2	0	2	4	118	0	0	115	1	242
	VOLUMES	0	0	0	19	0	24	38	1,234	0	0	1,104	16	2,435
	APPROACH %	0%	0%	0%	44%	0%	56%	3%	97%	0%	0%	99%	1%	
	APP/DEPART	0	/	54	43	/	0	1,272	/	1,253	1,120	/	1,128	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	14	0	10	17	428	0	0	411	3	883
	APPROACH %	0%	0%	0%	58%	0%	42%	4%	96%	0%	0%	99%	1%	
	PEAK HR FACTOR		0.000			0.429			0.912			0.892		0.912
	APP/DEPART	0	/	20	24	/	0	445	/	442	414	/	421	0

U-TURNS

	NB	SB	EB	WB	TTL
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N LEG	S LEG	E LEG	W LEG	TOTAL	N LEG	S LEG	E LEG	W LEG	TOTAL	NL	SL	EL	WL	TOTAL
AM	6:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	6:45 AM	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1
	7:00 AM	1	0	2	0	3	1	0	1	0	2	0	0	1	0	1
	7:15 AM	3	0	6	0	9	3	0	4	0	7	0	0	2	0	2
	7:30 AM	3	0	3	0	6	1	0	3	0	4	2	0	0	0	2
	7:45 AM	10	0	3	0	13	2	0	2	0	4	8	0	1	0	9
	8:00 AM	4	0	7	0	11	1	0	5	0	6	3	0	2	0	5
	8:15 AM	1	1	2	0	4	1	0	0	0	1	0	1	2	0	3
	8:30 AM	1	1	1	0	3	1	1	1	0	3	0	0	0	0	0
	8:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	TOTAL	28	2	25	0	55	12	1	17	0	30	16	1	8	0	25
	AM BEGIN PEAK HR			7:15 AM			7	0	14	0	21					
PM	3:00 PM	0	0	6	0	6	0	0	6	0	6	0	0	0	0	0
	3:15 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	3:30 PM	2	0	3	0	5	0	0	2	0	2	2	0	1	0	3
	3:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	4:00 PM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	4:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	4:30 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:00 PM	2	0	1	0	3	1	0	1	0	2	1	0	0	0	1
	5:15 PM	1	0	2	0	3	1	0	0	0	1	0	0	2	0	2
	5:30 PM	1	0	5	0	6	0	0	2	0	2	1	0	3	0	4
	5:45 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	TOTAL	12	0	22	0	34	6	0	14	0	20	6	0	8	0	14
	PM BEGIN PEAK HR			5:00 PM			2	0	4	0	6					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T218

DATE: Tue, Sep 26, 23

LOCATION: Kahului
NORTH & SOUTH: S Kamehameha Ave
EAST & WEST: S Papa Ave

PROJECT #: SC4129
LOCATION #: 2
CONTROL: SIGNAL

NOTES:
Queue SB AM

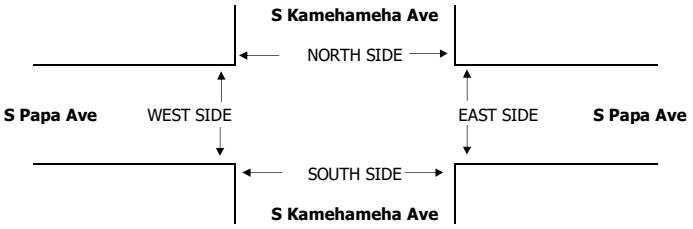
AM / PM / MD / OTHER / OTHER

N / W / E / S

		NORTHBOUND S Kamehameha Ave			SOUTHBOUND S Kamehameha Ave			EASTBOUND S Papa Ave			WESTBOUND S Papa Ave			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
AM	6:00 AM	12	14	9	3	29	6	10	28	24	16	24	3	178
	6:15 AM	9	24	13	5	32	5	11	41	31	20	20	4	215
	6:30 AM	40	39	19	8	35	3	11	40	39	30	43	4	311
	6:45 AM	22	54	28	10	41	15	15	57	47	39	43	3	374
	7:00 AM	26	55	27	4	45	24	26	69	42	49	68	8	443
	7:15 AM	35	92	38	8	49	28	41	74	41	38	90	18	552
	7:30 AM	34	81	42	10	43	18	39	82	31	45	86	11	522
	7:45 AM	27	88	42	8	37	16	35	77	40	37	57	6	470
	8:00 AM	20	53	50	6	58	14	20	74	32	47	53	10	437
	8:15 AM	18	46	15	8	45	12	16	40	29	26	40	11	306
	8:30 AM	18	35	13	7	40	9	5	24	31	13	41	5	241
	8:45 AM	16	47	17	11	38	5	7	26	26	18	32	4	247
	VOLUMES	277	628	313	88	492	155	236	632	413	378	597	87	4,296
	APPROACH %	23%	52%	26%	12%	67%	21%	18%	49%	32%	36%	56%	8%	
	APP/DEPART	1,218	/	951	735	/	1,283	1,281	/	1,033	1,062	/	1,029	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	122	316	149	30	174	86	141	302	154	169	301	43	1,987
	APPROACH %	21%	54%	25%	10%	60%	30%	24%	51%	26%	33%	59%	8%	
	PEAK HR FACTOR		0.889			0.853			0.957			0.878		0.900
	APP/DEPART	587	/	500	290	/	497	597	/	481	513	/	509	0
PM	3:00 PM	25	68	30	12	67	11	7	37	30	27	59	9	382
	3:15 PM	36	70	23	7	70	11	14	47	39	20	44	6	387
	3:30 PM	52	71	30	11	82	19	13	64	48	33	41	4	468
	3:45 PM	46	59	26	12	68	11	14	57	58	31	47	9	438
	4:00 PM	38	65	35	6	73	14	8	52	47	34	70	5	447
	4:15 PM	49	62	35	12	78	25	12	57	46	37	59	9	481
	4:30 PM	43	72	42	12	70	17	20	73	43	24	56	8	480
	4:45 PM	54	57	55	8	96	10	15	84	40	31	40	5	495
	5:00 PM	44	48	33	8	85	19	6	58	35	32	66	4	438
	5:15 PM	41	57	45	11	52	16	16	58	47	25	63	6	437
	5:30 PM	45	39	38	8	52	24	10	66	46	40	61	7	436
	5:45 PM	39	56	44	10	45	17	12	67	31	35	70	8	434
	VOLUMES	512	724	436	117	838	194	147	720	510	369	676	80	5,323
	APPROACH %	31%	43%	26%	10%	73%	17%	11%	52%	37%	33%	60%	7%	
	APP/DEPART	1,672	/	951	1,149	/	1,717	1,377	/	1,273	1,125	/	1,382	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	184	256	167	38	317	66	55	266	176	126	225	27	1,903
	APPROACH %	30%	42%	28%	9%	75%	16%	11%	54%	35%	33%	60%	7%	
	PEAK HR FACTOR		0.914			0.915			0.894			0.867		0.961
	APP/DEPART	607	/	338	421	/	619	497	/	471	378	/	475	0

U-TURNS

	NB	SB	EB	WB	TTL
	0	0	0	0	
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0



PEDESTRIAN + BIKE CROSSINGS

		N LEG	S LEG	E LEG	W LEG	TOTAL
AM	6:00 AM	1	0	0	0	1
	6:15 AM	1	0	0	0	1
	6:30 AM	1	4	0	0	5
	6:45 AM	0	5	0	0	5
	7:00 AM	1	7	0	1	9
	7:15 AM	0	9	2	1	12
	7:30 AM	3	3	2	0	8
	7:45 AM	9	2	1	4	16
	8:00 AM	4	6	1	1	12
	8:15 AM	0	2	1	0	3
	8:30 AM	0	1	0	0	1
	8:45 AM	0	1	0	0	1
	TOTAL	20	40	7	7	74
	AM BEGIN PEAK HR			7:00 AM		
PM	3:00 PM	0	8	0	0	8
	3:15 PM	1	0	1	0	2
	3:30 PM	0	2	1	0	3
	3:45 PM	0	2	0	0	2
	4:00 PM	0	1	0	0	1
	4:15 PM	3	2	0	0	5
	4:30 PM	0	0	1	0	1
	4:45 PM	0	1	0	0	1
	5:00 PM	1	1	0	2	4
	5:15 PM	0	0	0	0	0
	5:30 PM	0	1	0	0	1
	5:45 PM	0	1	0	1	2
	TOTAL	5	19	3	3	30
	PM BEGIN PEAK HR			4:00 PM		

PEDESTRIAN CROSSINGS

	N LEG	S LEG	E LEG	W LEG	TOTAL
AM 6:00 AM	0	0	0	0	0
6:15 AM	1	0	0	0	1
6:30 AM	1	1	0	0	2
6:45 AM	0	2	0	0	2
7:00 AM	1	3	0	1	5
7:15 AM	0	3	1	1	5
7:30 AM	1	2	1	0	4
7:45 AM	2	1	0	2	5
8:00 AM	1	5	0	0	6
8:15 AM	0	1	1	0	2
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
TOTAL	7	19	3	4	33
AM BEGIN PEAK HR	4	9	2	4	19
PM 3:00 PM	0	8	0	0	8
3:15 PM	1	0	0	0	1
3:30 PM	0	1	0	0	1
3:45 PM	0	2	0	0	2
4:00 PM	0	0	0	0	0
4:15 PM	2	0	0	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	1	0	0	1
5:00 PM	1	0	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1
5:45 PM	0	0	0	1	1
TOTAL	4	13	0	1	18
PM BEGIN PEAK HR	2	1	0	0	3

BICYCLE CROSSINGS

	NL	SL	EL	WL	TOTAL
AM 6:00 AM	1	0	0	0	1
6:15 AM	0	0	0	0	0
6:30 AM	0	3	0	0	3
6:45 AM	0	3	0	0	3
7:00 AM	0	4	0	0	4
7:15 AM	0	6	1	0	7
7:30 AM	2	1	1	0	4
7:45 AM	7	1	1	2	11
8:00 AM	3	1	1	1	6
8:15 AM	0	1	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	1	0	0	1
TOTAL	13	21	4	3	41
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	1	0	1
3:30 PM	0	1	1	0	2
3:45 PM	0	0	0	0	0
4:00 PM	0	1	0	0	1
4:15 PM	1	2	0	0	3
4:30 PM	0	0	1	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	1	0	2	3
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL	1	6	3	2	12

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR AUTOMOBILES AT SIGNALIZED INTERSECTIONS

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most Cycles fail to clear the queue.

A lane group can incur a delay less than 80s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicated that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80s/veh represents failure from a delay perspective).

"Highway Capacity Manual," Transportation Research Board, 2016.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE (LOS) CRITERIA FOR AUTOMOBILES AT A TWO-WAY STOP CONTROLLED (TWSC) INTERSECTIONS

LOS for a TWSC intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns by using criteria shown below. Major-street through vehicles are assumed to experience zero delay. LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The following lists the LOS criteria for a TWSC intersection:

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0.

LOS B describes operations with a control delay between 10s/veh and 15s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS C describes operations with a control delay between 15s/veh and 25s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS D describes operations with a control delay between 25s/veh and 35s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS E describes operations with a control delay between 35s/veh and 50s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS F describes operations with a control exceeding 50s/veh and a volume-to-capacity ratio no greater than 1.0 or when the volume-to-capacity ratio exceeds 1.0, regardless of the measurement of the control delay.

"Highway Capacity Manual," Transportation Research Board, 2016.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE (LOS) CRITERIA FOR AUTOMOBILES AT AN ALL-WAY STOP-CONTROLLED (AWSC) INTERSECTIONS

AWSC intersections require every vehicle to stop at the intersection before proceeding. LOS for an AWSC intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each approach by using the criteria below. LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The following lists the LOS criteria for an AWSC intersection:

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0.

LOS B describes operations with a control delay between 10s/veh and 15s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS C describes operations with a control delay between 15s/veh and 25s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS D describes operations with a control delay between 25s/veh and 35s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS E describes operations with a control delay between 35s/veh and 50s/veh and a volume-to-capacity ratio no greater than 1.0.

LOS F describes operations with a control exceeding 50s/veh and a volume-to-capacity ratio no greater than 1.0 or when the volume-to-capacity ratio exceeds 1.0, regardless of the measurement of the control delay.

"Highway Capacity Manual," Transportation Research Board, 2016.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS

Intersection	
Intersection Delay, s/veh	22.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	259	171	17	11	170	82	45	61	22	81	26	241
Future Vol, veh/h	259	171	17	11	170	82	45	61	22	81	26	241
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	270	178	18	11	177	85	47	64	23	84	27	251
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	31.1	15.6	12.9	19.4
HCM LOS	D	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	58%	4%	23%
Vol Thru, %	48%	38%	65%	7%
Vol Right, %	17%	4%	31%	69%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	447	263	348
LT Vol	45	259	11	81
Through Vol	61	171	170	26
RT Vol	22	17	82	241
Lane Flow Rate	133	466	274	362
Geometry Grp	1	1	1	1
Degree of Util (X)	0.267	0.812	0.489	0.628
Departure Headway (Hd)	7.198	6.277	6.432	6.236
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	496	573	556	576
Service Time	5.295	4.345	4.514	4.308
HCM Lane V/C Ratio	0.268	0.813	0.493	0.628
HCM Control Delay	12.9	31.1	15.6	19.4
HCM Lane LOS	B	D	C	C
HCM 95th-tile Q	1.1	8.1	2.7	4.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	40	11	441	25	19
Future Vol, veh/h	426	40	11	441	25	19
Conflicting Peds, #/hr	0	18	18	0	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	468	44	12	485	27	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	530	0	1017	535
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	509	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1037	-	263	545
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1019	-	254	522
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	1019	-
HCM Lane V/C Ratio	0.148	-	-	0.012	-
HCM Control Delay (s)	18	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	424	17	34	437	22	49
Future Vol, veh/h	424	17	34	437	22	49
Conflicting Peds, #/hr	0	6	6	0	9	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	18	37	475	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	485	0	1034	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	558	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1078	-	257	589
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1072	-	241	586
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	541	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	406	-	-	1072	-
HCM Lane V/C Ratio	0.19	-	-	0.034	-
HCM Control Delay (s)	15.9	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	449	463	20	6	31
Future Vol, veh/h	61	449	463	20	6	31
Conflicting Peds, #/hr	7	0	0	7	14	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	478	493	21	6	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	521	0	-	0	1133	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	622	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1045	-	-	-	224	563
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1038	-	-	-	202	559
Mov Cap-2 Maneuver	-	-	-	-	202	-
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1038	-	-	-	434
HCM Lane V/C Ratio	0.063	-	-	-	0.091
HCM Control Delay (s)	8.7	0	-	-	14.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

HCM 6th Signalized Intersection Summary
16: S. Kamehameha Ave & W. Papa Ave

10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	307	144	167	286	45	116	314	172	32	187	76
Future Volume (veh/h)	135	307	144	167	286	45	116	314	172	32	187	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	150	341	160	186	318	50	129	349	191	36	208	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	501	416	400	536	446	385	476	401	260	399	336
Arrive On Green	0.09	0.27	0.27	0.10	0.29	0.29	0.08	0.25	0.25	0.04	0.21	0.21
Sat Flow, veh/h	1781	1870	1552	1781	1870	1555	1781	1870	1576	1781	1870	1574
Grp Volume(v), veh/h	150	341	160	186	318	50	129	349	191	36	208	84
Grp Sat Flow(s),veh/h/ln	1781	1870	1552	1781	1870	1555	1781	1870	1576	1781	1870	1574
Q Serve(g_s), s	3.5	9.7	5.0	4.4	8.7	1.4	3.3	10.2	6.1	0.9	5.9	2.6
Cycle Q Clear(g_c), s	3.5	9.7	5.0	4.4	8.7	1.4	3.3	10.2	6.1	0.9	5.9	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	501	416	400	536	446	385	476	401	260	399	336
V/C Ratio(X)	0.36	0.68	0.38	0.46	0.59	0.11	0.33	0.73	0.48	0.14	0.52	0.25
Avail Cap(c_a), veh/h	442	879	730	513	1005	835	425	848	714	342	816	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	19.5	17.8	14.1	18.3	15.7	16.4	20.4	18.8	17.6	20.7	19.5
Incr Delay (d2), s/veh	0.5	1.6	0.6	0.8	1.1	0.1	0.5	2.2	0.9	0.2	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.1	1.7	1.6	3.6	0.5	1.3	4.4	2.1	0.4	2.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	21.2	18.4	14.9	19.3	15.8	16.9	22.6	19.7	17.8	21.8	19.9
LnGrp LOS	B	C	B	B	B	B	B	C	B	B	C	B
Approach Vol, veh/h		651			554			669			328	
Approach Delay, s/veh		19.0			17.5			20.7			20.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	20.9	9.7	17.7	10.1	22.1	7.2	20.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	6.4	11.7	5.3	7.9	5.5	10.7	2.9	12.2
Green Ext Time (p_c), s	0.2	2.4	0.0	1.3	0.0	2.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

HCM 6th AWSC
7: Lono Ave & W. Papa Ave

10/05/2023

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	284	47	21	250	22	44	45	19	26	43	128
Future Vol, veh/h	134	284	47	21	250	22	44	45	19	26	43	128
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	144	305	51	23	269	24	47	48	20	28	46	138
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25.4	14.9	11.7	12.7
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	41%	29%	7%	13%
Vol Thru, %	42%	61%	85%	22%
Vol Right, %	18%	10%	8%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	465	293	197
LT Vol	44	134	21	26
Through Vol	45	284	250	43
RT Vol	19	47	22	128
Lane Flow Rate	116	500	315	212
Geometry Grp	1	1	1	1
Degree of Util (X)	0.218	0.778	0.514	0.362
Departure Headway (Hd)	6.754	5.599	5.873	6.158
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	531	650	618	583
Service Time	4.811	3.611	3.889	4.207
HCM Lane V/C Ratio	0.218	0.769	0.51	0.364
HCM Control Delay	11.7	25.4	14.9	12.7
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	0.8	7.4	2.9	1.6

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	443	40	28	389	19	16
Future Vol, veh/h	443	40	28	389	19	16
Conflicting Peds, #/hr	0	3	3	0	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	42	29	409	20	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	511	0	957	495
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1054	-	286	575
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1051	-	275	571
Mov Cap-2 Maneuver	-	-	-	-	275	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	608	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	16.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	1051	-
HCM Lane V/C Ratio	0.102	-	-	0.028	-
HCM Control Delay (s)	16.1	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	447	16	51	357	18	38
Future Vol, veh/h	447	16	51	357	18	38
Conflicting Peds, #/hr	0	4	4	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	476	17	54	380	19	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	497	0	978	489
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1067	-	278	579
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1063	-	259	577
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	414	-	-	1063	-
HCM Lane V/C Ratio	0.144	-	-	0.051	-
HCM Control Delay (s)	15.2	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

HCM 6th TWSC
14: W. Papa Ave & Molokai Hema St 10/05/2023

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	456	371	6	13	11
Future Vol, veh/h	18	456	371	6	13	11
Conflicting Peds, #/hr	2	0	0	2	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	490	399	6	14	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	407	0	-	0	935	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1152	-	-	-	295	647
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1150	-	-	-	287	646
Mov Cap-2 Maneuver	-	-	-	-	287	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	589	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1150	-	-	-	385
HCM Lane V/C Ratio	0.017	-	-	-	0.067
HCM Control Delay (s)	8.2	0	-	-	15
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Capacity Analysis
16: S. Kamehameha Ave & W. Papa Ave 10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	266	168	128	230	22	184	201	171	35	285	69
Future Volume (veh/h)	47	266	168	128	230	22	184	201	171	35	285	69
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	292	185	141	253	24	202	221	188	38	313	76
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	378	422	356	358	491	414	387	545	462	391	420	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.23	0.23	0.09	0.26	0.26	0.11	0.29	0.29	0.04	0.22	0.22
Unsig. Movement Delay												
Ln Grp Delay, s/veh	15.5	22.0	20.2	15.8	18.5	15.5	15.8	16.4	16.5	15.6	22.9	18.0
Ln Grp LOS	B	C	C	B	B	B	B	B	B	B	C	B
Approach Vol, veh/h		529			418			611			427	
Approach Delay, s/veh		20.7			17.4			16.3			21.4	
Approach LOS		C			B			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.8	17.7	11.0	17.6	7.8	19.7	7.2	21.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Allow Headway (MAH), s	3.8	4.8	3.8	5.0	3.8	5.1	3.8	4.7
Max Q Clear (g_c+I1), s	5.3	10.0	6.7	10.7	3.2	8.5	2.9	7.3
Green Ext Time (g_e), s	0.1	2.2	0.0	1.8	0.0	1.5	0.0	1.8
Prob of Phs Call (p_c)	0.89	1.00	0.96	1.00	0.56	1.00	0.45	1.00
Prob of Max Out (p_x)	0.45	0.02	1.00	0.03	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		1781		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1578		1585		1579		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	141	0	202	0	52	0	38	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1781	0	1781	0
Q Serve Time (g_s), s	3.3	0.0	4.7	0.0	1.2	0.0	0.9	0.0
Cycle Q Clear Time (g_c), s	3.3	0.0	4.7	0.0	1.2	0.0	0.9	0.0
Perm LT Sat Flow (s_l), veh/h/ln	916	0	995	0	1099	0	977	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	12.7	0.0	13.3	0.0	12.7	0.0	12.6	0.0
Perm LT Serve Time (g_u), s	4.6	0.0	3.8	0.0	8.3	0.0	11.0	0.0
Perm LT Q Serve Time (g_ps), s	1.5	0.0	2.4	0.0	0.2	0.0	0.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	358	0	387	0	378	0	391	0
V/C Ratio (X)	0.39	0.00	0.52	0.00	0.14	0.00	0.10	0.00
Avail Cap (c_a), veh/h	521	0	387	0	481	0	479	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	15.1	0.0	14.6	0.0	15.4	0.0	15.5	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.3	0.0	0.2	0.0	0.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	15.8	0.0	15.8	0.0	15.5	0.0	15.6	0.0
1st-Term Q (Q1), veh/ln	1.2	0.0	1.7	0.0	0.4	0.0	0.3	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.3	0.0	1.8	0.0	0.5	0.0	0.3	0.0
%ile Storage Ratio (RQ%)	0.32	0.00	0.45	0.00	0.12	0.00	0.09	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	292	0	313	0	253	0	221
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	8.0	0.0	8.7	0.0	6.5	0.0	5.3
Cycle Q Clear Time (g_c), s	0.0	8.0	0.0	8.7	0.0	6.5	0.0	5.3
Lane Grp Cap (c), veh/h	0	422	0	420	0	491	0	545
V/C Ratio (X)	0.00	0.69	0.00	0.75	0.00	0.52	0.00	0.41
Avail Cap (c_a), veh/h	0	934	0	867	0	1067	0	901
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	19.9	0.0	20.3	0.0	17.6	0.0	16.0
Incr Delay (d2), s/veh	0.0	2.0	0.0	2.7	0.0	0.8	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.0	0.0	22.9	0.0	18.5	0.0	16.4
1st-Term Q (Q1), veh/ln	0.0	3.2	0.0	3.5	0.0	2.5	0.0	2.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.3	0.0	0.1	0.0	0.1

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.4	0.0	3.8	0.0	2.6	0.0	2.1
%ile Storage Ratio (RQ%)	0.00	0.29	0.00	0.29	0.00	0.23	0.00	0.11
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	185	0	76	0	24	0	188
Grp Sat Flow (s), veh/h/ln	0	1578	0	1585	0	1579	0	1585
Q Serve Time (g_s), s	0.0	5.8	0.0	2.2	0.0	0.6	0.0	5.3
Cycle Q Clear Time (g_c), s	0.0	5.8	0.0	2.2	0.0	0.6	0.0	5.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	356	0	356	0	414	0	462
V/C Ratio (X)	0.00	0.52	0.00	0.21	0.00	0.06	0.00	0.41
Avail Cap (c_a), veh/h	0	788	0	735	0	901	0	763
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	19.0	0.0	17.7	0.0	15.5	0.0	16.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.3	0.0	0.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.2	0.0	18.0	0.0	15.5	0.0	16.5
1st-Term Q (Q1), veh/ln	0.0	1.9	0.0	0.7	0.0	0.2	0.0	1.7
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.0	0.0	0.8	0.0	0.2	0.0	1.8
%ile Storage Ratio (RQ%)	0.00	0.52	0.00	0.19	0.00	0.05	0.00	0.46
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		18.8
HCM 6th LOS		B

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2025 PEAK HOUR TRAFFIC
ANALYSIS WITHOUT PROJECT

Intersection	
Intersection Delay, s/veh	23.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	264	174	17	11	173	84	45	61	22	83	27	246
Future Vol, veh/h	264	174	17	11	173	84	45	61	22	83	27	246
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	275	181	18	11	180	88	47	64	23	86	28	256
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	34	16.2	13.2	20.5
HCM LOS	D	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	58%	4%	23%
Vol Thru, %	48%	38%	65%	8%
Vol Right, %	17%	4%	31%	69%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	455	268	356
LT Vol	45	264	11	83
Through Vol	61	174	173	27
RT Vol	22	17	84	246
Lane Flow Rate	133	474	279	371
Geometry Grp	1	1	1	1
Degree of Util (X)	0.275	0.836	0.505	0.65
Departure Headway (Hd)	7.423	6.349	6.517	6.309
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	487	569	547	567
Service Time	5.423	4.431	4.617	4.395
HCM Lane V/C Ratio	0.273	0.833	0.51	0.654
HCM Control Delay	13.2	34	16.2	20.5
HCM Lane LOS	B	D	C	C
HCM 95th-tile Q	1.1	8.7	2.8	4.7

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	435	40	11	450	25	19
Future Vol, veh/h	435	40	11	450	25	19
Conflicting Peds, #/hr	0	18	18	0	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	478	44	12	495	27	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	540	0	1037	545
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	519	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1028	-	256	538
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1010	-	248	515
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	320	-	-	1010	-
HCM Lane V/C Ratio	0.151	-	-	0.012	-
HCM Control Delay (s)	18.2	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	432	17	34	446	22	49
Future Vol, veh/h	432	17	34	446	22	49
Conflicting Peds, #/hr	0	6	6	0	9	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	18	37	485	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	494	0	1053	485
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	568	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1070	-	251	582
Stage 1	-	-	-	-	619	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1064	-	235	579
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	535	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	398	-	-	1064	-
HCM Lane V/C Ratio	0.194	-	-	0.035	-
HCM Control Delay (s)	16.2	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

HCM 6th TWSC
14: W. Papa Ave & Molokai Hema St 10/05/2023

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	458	472	20	6	31
Future Vol, veh/h	61	458	472	20	6	31
Conflicting Peds, #/hr	7	0	0	7	14	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	487	502	21	6	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	530	0	-	0	1151	520
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1037	-	-	-	219	556
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1030	-	-	-	197	552
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	526	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1030	-	-	-	427
HCM Lane V/C Ratio	0.063	-	-	-	0.092
HCM Control Delay (s)	8.7	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

HCM 6th Signalized Intersection Summary
16: S. Kamehameha Ave & W. Papa Ave 10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	313	147	170	292	46	118	320	175	33	191	78
Future Volume (veh/h)	138	313	147	170	292	46	118	320	175	33	191	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	348	163	189	324	51	131	356	194	37	212	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	504	419	397	539	448	384	480	405	257	403	339
Arrive On Green	0.09	0.27	0.27	0.11	0.29	0.29	0.08	0.26	0.26	0.04	0.22	0.22
Sat Flow, veh/h	1781	1870	1553	1781	1870	1555	1781	1870	1576	1781	1870	1574
Grp Volume(v), veh/h	153	348	163	189	324	51	131	356	194	37	212	87
Grp Sat Flow(s),veh/h/ln	1781	1870	1553	1781	1870	1555	1781	1870	1576	1781	1870	1574
Q Serve(g_s), s	3.7	10.1	5.2	4.5	9.0	1.5	3.4	10.6	6.3	1.0	6.1	2.8
Cycle Q Clear(g_c), s	3.7	10.1	5.2	4.5	9.0	1.5	3.4	10.6	6.3	1.0	6.1	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	504	419	397	539	448	384	480	405	257	403	339
V/C Ratio(X)	0.37	0.69	0.39	0.48	0.60	0.11	0.34	0.74	0.48	0.14	0.53	0.26
Avail Cap(c_a), veh/h	434	864	718	503	988	821	419	834	702	336	803	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	19.9	18.1	14.3	18.6	15.9	16.6	20.7	19.1	17.8	21.0	19.7
Incr Delay (d2), s/veh	0.6	1.7	0.6	0.9	1.1	0.1	0.5	2.3	0.9	0.3	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.3	1.8	1.7	3.7	0.5	1.3	4.5	2.2	0.4	2.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	21.6	18.7	15.2	19.6	16.0	17.1	22.9	20.0	18.0	22.1	20.1
LnGrp LOS	B	C	B	B	B	B	B	C	B	B	C	C
Approach Vol, veh/h		664			564			681			336	
Approach Delay, s/veh		19.3			17.8			21.0			21.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	21.3	9.8	18.1	10.2	22.5	7.3	20.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	6.5	12.1	5.4	8.1	5.7	11.0	3.0	12.6
Green Ext Time (p_c), s	0.2	2.4	0.0	1.4	0.0	2.1	0.0	2.5

Intersection Summary		
HCM 6th Ctrl Delay		19.7
HCM 6th LOS		B

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	290	47	21	255	22	44	45	19	26	43	131
Future Vol, veh/h	137	290	47	21	255	22	44	45	19	26	43	131
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	147	312	51	23	274	24	47	48	20	28	46	141
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	27.2	15.4	11.8	12.9
HCM LOS	D	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	41%	29%	7%	13%
Vol Thru, %	42%	61%	86%	21%
Vol Right, %	18%	10%	7%	66%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	474	298	200
LT Vol	44	137	21	26
Through Vol	45	290	255	43
RT Vol	19	47	22	131
Lane Flow Rate	116	510	320	215
Geometry Grp	1	1	1	1
Degree of Util (X)	0.22	0.798	0.527	0.371
Departure Headway (Hd)	6.829	5.638	5.921	6.212
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	524	642	612	578
Service Time	4.89	3.651	3.939	4.264
HCM Lane V/C Ratio	0.221	0.794	0.523	0.372
HCM Control Delay	11.8	27.2	15.4	12.9
HCM Lane LOS	B	D	C	B
HCM 95th-tile Q	0.8	7.9	3.1	1.7

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	452	40	28	397	19	16
Future Vol, veh/h	452	40	28	397	19	16
Conflicting Peds, #/hr	0	3	3	0	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	476	42	29	418	20	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	521	0	976	505
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	476	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1045	-	279	567
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1042	-	268	563
Mov Cap-2 Maneuver	-	-	-	-	268	-
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1042	-
HCM Lane V/C Ratio	0.105	-	-	0.028	-
HCM Control Delay (s)	16.4	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	456	16	51	364	18	38
Future Vol, veh/h	456	16	51	364	18	38
Conflicting Peds, #/hr	0	4	4	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	485	17	54	387	19	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	506	0	994	498
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1059	-	272	572
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1055	-	253	570
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	572	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	406	-	-	1055	-
HCM Lane V/C Ratio	0.147	-	-	0.051	-
HCM Control Delay (s)	15.4	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

HCM 6th TWSC
14: W. Papa Ave & Molokai Hema St 10/05/2023

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	465	378	6	13	11
Future Vol, veh/h	18	465	378	6	13	11
Conflicting Peds, #/hr	2	0	0	2	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	500	406	6	14	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	414	0	-	0	952	411
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	541	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1145	-	-	-	288	641
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1143	-	-	-	280	640
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	582	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1143	-	-	-	377
HCM Lane V/C Ratio	0.017	-	-	-	0.068
HCM Control Delay (s)	8.2	0	-	-	15.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Capacity Analysis
16: S. Kamehameha Ave & W. Papa Ave 10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	271	171	131	235	22	188	205	174	36	291	70
Future Volume (veh/h)	48	271	171	131	235	22	188	205	174	36	291	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	298	188	144	258	24	207	225	191	40	320	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	378	426	360	357	497	420	381	546	462	389	425	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.23	0.23	0.09	0.27	0.27	0.11	0.29	0.29	0.04	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	15.7	22.3	20.4	16.0	18.6	15.6	16.5	16.7	16.8	15.7	23.2	18.1
Ln Grp LOS	B	C	C	B	B	B	B	B	B	B	C	B
Approach Vol, veh/h		539			426			623			437	
Approach Delay, s/veh		21.0			17.6			16.7			21.6	
Approach LOS		C			B			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	10.0	18.0	11.0	17.9	7.8	20.1	7.3	21.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Allow Headway (MAH), s	3.8	4.8	3.8	5.0	3.8	5.1	3.8	4.7
Max Q Clear (g_c+I1), s	5.4	10.3	6.9	11.1	3.3	8.7	3.0	7.5
Green Ext Time (g_e), s	0.1	2.3	0.0	1.9	0.0	1.6	0.0	1.9
Prob of Phs Call (p_c)	0.90	1.00	0.96	1.00	0.57	1.00	0.47	1.00
Prob of Max Out (p_x)	0.50	0.02	1.00	0.04	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		1781		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1578		1585		1579		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	144	0	207	0	53	0	40	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1781	0	1781	0
Q Serve Time (g_s), s	3.4	0.0	4.9	0.0	1.3	0.0	1.0	0.0
Cycle Q Clear Time (g_c), s	3.4	0.0	4.9	0.0	1.3	0.0	1.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	908	0	987	0	1094	0	970	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	13.0	0.0	13.6	0.0	13.0	0.0	12.9	0.0
Perm LT Serve Time (g_u), s	4.7	0.0	3.9	0.0	8.4	0.0	11.1	0.0
Perm LT Q Serve Time (g_ps), s	1.6	0.0	2.6	0.0	0.2	0.0	0.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	357	0	381	0	378	0	389	0
V/C Ratio (X)	0.40	0.00	0.54	0.00	0.14	0.00	0.10	0.00
Avail Cap (c_a), veh/h	514	0	381	0	477	0	472	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	15.2	0.0	14.9	0.0	15.5	0.0	15.6	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.6	0.0	0.2	0.0	0.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	16.0	0.0	16.5	0.0	15.7	0.0	15.7	0.0
1st-Term Q (Q1), veh/ln	1.2	0.0	1.7	0.0	0.5	0.0	0.4	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.3	0.0	1.9	0.0	0.5	0.0	0.4	0.0
%ile Storage Ratio (RQ%)	0.33	0.00	0.48	0.00	0.12	0.00	0.09	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	298	0	320	0	258	0	225
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	8.3	0.0	9.1	0.0	6.7	0.0	5.5
Cycle Q Clear Time (g_c), s	0.0	8.3	0.0	9.1	0.0	6.7	0.0	5.5
Lane Grp Cap (c), veh/h	0	426	0	425	0	497	0	546
V/C Ratio (X)	0.00	0.70	0.00	0.75	0.00	0.52	0.00	0.41
Avail Cap (c_a), veh/h	0	920	0	854	0	1052	0	887
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	20.2	0.0	20.5	0.0	17.8	0.0	16.2
Incr Delay (d2), s/veh	0.0	2.1	0.0	2.7	0.0	0.8	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.3	0.0	23.2	0.0	18.6	0.0	16.7
1st-Term Q (Q1), veh/ln	0.0	3.3	0.0	3.6	0.0	2.6	0.0	2.1
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.3	0.0	0.1	0.0	0.1

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.5	0.0	3.9	0.0	2.7	0.0	2.2
%ile Storage Ratio (RQ%)	0.00	0.30	0.00	0.30	0.00	0.23	0.00	0.12
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	188	0	77	0	24	0	191
Grp Sat Flow (s), veh/h/ln	0	1578	0	1585	0	1579	0	1585
Q Serve Time (g_s), s	0.0	5.9	0.0	2.2	0.0	0.6	0.0	5.5
Cycle Q Clear Time (g_c), s	0.0	5.9	0.0	2.2	0.0	0.6	0.0	5.5
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	360	0	361	0	420	0	462
V/C Ratio (X)	0.00	0.52	0.00	0.21	0.00	0.06	0.00	0.41
Avail Cap (c_a), veh/h	0	776	0	724	0	888	0	752
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	19.3	0.0	17.9	0.0	15.6	0.0	16.2
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.3	0.0	0.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.4	0.0	18.1	0.0	15.6	0.0	16.8
1st-Term Q (Q1), veh/ln	0.0	2.0	0.0	0.8	0.0	0.2	0.0	1.8
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.1	0.0	0.8	0.0	0.2	0.0	1.9
%ile Storage Ratio (RQ%)	0.00	0.53	0.00	0.20	0.00	0.06	0.00	0.47
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		19.1
HCM 6th LOS		B

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2025 PEAK HOUR TRAFFIC
ANALYSIS WITH PROJECT

Intersection	
Intersection Delay, s/veh	24.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	265	175	17	11	173	84	45	61	22	83	27	247
Future Vol, veh/h	265	175	17	11	173	84	45	61	22	83	27	247
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	276	182	18	11	180	88	47	64	23	86	28	257
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	34.7	16.4	13.3	20.7
HCM LOS	D	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	58%	4%	23%
Vol Thru, %	48%	38%	65%	8%
Vol Right, %	17%	4%	31%	69%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	457	268	357
LT Vol	45	265	11	83
Through Vol	61	175	173	27
RT Vol	22	17	84	247
Lane Flow Rate	133	476	279	372
Geometry Grp	1	1	1	1
Degree of Util (X)	0.276	0.841	0.514	0.653
Departure Headway (Hd)	7.441	6.357	6.633	6.421
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	484	566	547	565
Service Time	5.459	4.452	4.633	4.421
HCM Lane V/C Ratio	0.275	0.841	0.51	0.658
HCM Control Delay	13.3	34.7	16.4	20.7
HCM Lane LOS	B	D	C	C
HCM 95th-tile Q	1.1	8.8	2.9	4.7

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	437	40	11	451	25	19
Future Vol, veh/h	437	40	11	451	25	19
Conflicting Peds, #/hr	0	18	18	0	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	44	12	496	27	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	542	0	1040	547
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	520	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1027	-	255	537
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1009	-	247	514
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	318	-	-	1009	-
HCM Lane V/C Ratio	0.152	-	-	0.012	-
HCM Control Delay (s)	18.3	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	432	17	34	447	22	49
Future Vol, veh/h	432	17	34	447	22	49
Conflicting Peds, #/hr	0	6	6	0	9	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	18	37	486	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	494	0	1054	485
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1070	-	250	582
Stage 1	-	-	-	-	619	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1064	-	235	579
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	398	-	-	1064	-
HCM Lane V/C Ratio	0.194	-	-	0.035	-
HCM Control Delay (s)	16.2	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	458	473	20	6	31
Future Vol, veh/h	61	458	473	20	6	31
Conflicting Peds, #/hr	7	0	0	7	14	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	487	503	21	6	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	531	0	-	0	1152	521
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	219	555
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1029	-	-	-	197	551
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	526	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1029	-	-	-	427
HCM Lane V/C Ratio	0.063	-	-	-	0.092
HCM Control Delay (s)	8.7	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

HCM 6th Signalized Intersection Summary
16: S. Kamehameha Ave & W. Papa Ave

10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	314	147	170	293	46	118	320	176	33	191	78
Future Volume (veh/h)	138	314	147	170	293	46	118	320	176	33	191	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	349	163	189	326	51	131	356	196	37	212	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	505	419	397	540	449	384	480	405	257	403	339
Arrive On Green	0.09	0.27	0.27	0.11	0.29	0.29	0.08	0.26	0.26	0.04	0.22	0.22
Sat Flow, veh/h	1781	1870	1553	1781	1870	1555	1781	1870	1576	1781	1870	1574
Grp Volume(v), veh/h	153	349	163	189	326	51	131	356	196	37	212	87
Grp Sat Flow(s),veh/h/ln	1781	1870	1553	1781	1870	1555	1781	1870	1576	1781	1870	1574
Q Serve(g_s), s	3.7	10.2	5.2	4.5	9.1	1.5	3.4	10.6	6.4	1.0	6.1	2.8
Cycle Q Clear(g_c), s	3.7	10.2	5.2	4.5	9.1	1.5	3.4	10.6	6.4	1.0	6.1	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	505	419	397	540	449	384	480	405	257	403	339
V/C Ratio(X)	0.37	0.69	0.39	0.48	0.60	0.11	0.34	0.74	0.48	0.14	0.53	0.26
Avail Cap(c_a), veh/h	433	864	717	503	987	820	419	833	702	336	802	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	19.9	18.1	14.3	18.6	15.9	16.6	20.7	19.1	17.8	21.0	19.7
Incr Delay (d2), s/veh	0.6	1.7	0.6	0.9	1.1	0.1	0.5	2.3	0.9	0.3	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.3	1.8	1.7	3.8	0.5	1.3	4.5	2.3	0.4	2.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	21.6	18.6	15.2	19.7	16.0	17.1	23.0	20.0	18.1	22.1	20.1
LnGrp LOS	B	C	B	B	B	B	B	C	C	B	C	C
Approach Vol, veh/h		665			566			683			336	
Approach Delay, s/veh		19.3			17.9			21.0			21.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	21.4	9.8	18.1	10.2	22.5	7.3	20.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	6.5	12.2	5.4	8.1	5.7	11.1	3.0	12.6
Green Ext Time (p_c), s	0.2	2.4	0.0	1.4	0.0	2.1	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

HCM 6th AWSC
7: Lono Ave & W. Papa Ave

10/05/2023

Intersection	
Intersection Delay, s/veh	20.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	291	47	21	262	22	44	45	19	26	43	135
Future Vol, veh/h	138	291	47	21	262	22	44	45	19	26	43	135
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	313	51	23	282	24	47	48	20	28	46	145
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	28.4	15.8	11.9	13.1
HCM LOS	D	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	41%	29%	7%	13%
Vol Thru, %	42%	61%	86%	21%
Vol Right, %	18%	10%	7%	66%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	476	305	204
LT Vol	44	138	21	26
Through Vol	45	291	262	43
RT Vol	19	47	22	135
Lane Flow Rate	116	512	328	219
Geometry Grp	1	1	1	1
Degree of Util (X)	0.222	0.81	0.541	0.381
Departure Headway (Hd)	6.891	5.694	5.935	6.252
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	519	640	607	575
Service Time	4.957	3.694	3.981	4.308
HCM Lane V/C Ratio	0.224	0.8	0.54	0.381
HCM Control Delay	11.9	28.4	15.8	13.1
HCM Lane LOS	B	D	C	B
HCM 95th-tile Q	0.8	8.3	3.2	1.8

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	454	40	28	408	19	16
Future Vol, veh/h	454	40	28	408	19	16
Conflicting Peds, #/hr	0	3	3	0	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	478	42	29	429	20	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	523	0	989	507
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1043	-	274	566
Stage 1	-	-	-	-	608	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1040	-	263	562
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	-	-	1040	-
HCM Lane V/C Ratio	0.106	-	-	0.028	-
HCM Control Delay (s)	16.6	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	468	16	51	365	18	38
Future Vol, veh/h	468	16	51	365	18	38
Conflicting Peds, #/hr	0	4	4	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	498	17	54	388	19	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	519	0	1008	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	497	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1047	-	267	563
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1043	-	248	561
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	399	-	-	1043	-
HCM Lane V/C Ratio	0.149	-	-	0.052	-
HCM Control Delay (s)	15.6	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

HCM 6th TWSC
14: W. Papa Ave & Molokai Hema St 10/05/2023

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	477	379	6	13	11
Future Vol, veh/h	18	477	379	6	13	11
Conflicting Peds, #/hr	2	0	0	2	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	513	408	6	14	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	416	0	-	0	967	413
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	554	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1143	-	-	-	282	639
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	575	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1141	-	-	-	274	638
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	574	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1141	-	-	-	371
HCM Lane V/C Ratio	0.017	-	-	-	0.07
HCM Control Delay (s)	8.2	0	-	-	15.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Capacity Analysis
16: S. Kamehameha Ave & W. Papa Ave 10/05/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	278	171	131	236	22	188	205	178	37	291	70
Future Volume (veh/h)	48	278	171	131	236	22	188	205	178	37	291	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	305	188	144	259	24	207	225	196	41	320	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	380	433	365	355	503	425	379	542	460	387	425	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.23	0.23	0.09	0.27	0.27	0.10	0.29	0.29	0.04	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	15.6	22.3	20.3	16.0	18.6	15.6	16.7	16.9	17.1	15.8	23.4	18.3
Ln Grp LOS	B	C	C	B	B	B	B	B	B	B	C	B
Approach Vol, veh/h		546			427			628			438	
Approach Delay, s/veh		21.0			17.5			16.9			21.8	
Approach LOS		C			B			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	10.0	18.3	11.0	18.0	7.8	20.4	7.4	21.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green (Gmax), s	10.0	28.0	6.0	26.0	6.0	32.0	5.0	27.0
Max Allow Headway (MAH), s	3.8	4.8	3.8	5.0	3.8	5.1	3.8	4.7
Max Q Clear (g_c+I1), s	5.4	10.6	7.0	11.1	3.3	8.7	3.0	7.7
Green Ext Time (g_e), s	0.1	2.3	0.0	1.9	0.0	1.6	0.0	1.9
Prob of Phs Call (p_c)	0.90	1.00	0.96	1.00	0.57	1.00	0.48	1.00
Prob of Max Out (p_x)	0.50	0.02	1.00	0.04	1.00	0.00	1.00	0.01

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		1781		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1578		1585		1579		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	144	0	207	0	53	0	41	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1781	0	1781	0
Q Serve Time (g_s), s	3.4	0.0	5.0	0.0	1.3	0.0	1.0	0.0
Cycle Q Clear Time (g_c), s	3.4	0.0	5.0	0.0	1.3	0.0	1.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	903	0	987	0	1094	0	966	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	13.3	0.0	13.6	0.0	13.3	0.0	13.0	0.0
Perm LT Serve Time (g_u), s	4.7	0.0	3.9	0.0	8.7	0.0	11.0	0.0
Perm LT Q Serve Time (g_ps), s	1.6	0.0	2.6	0.0	0.2	0.0	0.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	355	0	379	0	380	0	387	0
V/C Ratio (X)	0.41	0.00	0.55	0.00	0.14	0.00	0.11	0.00
Avail Cap (c_a), veh/h	511	0	379	0	478	0	468	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	15.2	0.0	15.1	0.0	15.4	0.0	15.7	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.6	0.0	0.2	0.0	0.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	16.0	0.0	16.7	0.0	15.6	0.0	15.8	0.0
1st-Term Q (Q1), veh/ln	1.2	0.0	1.8	0.0	0.5	0.0	0.4	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.3	0.0	1.9	0.0	0.5	0.0	0.4	0.0
%ile Storage Ratio (RQ%)	0.33	0.00	0.49	0.00	0.12	0.00	0.10	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	305	0	320	0	259	0	225
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	8.6	0.0	9.1	0.0	6.7	0.0	5.6
Cycle Q Clear Time (g_c), s	0.0	8.6	0.0	9.1	0.0	6.7	0.0	5.6
Lane Grp Cap (c), veh/h	0	433	0	425	0	503	0	542
V/C Ratio (X)	0.00	0.70	0.00	0.75	0.00	0.51	0.00	0.41
Avail Cap (c_a), veh/h	0	915	0	849	0	1045	0	882
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	20.2	0.0	20.6	0.0	17.8	0.0	16.4
Incr Delay (d2), s/veh	0.0	2.1	0.0	2.7	0.0	0.8	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.3	0.0	23.4	0.0	18.6	0.0	16.9
1st-Term Q (Q1), veh/ln	0.0	3.4	0.0	3.6	0.0	2.6	0.0	2.2
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.1	0.0	0.1

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.7	0.0	3.9	0.0	2.7	0.0	2.2
%ile Storage Ratio (RQ%)	0.00	0.31	0.00	0.30	0.00	0.24	0.00	0.12
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	188	0	77	0	24	0	196
Grp Sat Flow (s), veh/h/ln	0	1578	0	1585	0	1579	0	1585
Q Serve Time (g_s), s	0.0	6.0	0.0	2.3	0.0	0.6	0.0	5.7
Cycle Q Clear Time (g_c), s	0.0	6.0	0.0	2.3	0.0	0.6	0.0	5.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	365	0	360	0	425	0	460
V/C Ratio (X)	0.00	0.51	0.00	0.21	0.00	0.06	0.00	0.43
Avail Cap (c_a), veh/h	0	772	0	720	0	883	0	747
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	19.2	0.0	18.0	0.0	15.5	0.0	16.5
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.3	0.0	0.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.3	0.0	18.3	0.0	15.6	0.0	17.1
1st-Term Q (Q1), veh/ln	0.0	2.0	0.0	0.8	0.0	0.2	0.0	1.9
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.1	0.0	0.8	0.0	0.2	0.0	2.0
%ile Storage Ratio (RQ%)	0.00	0.53	0.00	0.20	0.00	0.06	0.00	0.50
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

APPENDIX F

Cultural Impact Assessment

A Cultural Impact Assessment to inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Maintenance Branch and Maui High School Facilities Project

March 2024

Prepared by: Nohopapa Hawai‘i, LLC

A Cultural Impact Assessment to inform Environmental and Historic Preservation Compliance Review for the Department of Education Facilities Development Branch and Maui High School Facilities Project

McKinley Community School for Adults Maui Campus, Wailuku Ahupua‘a, Wailuku Moku, Maui Mokupuni, Tax Map Key (TMK): [2] 3-8-007:098

Prepared by:

NOHO PAPA HAWAI'I

Prepared for:

BOWERS + KUBOTA

This report was prepared by Nohopapa Hawaiʻi, LLC, for Bowers + Kubota Consulting, Inc.

AUTHORS
Rachel Hoerman, Ph.D., R. Kalena Lee-Agcaoili, M.A., and Kelley Uyeoka, M.A.

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STUDY SUMMARY

Reference	Cultural Impact Assessment to Inform Environmental and Historic Preservation Compliance Review for the Department of Education (DOE) Facilities Development Branch (FDB) Maui High School (MHS) Facilities Project, McKinley Community School for Adults Maui Campus, Wailuku Ahupua'a, Wailuku Moku, Maui Mokupuni, Tax Map Key (TMK): [2] 3-8-007:098 (Hoerman et al. 2023)
Date	September 2023
Land Jurisdiction	The State of Hawaii is listed as the Fee Owner of the approximately 2.2 acre project area (County of Maui 2023).
Project Proponent	DOE-FDB
Project Area	The project area occupies a southern subsegment of TMK [2] 3-8-007:098, located at the Department of Education (DOE) Facilities Development Branch (FDB) and Maui High School (MHS) Facilities Project at MHS, 660 Lono Avenue, Kahului, Wailuku Ahupua'a, Wailuku Moku, Maui.
Project Area Acreage	2.2 acres (95,832 square feet)
Project Description	Proposed is the expansion of MHS facilities to include construction of two new buildings - a new one-story building for the DOE Maui District Mowing Facility (6,400 square feet), paved areas and a parking lot (an additional 11,600 square feet), and a new one-story building for the McKinley Community School for Adults Maui Campus (CSA; 9,125 square feet) and associated parking lot (18,450 square feet) - as well as one access routes for the DOE-FDB connecting each facility to West Papa Avenue, and electrical, communications, water, sewer, and drainage utilities for each building on an undeveloped tract of land adjacent to the existing high school. The CIA and LRFI studies will be used to inform an Environmental Assessment (EA) under Hawai'i Environmental Policy Act (HEPA) Hawai'i Revised Statutes (HRS) §343 and to initiate historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawai'i Administrative Rules (HAR) §275. Anticipated ground disturbance for the project is listed below. **DOE Maui District Mowing Facility:** Facility (6,400 square feet) - 64 feet long x 67 feet wide x 2 feet deep Paved areas and a parking lot (11,600 square feet) - 141 feet long x 120 feet wide x 1.17 feet deep Drainage utilities - 707 feet long x 2 to 3 feet wide x 4 to 7 feet deep, 65 feet long by 37 feet wide x 8.6 feet deep (detention system) Water utilities - 385 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep Sewer utilities – 338 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep **McKinley Community School for Adults Maui Campus:** Facility (CSA; 9,125 square feet) - 125 feet long x 73 feet wide x 4 feet deep McKinley Community School for Adults parking lot (18,450 square feet) – 152.5 feet long x 121 feet wide x 1.17 feet deep Drainage utilities - 345 feet long x 2 to 3 feet wide x 4 to 7 feet deep

	Water utilities - 297 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep Sewer utilities – 259 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep Access routes for the DOE-FDB connecting each facility to West Papa Avenue - 346 feet long x 24 feet wide x 1.17 feet deep Fence – 1258 feet long x 1 feet wide x 3.5 feet deep **Electrical/Communication Utilities:** Primary Electrical, Fire Alarm, Communication - 273 feet long x 3 feet wide x 3 deep Primary Electrical – 197 feet long x 16 feet wide x 3 feet deep Secondary Electrical – 400 feet long x 16 feet wide x 3 feet deep Communications – 341 feet long x 16 feet wide by x 3 feet deep Fire Alarm – 386 feet long x 16 feet wide x 3 feet deep Fire Alarm, Communications – 301 feet long x 16 feet wide x 3 feet deep Lighting – 906 feet long x 16 feet wide x 3 feet deep
Document Purpose	This study was generated to inform an Environmental Assessment per the requirements of the Hawai‘i Environmental Policy Act and its implementing legislation Hawai‘i Revised Statutes (HRS) §343. The State constitution, as well as state laws and courts, require government agencies to “promote and preserve cultural beliefs, practices, and resources of native [sic] Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project,” (State of Hawai‘i Environmental Council 1997). As noted by the State of Hawai‘i Environmental Council (1997), “[a] cultural impact assessment analyzes “the impact of a proposed action on cultural practices and features [collectively termed ‘cultural resources’] associated with the project area”. At the request of Bowers and Kubota, Nohopapa Hawai‘i, LLC, completed this CIA to fulfil environmental review requirements and inform an Environmental Assessment triggered by Hawai‘i Revised Statutes (HRS) §343.
Regulatory Context	The proposed project is a DOE state agency undertaking, an action that triggers an Environmental Assessment and Cultural Impact Assessment under Hawai'i Revised Statutes (HRS) §343, and historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawai‘i Administrative Rules (HAR) §275.
Methods	This CIA consisted of four primary tasks: (1) Ethnohistorical background research; (2) Community ethnographic interviews, summaries, and recommendations; (3) Cultural impacts assessment; (4) Results reporting. The study spanned a 4-month period from November 2023 through March 2024. Project personnel included: R. Kalena Lee-Agcaoili, M.A., Rachel Hoerman, Ph.D., and Kelley L. Uyeoka, M.A.
Consultation	Consultation for this CIA was conducted from November 2023 through March 2024. Consultation included identifying appropriate and knowledgeable individuals, conducting consultation through emails, phone calls, and/or Zoom interviews, summarizing participants’ mana‘o (*thoughts, ideas, beliefs, opinions*). A total of 24 individuals

	were invited to engage in consultation for this project. One individual responded confirming their interest to participate, and completed an interview.
Recommendations	See pp. 66–68
Considerations	*"Please consider the words of someone who actually helped to establish the area as a living garden, a place of being in ʻāina. From a student who actually saw the benefits of this land being used as an agricultural class, [they] hope that it will again return to its former status."* - Clare Apana, consultation provided for this study Additionally, and from a space of wahi kūpuna stewardship and regulatory compliance expertise, Nohopapa Hawaiʻi advises several considerations regarding the proposed project's potential impacts to cultural resources (practices, features, and beliefs) associated with the project area and/or vicinity: **1) Consultation early and often.** Should the footprint or other characteristics of the proposed project change significantly as it unfolds, **additional and expanded consultation is recommended** to ensure community members have the opportunity to provide input on updated potential impacts of the proposed project to cultural resources per the requirements of the Hawaii Environmental Policy Act and its implementing legislation Hawaii Revised Statutes (HRS) §343 and 1997 Environmental Council Guidelines for Assessing Cultural Impacts. Considering the proximity of iwi kūpuna as well as wahi kūpuna/historic properties to the project area and the large amount and scale of ground disturbance and alteration of the project area that is proposed, **we recommend continued community consultation for the duration of this project** from the design plan and execution phases to its completion. This would include **Community care of any iwi kūpuna revealed** in accordance with the best practices outlined by Apana. **2) Carefully considered project design.** Project design should make every effort to limit ground disturbance. The design team should consider options for building the land up before developing it, avoiding the disturbance of natural dune sediments and fill that are known to contain iwi kūpuna. As shared by Apana: "[B]uild something that would honor them, like building something that actually respects the ʻāina and builds sustainably for the ʻāina momona. The ʻāina momona of the children here. Apana stressed the recommendation, "They should actually build buildings that go above ground and have the infrastructure without digging into the ground. It has never been done in a school except for these portables. It's never been done to actually design it so that you didn't ground disturb." These measures, which are optimal under the auspices of a project, additionally benefit the project timeline and budget.

	3) Cultural monitoring alongside archaeological monitoring is appropriate for this location given the sensitive nature of the dune deposits as well as professional best practices.

INTRODUCTION AND METHODS

He Leo Mahalo

Mahalo to all the individuals involved with this project. We are grateful to Jared Chang and Matthew Fernandez of Bowers + Kubota for the opportunity to complete this cultural impact assessment for the DOE FDB Facilities Improvement Project at MHS. Mahalo to Stacy Naipo from the State Historic Preservation Department (SHPD) for helping us retrieve reports for the project area. Additionally, Nohopapa Hawai‘i would like to mahalo Clare Apana for sharing her time and insight related to this project. Without her willingness to share personal recollections and stories, this important project would not have been possible. The mana‘o that was shared will help to mālama Wailuku for future generations to better understand, appreciate, and cherish the uniqueness of this place.

Introduction

At the request of Bowers and Kubota, Nohopapa Hawai‘i completed a Literature Review and Field Inspection (LRFI) Study, and Hawai‘i Revised Statutes (HRS) §6E Consultation supporting environmental and historic preservation compliance review for the Department of Education (DOE) Facilities Development Branch (FDB) and Maui High School (MHS) Facilities Project, 660 Lono Avenue, Kahului, Wailuku Ahupua‘a, Wailuku Moku, Maui (TMK: [2] 3-8-007:098). The State of Hawai‘i is listed as the Fee Owner of the roughly 2.2 acre project area (Figure 1, Figure 2, Figure 3, County of Maui 2023). Note, throughout this report, the entirety of TMK [2] 3-8-007:098 is referred to as the “study area.” The “project area” refers to the location of the proposed project and its associated ground disturbance.

Project Description

Proposed is the expansion of MHS facilities to include construction of two new buildings - a new one-story building for the DOE Maui District Mowing Facility (6,400 square feet) plus paved areas and a parking lot (an additional 11,600 square feet) and a new one-story building for the McKinley Community School for Adults Maui Campus (CSA; 9,125 square feet) and associated parking lot (18,450 square feet) - as well as one access routes for the DOE-FDB connecting each facility to West Papa Avenue, and electrical, communications, water, sewer, and drainage utilities for each building on an undeveloped tract of land adjacent to the existing high school (Figure 4 and Figure 5). Ground disturbance estimates include:

DOE Maui District Mowing Facility
Facility (6,400 square feet) - 64 feet long x 67 feet wide x 2 feet deep
Paved areas and a parking lot (11,600 square feet) - 141 feet long x 120 feet wide x 1.17 feet deep
Drainage utilities - 707 feet long x 2 to 3 feet wide x 4 to 7 feet deep, 65 feet long by 37 feet wide x 8.6 feet deep (detention system)
Water utilities - 385 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep
Sewer utilities – 338 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep
Lighting – 906 feet long x 16 feet wide x 3 feet deep

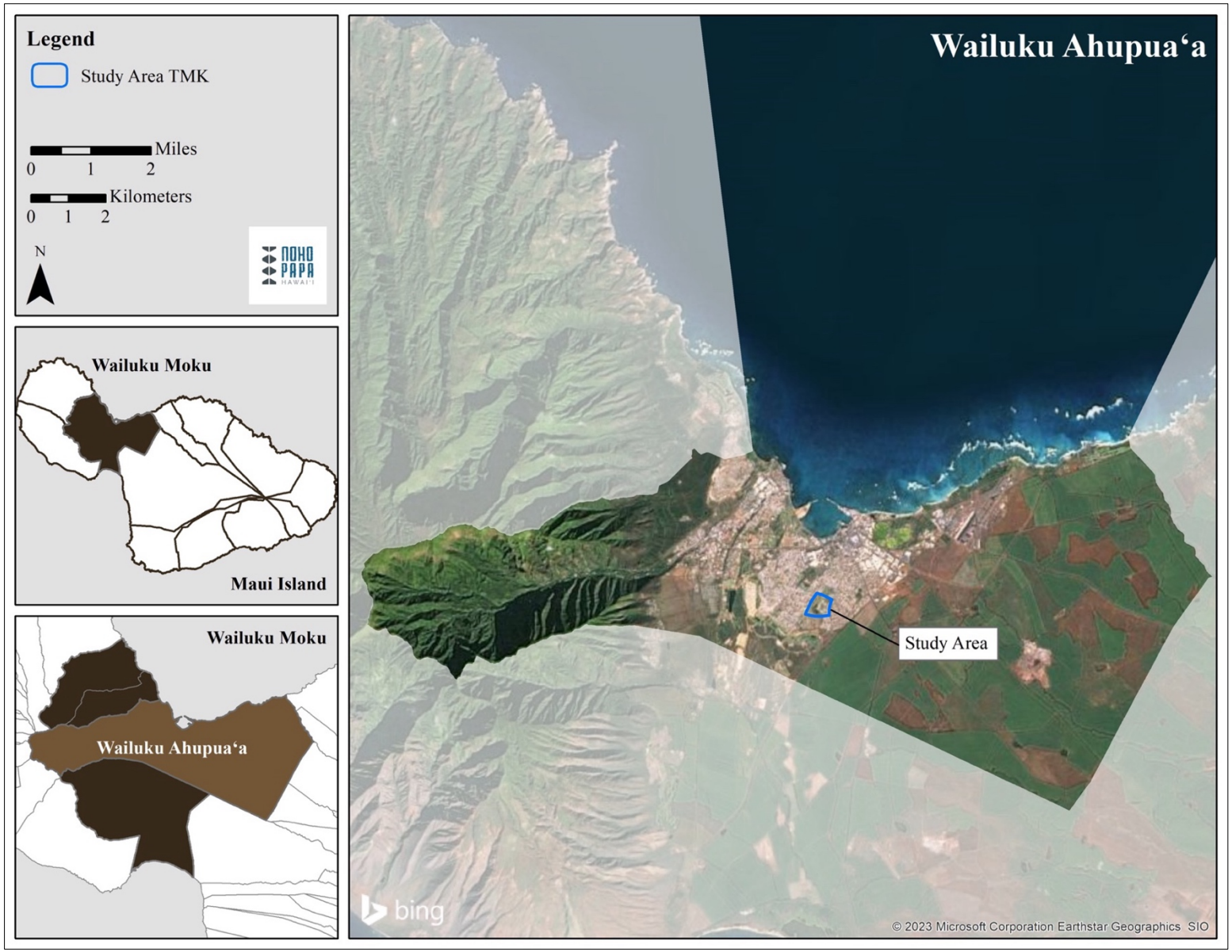

Figure 1. Aerial imagery depicting the location of the study area and project area TMK in Kahului, Wailuku Ahupua‘a, Maui.

Figure 2. Portion of the USGS 7.5-minute topographic quadrangle showing the location of the project area TMK in Kahului, Wailuku Ahupuaʻa, Maui.

Figure 3. Aerial imagery depicting the project area, delineated in yellow, in Kahului, Wailuku Ahupuaʻa, Maui.

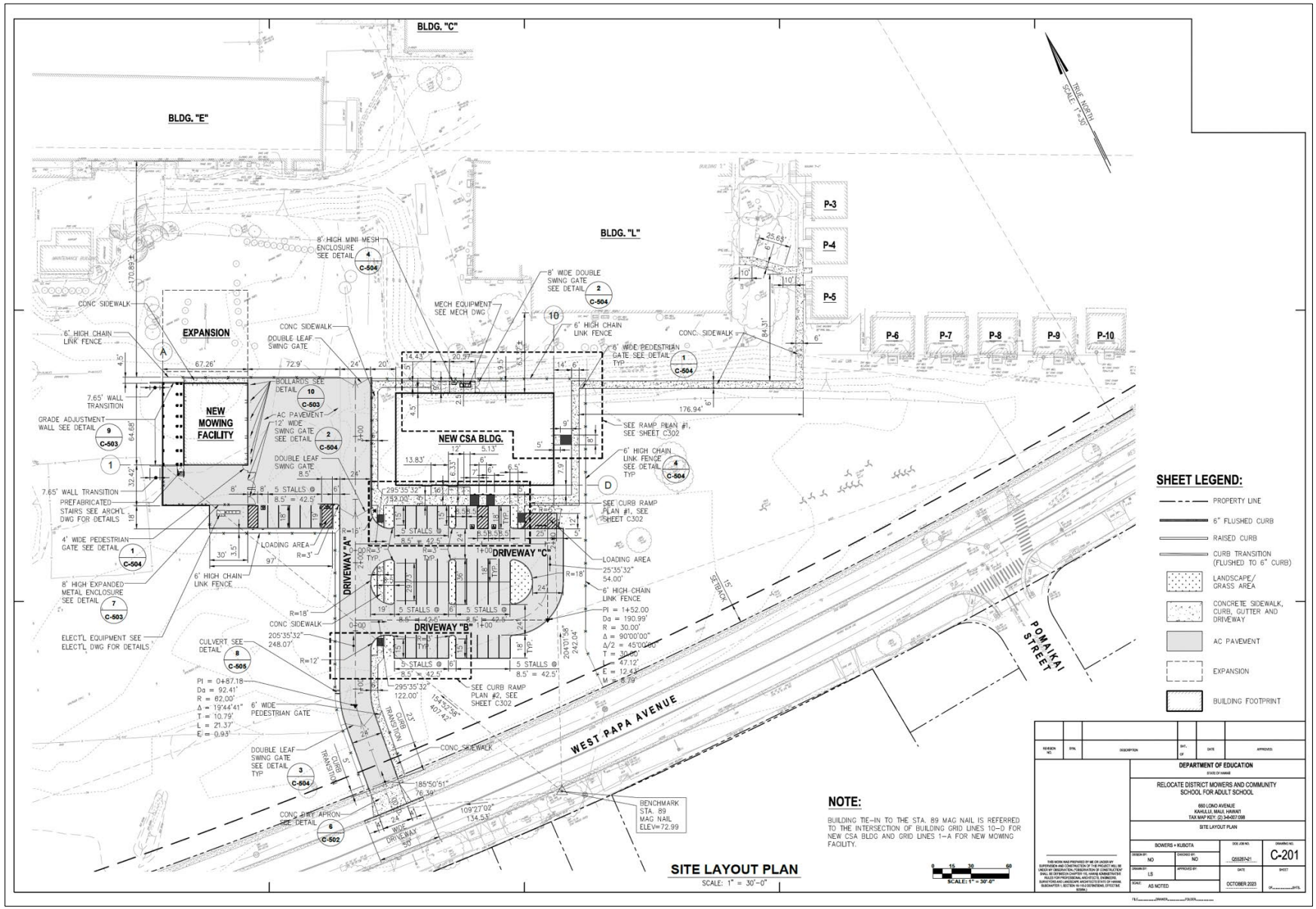

Figure 4. Current design plans for the proposed project illustrating the footprint and estimated ground disturbance associated with the MHS facilities expansion (Bowers and Kubota 2024).

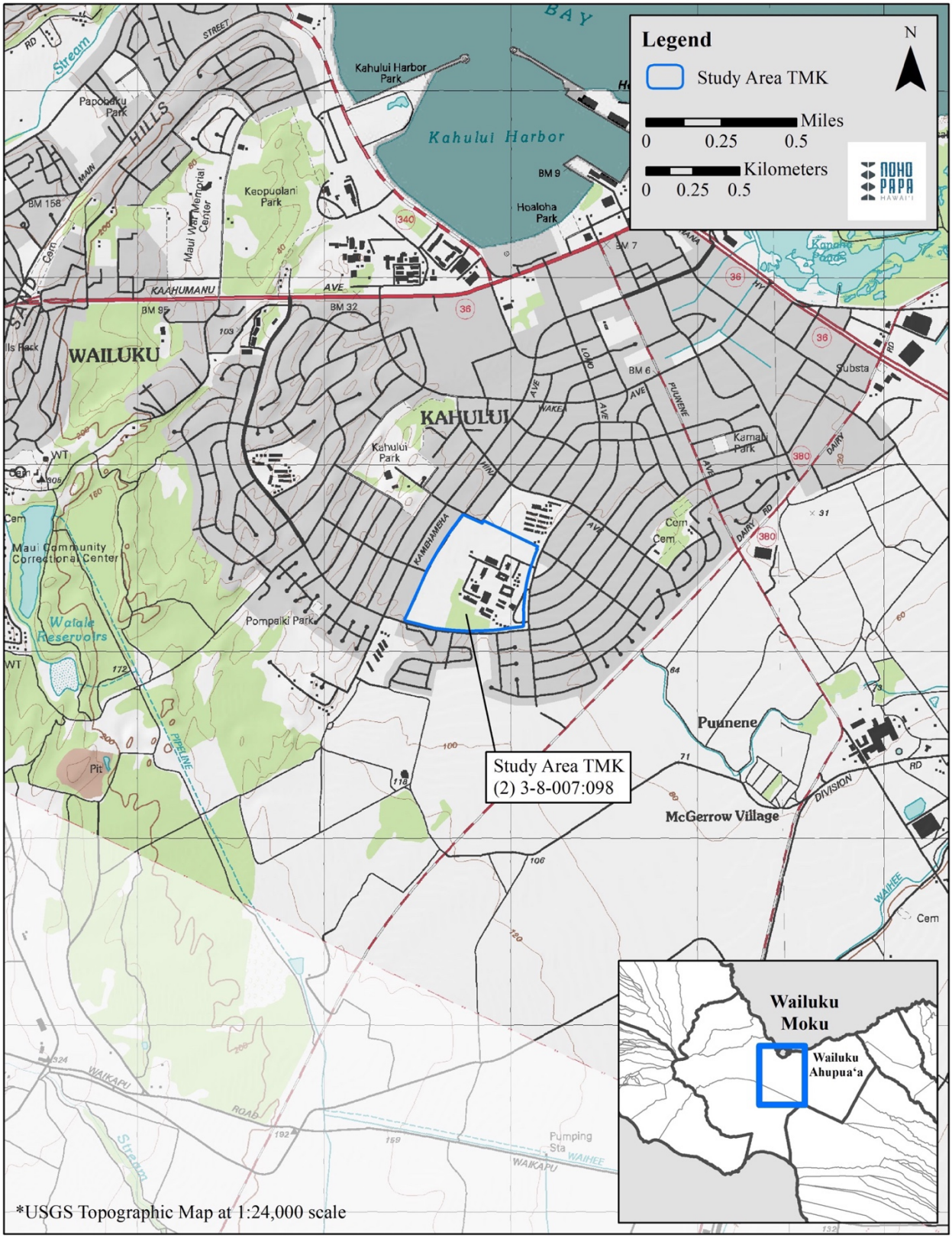

Figure 5. Aerial imagery depicting the project area overlain with the TMK of the project area (TMK [2] 3-8-007:098), and surrounding vicinity.

McKinley Community School for Adults Maui Campus:
Facility (CSA; 9,125 square feet) - 125 feet long x 73 feet wide x 4 feet deep
McKinley Community School for Adults Maui Campus parking lot (18,450 square feet) – 152.5 feet long x 121 feet wide x 1.17 feet deep
Drainage utilities - 345 feet long x 2 to 3 feet wide x 4 to 7 feet deep
Water utilities - 297 feet long x 2 to 3 feet wide x 4 to 4.5 feet deep
Sewer utilities – 259 feet long x 2 to 3 feet wide x 6 to 7.5 feet deep
Access routes for the DOE-FDB connecting each facility to West Papa Avenue - 346 feet long x 24 feet wide x 1.17 feet deep
Fence – 1258 feet long x 1 feet wide x 3.5 feet deep

Electrical/Communication Utilities:
Primary Electrical, Fire Alarm, Communication - 273 feet long x 3 feet wide x 3 deep
Primary Electrical – 197 feet long x 16 feet wide x 3 feet deep
Secondary Electrical – 400 feet long x 16 feet wide x 3 feet deep
Communications – 341 feet long x 16 feet wide by x 3 feet deep
Fire Alarm – 386 feet long x 16 feet wide x 3 feet deep
Fire Alarm, Communications – 301 feet long x 16 feet wide x 3 feet deep
Lighting – 906 feet long x 16 feet wide x 3 feet deep

Document Purpose

The purpose of the CIA is to inform HRS §343 environmental compliance review triggered by DOE-FDB facilities improvements at MHS. The State constitution, as well as state laws and courts, require government agencies to "promote and preserve cultural beliefs, practices, and resources of native [sic] Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project," (State of Hawai'i Environmental Council 1997). As noted by the State of Hawai'i Environmental Council (1997), "[a] cultural impact assessment analyzes "the impact of a proposed action on cultural practices and features [collectively termed 'cultural resources'] associated with the project area".

In order to accomplish the above, this CIA consisted of four primary tasks: (1) Ethnohistorical background research; (2) Community ethnographic interviews, summaries, and recommendations; (3) Cultural impacts assessment; (4) Results reporting.

Through ethno-historical background research and consultation, this CIA provides an assessment of the proposed project's potential impacts to cultural resources, defined as practices and features, which may include Traditional Cultural Properties (TCPs) of ongoing cultural significance that may be eligible for inclusion on the Hawai'i Register of Historic Places, in accordance with Hawai'i Revised Statutes (HRS) Chapter 6E Guidelines for significance criteria (AR §13-284) under Criterion E.

Regulatory Context

The proposed project is a DOE state agency undertaking, an action that triggers an Environmental Assessment and Cultural Impact Assessment under Hawai'i Revised Statutes (HRS) §343, and historic preservation compliance review under HRS §6E-8 and its implementing legislation Hawai'i Administrative Rules (HAR) §275.

Methods

This Cultural Impact Assessment consisted of four primary tasks: (1) ethnohistorical background research; (2) community ethnographic interviews, summaries, and recommendations; (3) cultural impacts assessment; (4) synthesis and recommendations. The study spanned a 12-month period from November 2023 through March 2024. Project personnel included: R. Kalena Lee-Agcaoili, M.A., Rachel Hoerman, Ph.D., and Kelley L. Uyeoka, M.A. While conducting this study, Nohopapa Hawai'i's research team incorporated a set of living values and beliefs to help guide our research, analysis, behavior, perspective, and overall frame of reference. The core values directing our hui included:

- ***Aloha 'Āina****- to have a deep and cherished love for the land which created and sustains us*
- ***Ha'aha'a****- to be humble, modest, unassuming, unobtrusive, and maintain humility*
- ***Ho'omau****- to recognize, appreciate, and encourage the preservation, perpetuation, and continuity of our wahi pana and kaiaulu*
- ***'Imi Na'auao****- to seek knowledge or education; be ambitious to learn*
- ***Kuleana****- to view our work as both a privilege and responsibility*

These values represent the underlying foundation, spirit, and structure for this study. It was our hope that by providing a frame of reference and guiding values, the teams' efforts would be better understood in the context of our being indigenous researchers genuinely believing in and practicing aloha 'āina and aloha lāhui.

Ethnohistorical Research Methods

Background research performed for this study emphasized original efforts and the identification, gathering, and utilization of Hawaiian and other historical resources in order to provide a place-based, culturally-grounded contextualization of land use, settlement patterns, and wahi kūpuna/historic properties in the project area in Wailuku Ahupua'a through time.

Resources targeted during background research included: Hawaiian oral traditions and other 'Ōlelo Hawai'i ethnohistorical resources (including 19th and 20th century Hawaiian scholarship), historical accounts, Māhele and other land documents and maps, Hawaiian and English language newspapers, ethnographic and historical studies, historical photos and records, and previous academic and compliance archaeological studies. Online repositories consulted included: the Hawai'i State Archives Digital Collection, the Bishop Museum Library and Archives, the Hawaiian Missions Houses Library and Archives, the University of Hawai'i at Mānoa (UHM) Hamilton Library, UHM's Online Maps, Aerial, Photograph and GIS (MAGIS) library, Papakilo Database, Ulukau, and AVA Konohiki. Reports, historical maps and photographs from the Nohopapa internal database as well as books and other publications from the authors' personal libraries were also utilized.

Nohopapa Hawai'i's methodological approach for evaluating and using primary 'ike kūpuna (ancestral knowledge) and primary source Hawaiian materials is derived from Kikiloi (2010:80), who writes that researchers must preference:"...testimonies in the ethno-historic record that were (a) recorded first in Hawaiian Language, and (b) written by native Hawaiian people or recorded first hand from their testimony."

In addition to these required attributes, Nohopapa Hawai‘i researchers possess the skills Kikiloi (2010:80) asserts are necessary for accurate, careful, and respectful utilization of ‘ike kūpuna (ancestral knowledge) and primary source Hawaiian materials:

> (a) an emic (insider) understanding of cultural context, meaning, and metaphor;
> (b) a level of fluency in the native language or ‘ōlelo Hawai‘i (Hawaiian Language)
> (c) a familiarity with ‘āina (environment) as a critical point of reference to orient and position oneself to have legitimacy in interpretation. [Kikiloi 2010:80]

Background research using the methods and approaches described above was used to inform contextual synthesis of:

- Natural/cultural resources (environmental zones, soils, geology, plants, wai) associated with the project area,
- Native Hawaiian oral traditions and accounts including ka‘ao, mo‘olelo, inoa ‘āina, mele, oli, ‘ōlelo no‘eau, nūpepa, (histories, narratives, place names, songs, chants, proverbs, newspapers) associated with the project area,
- Cultural resources, practices, and beliefs found within the broad geographical area that hosts the project area, including its relationships to people and places throughout the pae ‘āina,
- Post-European contact historical accounts (early visitor accounts, Plantation Era records, historical maps, English language newspapers) associated with the project area,
- Kingdom of Hawai‘i land use and resource management practices within the project area and vicinity (Māhele information –Boundary Commission Testimonies, Land Commission Awards, Native & Foreign Testimonies and Registers, Government Land Grants, Crown lands),
- Archaeological information pertaining to cultural and historic sites within the project area and vicinity in order to understand existing as well as the potential for additional wahi kūpuna/historic properties
- Wahi kūpuna stewardship best practices and historic preservation compliance recommendations

Additionally, a remote public records search of the SHPD archives, University of Hawai‘i at Mānoa Hamilton Library and Bishop Museum Archives for previous academic and compliance archaeological studies associated with the project area and vicinity in Wailuku Ahupua‘a was conducted in May and June 2023. The Maui Historical Society’s (MHS) website indicated their holdings were closed to research, and June 2023 email inquiries to the MHS from Nohopapa Hawai‘i regarding research access or enlisting the MHS’s research services received no response.

Community Engagement Methods

Community engagement efforts were conducted from November 2023 to February 2024. The ethnographic process consisted of identifying appropriate and knowledgeable individuals, encouraging their active participation, gathering community mana‘o via phone calls and emails, and summarizing the mana‘o to include in the report.

Scoping for this project involved identifying and contacting interested and knowledgeable individuals recognized as having genealogical, cultural, and/or historical connections to the project area in the ahupua‘a of Wailuku on the island of Maui. Initial scoping methods included emailing and mailing letters (Appendix A: Community Participation Letter; Appendix B: Interview Themes and Questions) to inform individuals of the project, contacting individuals by

telephone, and/or meeting with individuals in person to discuss the project. Participants were selected because of their familiarity with or knowledge of the project area. An interview was completed with one individual for this study (see Table 4 in the Community Ethnography section).

Throughout the study, and particularly before any meetings or interviews, it was carefully explained to all participants that their involvement in the study was voluntary. An informed consent process was initiated and completed, including providing ample project background information. The informed consent form (Appendix C: Informed Consent Form) included the participant's rights including notification that participants could choose to remain anonymous. Project background information included explaining the study focus and the purpose and importance of the study. After proper notification and discussion, the interview participants voluntarily provided verbal consent for Nohopapa Hawai'i to use their mana'o for the project and signed the requisite informed consent forms. All the interviews were scheduled and arranged for the participant's convenience, and none of the interviews was initiated until participants felt comfortable and completely satisfied with the process.

Community engagement for this study occurred from November 2023 to March 2024. One individual completed an interview (see Appendix B for questions used). During ethnographic interviews for this study, Nohopapa Hawai'i staff members noted that community members who participated in interviews acquired their knowledge about the project area and vicinity from:

1) 'Ohana knowledge or personal, historical knowledge and information passed on within the 'ohana from one generation to the next.
2) Knowledge obtained from individuals outside their 'ohana such as teachers, cultural practitioners, and kūpuna (esteemed elders).
3) Knowledge obtained through written sources such as books, documents, newspapers, reports, and studies.
4) Knowledge gathered through personal experience, observations, and practices growing up in the area (such as knowledge acquired through cultural work and practices within or near the project area).

Cultural Impact Assessment Methods

Mana'o generously shared by consultees during the ethnographic interviews described above was reviewed and summarized for information, perspectives, and opinions regarding:

- The cultural resources (defined as practices, beliefs, and features), and their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the broader site;
- The nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project;
- An explanation of confidential information, if any, that has been withheld from public disclosure in the assessment; and,
- A discussion concerning any conflicting information, if applicable, in regard to identified cultural resources, practices, and beliefs.

An assessment of cultural impacts by the proposed project to cultural resources – defined as practices, beliefs, and features – within the project area was performed via synthesis and discussion of consultation mana'o gathered and summarized. The scope of the analysis was commensurate to the breadth and depth of information gathered during consultation. In this instance, the effort included consideration and discussion of:

- The potential effect of any proposed physical alteration on cultural resources (defined as practices, beliefs, and features);
- The potential of the proposed action to isolate cultural resources from their setting; and,
- The potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.

Additionally, consultees were invited to share concerns and recommendations related to cultural impacts by the proposed project to cultural resources – defined as practices, beliefs, and features – within the project area. This included feedback regarding:

- How the project might impact iwi kupuna (Native Hawaiian ancestral remains), wahi kupuna (Native Hawaiian ancestral places(and other cultural resources within or around the project area;
- Anticipated adverse impacts to cultural resources resulting from the proposed project;
- Solutions that would address any concerns shared;
- Preferred alternatives to the proposed project;
- Any preferred or desired mitigation (defined as actions that avoid, minimize, rectify, or reduce the impacts of a project) measures relative to the impacts posed by the proposed project.

NATURAL LANDSCAPE AND RESOURCES

Cultural Landscape

This section describes the cultural landscape of the project area, including its topography (general elevations, distance inland, and general terrain patterns), vegetation, geology and soils, climate (including rainfall and winds), and hydrology.

The project area is located in Wailuku Ahupuaʻa, Wailuku Moku, at an elevation of 22 to 25 m (72.2 to 16.4 ft) above mean sea level (Google Earth 2023). It occupies an undeveloped tract of land within the Maui High School grounds, in the northern reaches of the Central Maui Plains and sand dune system. The general area has an average high temperature of 23.63° C (74.53° F), and receives approximately 436 mm (17.2 inches) of rain per year (Giambelluca et al. 2013; Geography Department UHM 2023).

The ahupuaʻa of Wailuku, location of the project area, is the largest land division within the moku of Wailuku. It straddles Kahului Harbor, and is bounded to the east by the lands within the moku of Hāmākuapoko and Kula, to the south by Waikapū Ahupuaʻa, and to the west by the ahupuaʻa of Waiehu, both in Wailuku Moku. Lands within the moku of Kaʻanapali and Lāhainā abut the western boundary of Wailuku Ahupuaʻa. The ahupuaʻa encompasses the waters of Kahului Harbor, the Central Maui Plains as well as the eastern reaches of the West Maui Mountains and lands on the western slopes of Haleakalā (Handy, Handy, and Pukui 1972: 510, 511; Google Earth 2023). Hawaiian oral tradition describes Wailuku, along with the ahupuaʻa of Waikapū, Waiehu, and Waiheʻe as "na wai ʻehā (The four waters)", which twentieth century Hawaiian Bishop Museum ethnographer Mary Kawena Pukui (1983: 251, #2300) describes as "[a] poetic term for these places on Maui:, each of which has a flowing water (wai)." Another ʻōlelo noʻeau (Hawaiian proverb or poetical saying) reads "Wailuku i ka malu he kuawa (Wailuku in the shelter of the valleys)" and describes the land division as "repos[ing] in the shelter of the clouds and the valley," Pukui (1983:319, #2912). The project area is located in the Central Maui Plains. A Hawaiian oral tradition gathered and published by nineteenth century foreign researcher Abraham Fornander in his *Collection of Hawaiian Antiquities and Folklore* describes the project area's locale and its character-defining features: "Wailuku is the source of the flying clouds. It is a broad plain where councils are held," (Fornander 1917[4]:304).

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the primary soil in the project area and vicinity is Puuone sand (PZUE), 7 to 30 percent slopes (Figure 6). Foote et al. (1972:117) describe Puuone sand soils as consisting of "somewhat excessively drained soils on low uplands," that "developed in material derived from coral and seashells." Foote et al. (1972:117) further describe PZUE as "on sandhills near the ocean," with a surface layer that is "grayish-brown, calcerous sand about 20 inches thick. This is underlain by grayish-brown, cemented sand. The soil is moderately alkaline in the surface layer".

Jaucas sand (JaC) is also present in the study area, with deposits northwest and southeast of the proposed project area. Foote et al. (1972:48) describe Jaucas sand soils as consisting of "excessively drained, calcerous soils that occur as narrow strips on coastal plains, adjacent to the ocean." Foote et al. (1972:48) further describe JaC as "single gran, pale brown to very pale brown, sandy, and more than 60 inches deep. In many places the surface layer is dark brown as a result

of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile."

Rains And Winds

Native Hawaiians respected nature because as kānaka, they are related to all that surrounds them - to plants and creatures, rocks and sea, sky and earth, and to natural phenomena, including rain and wind. With an intimate relationship to their environment, Native Hawaiians have a vast vocabulary for weather and a nuanced understanding of the winds and rains of their home. Like place names (see discussion in Cultural Historical Overview section of this report), winds and rains acted as mnemonic devices facilitating the recollection of the places they occurred (Olivera 2014:89,90).

Some rain names and wind names associated with Wailuku, Maui, were revealed during background research for this report. The selection discussed below is a surface overview and starting point for further research, not a comprehensive inventory. More Wailuku wind and rain names undoubtedly exist. The makani (winds) and ua (rains) featured here were integrated into dynamic, storied, intertwined Hawaiian ocean, land, and skyscapes. They are emblems and vehicles of Hawaiian ancestral knowledge as well as cultural beliefs, practices, and relationship to ʻāina.

Named rains of Wailuku Ahupuaʻa include the Kiliʻoʻopu, ʻUlalena, Nāulu, and Uhiwai. The Kiliʻoʻopu is a rain and wind (Akana and Gonzalez 2015: 83, 84). Akana and Gonzalez (2015:262, 267) translate ʻUlalena to mean "yellowish-red," and affiliate it with Wailuku. The widespread Nāʻulu is defined as a "sudden shower" as well as a cloud and wind type (Akana and Gonzalez 2015: 187). Uhiwai is a mist specifically associated with ʻĪao Valley (Pukui and Elbert 1986:364). Iʻa-iki is named as the wind of Wailuku in the nineteenth and twentieth century Hawaiian language newspaper editor and government official Moses Kuaea Nakuina's version of the moʻolelo *The Wind Gourd of Laʻamaomao* (Nakuina [Mookini and Nākao, trans.] 2005:55). Oral history shared by Rebecca Nuuhiwa (n.d. in Sterling 1998:63) names Wailuku's wind as "the Makani-lawe-malie, the wind that takes it easy." Relatedly, James Kahale's mele published in 1948 describes Wailuku's wind, also called Wailuku, as "easygoing," (Kahale n.d. in Clark 1989:4).

Vegetation

Indigenous and invasive plant species are associated with Wailuku Ahupuaʻa and the project area and vicinity (

Table 1). Background research performed for this report identified indigenous plants linked to the project area vicinity in Wailuku cited in twentieth century surveys and studies (e.g. Foote et al. 1972; Handy, Handy, and Pukui 1972; Krauss 1993). Hawaiians engineered an expansive taro (*Colocasia esculenta* spp.) cultivation system in Waiheʻe, Waiehu, Wailuku, and Waikapū that was contiguous and at one point the largest in the archipelago (Handy, Handy, and Pukui 1972:488, 496). Breadfruit (*Artocarpus altilis* spp.) was cultivated in the Wailuku lowlands and plains while dried taro fields may also have been planted with bananas (*Musa* spp.; Handy, Handy, and Pukui 1972:153, 162). Foote et al. 1972:48, 117 associate invasive trees like kiawe (*Prosopis pallida*), and koa haole (foreign koa; Leucaena), as well as bristly foxtail (*Cenchrus ciliaris*), Bermuda grass fingergrass (*Digitaria eriantha)*, Australian saltbush (*Atriplex semibaccata*), and lantana (*Lantana camara*) with soils found in the project area and vicinity.

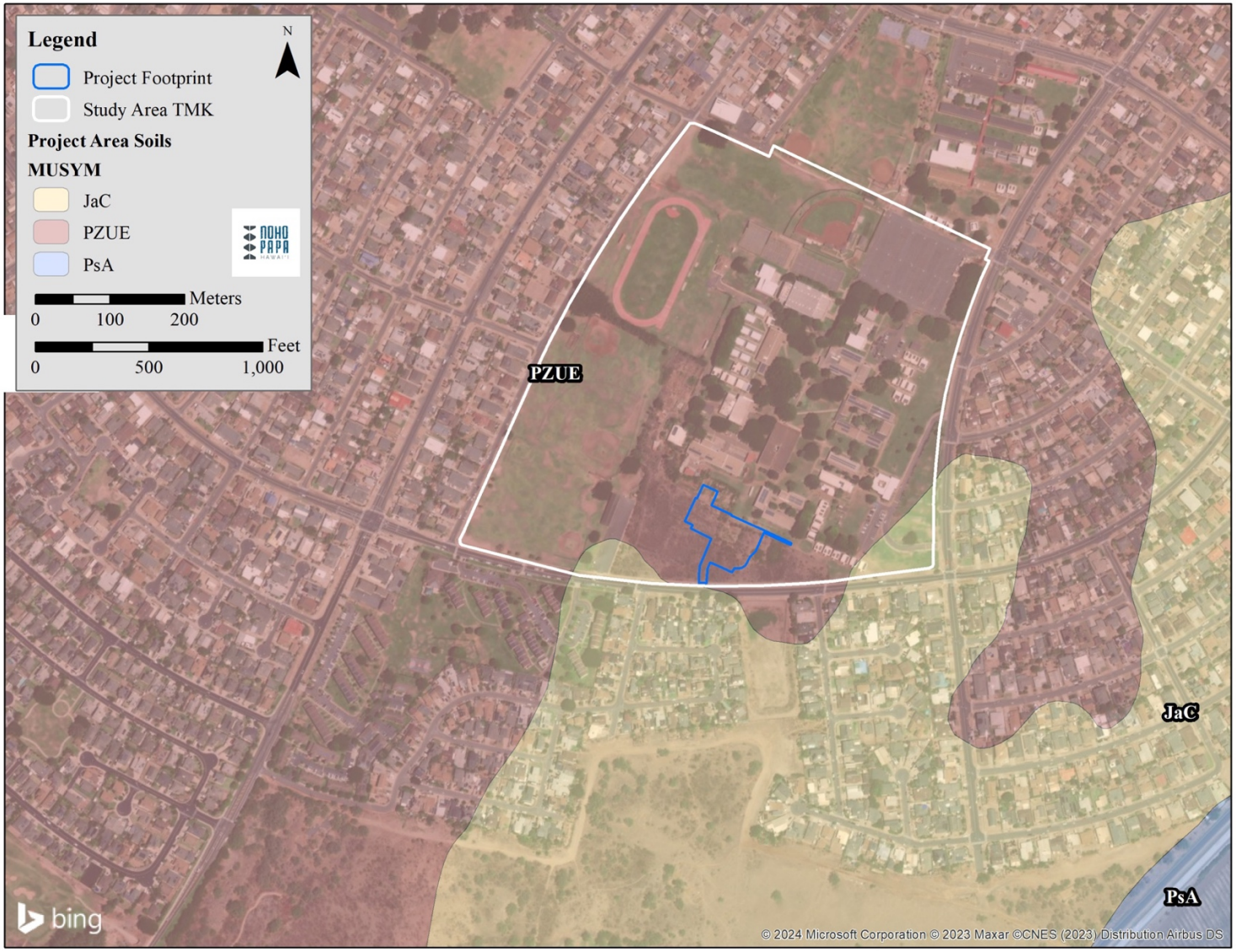

Figure 6. Overlay of Soil Survey of the State of Hawai‘i (Sato et al. 1973), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001).

Table 1. Table of Endemic and Indigenous Plant Species Associated With the Project Area

Plant Species	Status	Use	Existing in project area	Existing in surrounding area	Previously existing in project area	Previously existing in surrounding area	Citation
Ground Cover/Ferns/Herbs							
Kalo Taro (*Colocasia esculenta* spp.)	Indigenous	Cultural and food staple				X	Handy, Handy, and Pukui 1972:488, 496; Abbott 1992:23; Krauss 1993:178,179
Overstory							
ʻUlu Breadfruit (*Artocarpus altilis* spp.)	Indigenous	Food, wood				X	Handy, Handy, and Pukui 1972:153; Krauss 1993:314
Maiʻa Bananas (*Musa* spp.)	Indigenous	Food				X	Handy, Handy, and Pukui 1972:162; Krauss 1993: 221, 222

CULTURAL LANDSCAPE

An intertwined and contiguous array of significant cultural features and resources constitute the Hawaiian cultural landscape of the project area and vicinity in Wailuku Ahupuaʻa, Wailuku Moku, Maui Mokupuni. Hawaiian oral traditions used to relay ʻike kupuna (ancestral knowledge) and ways of knowing across centuries and generations – from the past through today – are utilized to contextualize the project area in its Hawaiian cultural landscape. These include historical information passed from one generation to the next and transcribed beginning in the nineteenth century through contemporary times. Hawaiian oral traditions relay understandings of things including but not limited to Hawaiian spirituality, culture and cultural practice, history, unique cultural relationships to place and ʻāina, systems of traditional land tenure, sustainability and use, the trajectories of communities, and lives of individuals throughout the pae ʻāina.

Wahi Kūpuna

Wahi kūpuna are special ancestral spaces and places where Native Hawaiians maintain relationships to the past and foster their identity and well-being in the present (The Kaliʻuokapaʻakai Collective 2021:4). As cultural anchors to place, ancestral knowledge and practices, wahi kūpuna are strikingly similar to Traditional Cultural Properties defined by the National Park Service as places associated with the cultural practices or beliefs of a living community that are both rooted in a community's history and important in maintaining its continued cultural identity (Parker and King 1998:1).

Wahi kūpuna and wahi pana (storied places) comprise component parts and/or entire contiguous Hawaiian cultural land, sea, and skyscapes (Pukui, Elbert, and Mookini 1974: x- xii; Oliveira 2014: 78, 79; The Kaliʻuokapaʻakai Collective 2021). Place names embody and perpetuate Hawaiian cultural history, knowledge, and practice. As explained by Oliveira (2014:78): "To Kānaka and other indigenous peoples who share a close connection to their land and use oral traditions to record their history, place names and landmarks serve as triggers for the memory, mapping the environment and ultimately the tradition and culture of a people." Wahi pana and wahi kūpuna are special places and spaces. As noted by Maly and Maly (2022:14,15): "Names would not have been given to – or remembered if they were – mere worthless pieces of topography". Traditional nomenclature indicates the variety of functions that named localities served, such as describing a particular feature of the landscape; indicating a site of cultural and ceremonial significance; recording particular events or practices that occurred in that given area; revealing the source of a natural resource or other materials necessary for a cultural practice; marking trails and trailside resting places; signifying triangulation points for cultural practices; giving notice of residences; showing the use of an area; and recording a notable event that occurred in the area (Maly 2022:14, 15).

Examples specific to Wailuku, Maui, location of the current project and study areas, illustrate the broad genealogical, biographical, and geographical significance and interconnectedness of wahi kūpuna. In the article series "Ka Moʻolelo Hawaiʻi" authored by Nineteenth century Hawaiian scholar Samuel Mānaiakalani Kamakau and originally published in the Hawaiian language newspaper *Ke Au Okoa* from 1869–1871, ruling chief Kapawa is identified as an important historical example of: "Iā Kapaka ka mālama ʻana mai, a me ka hoʻomanaʻo ʻana o ka poʻe kahiko i kahi i hānau ai kēlā aliʻi kēia aliʻi," (Kamakau 1869); "During the time of Kapawa the care of the traditions [began], and traditional society recorded the places that each chief was born," (translated by Kalamaʻehu Takahashi).

The mele below identifies the place of Kapawa's birth at Kūkaniloko, and the location of his death and burial, described by a series of epithets that carefully identifies a sacred burial place in the moku of Wailuku:

ʻO Kapawa ʻo ke aliʻi o Waialua,
I hānau i Kūkaniloko,
ʻO Wahiawā ke kahua
ʻO Līhuʻe ke ēwe
ʻO Kaʻala ka piko
ʻO Kapukapuākea ka ʻaʻa,
ʻO Kaiaka i Māeaea,
Hāʻule i Nūkea i Wainakia,
I ʻAʻaka i Hāleu,
I ka laʻi malino o Hauola,
Ke aliʻi ʻo Kapawa, hoʻi nō,
Hoʻi nō i uka ka waihona,
Hoʻi nō i ka pali kapu o nā aliʻi,
He kiaʻi Kalakahi no Kakaʻe,
ʻO Heleipawa ke keiki a Kapawa,
He keiki aliʻi no Waialua i Oʻahu.
[Kamakau 1869]

This mele for Kapawa is important because, as Hawaiian Studies and Law Professor Malia Akutagawa and Natasha Baldauf, the authors of the 2013 *Hoʻi Hou i Ka Iwikuamoʻo: A Legal Primer for the Protection of Iwi Kūpuna in Hawaiʻi Nei* assert: "The burial of iwi impart the mana of the deceased to that particular ground, to that specific ahupuaʻa (land division), and to the island itself" (Baldauf and Akutagawa 2013:6). The connectivity of wahi kūpuna are further reflected in W. D. Alexander's description of the unique relationship the moku of Wailuku to the history of land tenure in Hawaiʻi:

> On Maui ·the lands of Waikapu and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two ahupuaas, together with Waiehu and Waihee, which were independent, belonging to no Moku, were called Na Poko, and have been formed into a district in modern times. [Alexander 1891 in Thrum 1891:106]

The arrangement of each historical layer is the key towards understanding the project area's relationship to the holistic history of this heavily urbanized region. The accounts of intensively cultivated inland regions with highly complex agriculture and noted aquaculture systems, shoreline resource cultivation, and numerous religious sites outlined here provide more points of reference across the landscape to further reinforce the cultural themes and interconnectivity of the project area to its surrounding landscape.

Place names of Wailuku Ahupuaʻa relay cultural knowledge and relationship to place. Table 2, below, features a selection of wahi kūpuna of Wailuku Ahupuaʻa, Wailuku Moku, Maui. Wailuku Ahupuaʻa includes the valley of ʻĪao, which drains the waters from the west-side mountain of the same name into Wailuku River, which meets the ocean near Nehe Point just north of Kahului Harbor. Pukui, Elbert, and Mookini (1974:225) translate Wailuku as "waters of destruction," with the word 'luku' meaning "massacre, slaughter, destruction; to massacre, destroy, slaughter, lay waste, devastate, exterminate, ravage. Mea luku wale, vandal, one who destroys needlessly. Hele

luku, go on a raid…" (Ulukau 2023). A possible interpretation is that "luku" refers to the violence and intensity of the Wailuku River during heavy rain events. The name is also appropriate as significant battles took place within Wailuku Ahupuaʻa.

Ke Kula o Kamaʻomaʻo is a name for the central plains of the isthmus region of Maui. These dune systems are famed sites in the historical accounts of the battles that took place on the plains and in valley interiors of the upland regions. An important cultural function of the dune system is the interment of the remains of the deceased, mainly iwi (bones). Kamakau offers valuable firsthand knowledge of Hawaiian society, values, and cultural practices applicable to the project area and vicinity whose natural sand dunes are known to contain burials. Kamakau writes:"ʻO ia he wa kuapapa nui a maluhia ke aupuni, ʻo ia ka wā i kanu pono ʻia nā kupapaʻu, (It was a time of tranquility and security of the nation, a time when the deceased were properly buried)" (Kamakau 1870; translated by Kalamaʻehu Takahashi). The particular reverence held for the final resting places in the same regard for those interred is an important aspect of culture that should be respected, adopted, and applied to areas where reconciliation and respectful avoidance of burials are possible. Writing in the mid-nineteenth century, minister George Washington Bates describes the characteristics of Maui's Central Plains:

> It is a sandy alluvial, constantly changing the configuration of its surface beneath the action of heavy winds. This neck of land has a gradual elevation from the sea-shore on the southwest, to nearly two hundred feet on the northeast, in the region of Wai-lu-ku. In extent it is seven miles by twelve… distinctly marked by moving sand-hills, which owe their formation to the action of the northeast trades. Here these winds blow almost with the violence of a sirocco, and clouds of sand are carried across the northern side of the isthmus to a height of several hundred feet. These sand-hills constitute a huge "Golgotha" for thousands of warriors who fell in ancient battles. In places laid bare by the action of the winds, there were human skeletons projecting, as if in the act of struggling for a resurrection from their lurid sepulchres. In many portions of the plain whole cart-loads were exposed in this way. Judging of the numbers of the dead, the contests of the old Hawaiians must have been exceedingly bloody …. [Bates 1854 in Sterling 1998:92]

Table 2.Wahi Kūpuna of Wailuku Ahupuaʻa, Wailuku Moku, Maui

Inoa (name)	Possible Translation	Description and Location
ʻĀalalōloa	Translated in Clark (1989:52) as "long path of rough lava."	According to Clark (1989:52), the name for "an extensive range of hills and rocky sea cliffs between Māʻalaea and Pāpalaua."
Hekuawa	--	"Tomorrow we will drink the waters of Wailuku and rest in the shade of Hekuawa," (Kamakau 1992:87).
ʻIao	--	Valley and Peak, West Maui (Pukui, Elbert, and Mookini 1976:55)
Kaihuwaʻa	"The bow of a canoe, bowsprit," Pukuʻi and Elbert	ʻIli ʻĀina, Kahului
Māʻalaea (Kamaalaea)	Described by Pukui, Elbert, and Mookini (1974:137) as a possible a contraction of "Makaʻalaea," meaning "ocherous earth beginnings." Kamakau	Described by Pukui, Elbert, and Mookini (1974:137) as a "bay, village, and boat harbor, Maui isthmus."
Nā Poko	--	"..the lands of Waikapu and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two ahupuaa, together with Waiehu and Waihee, which were independent, belonging to no Moku, were called. Na Poko, and have been formed into a district in modern times." (Alexander 1891 in Thrum 1891:106)
Paʻuniu	--	Secret hidden burial area of Lonoapiʻilani (Kamakau 1870)
Palalau	Literally translated as "yellow leaf," (Pukui, Elbert, and Mookini 1974:76).	Described as the Māʻalaea coastal area in Pukui, Elbert, Mookini (1974:176). Another name for the shoreline at Māʻalaea per Clark (1989:50).
Papalekailiu	--	Uaua (1871) "When Ka-nene-nui-a-ka-wai-kalu was chief of Maui, there lived a certain noted man, Kapoi and wife in Wailuku. Wife goes to plain of Papalekailiu to catch uhini (locusts).
Pihana	--	(Thrum 1909:45)

Inoa (name)	Possible Translation	Description and Location
Kahaluʻu	--	Sandhills of region described where the Poʻouahi and Niuʻula divisions of Kahekiliʻs forces ambushed the Alapa forces of Kalaniʻopuʻu (Kamakau 1992:85).
Kahului	--	Town, elementary school, port, bay, railroad, and surfing area known as Kahului breakwater (Finney 1959:108)
Kalua	--	Sandhill region where the Poʻouahi and Niuʻula divisions of Kahekiliʻs forces slew the Alapa forces of Kalaniʻopuʻu (Kamakau 1992:85) . Ahulau ka Piʻipiʻi i Kakanilua, the slaugther at the battle of Kakanilua. (Kamakau 1992:86).
Kamaʻomaʻo	--	(Kamakau 1992: 85) Plain marched by Alapa warriors of Kalaniʻōpuʻu Ahulau ka Piʻipiʻi i Kakanilua, the slaugther at the battle of Kakanilua, (Kamakau 1992: 86).
Puʻuʻainako (Puʻuʻāinakō/ Puʻuʻainakō)	Cane trash hill (Kamakau 1992:85)	Kamakau (1992:85) lists Puʻuʻainako along the march of the Alapa warriors.
Wailuku	Pukui, Elbert, and Mookini (1974:225) translate Wailuku as “water of destruction.”	Moku, ahupuaʻ a, location of an eighteenth century battle (Pukui, Elbert, and Mookini 1974:225).

The major battle events connect larger land divisions, multiple ahupuaʻa and moku, but Ke Kula o Kamaʻomaʻo is a focal point because of the location of the project area specifically within the broader region of the coastal sand dunes system. Pukui (1983: 189, #1761) wrote that "[t]he plain of Kamaʻomaʻo, Maui, was said to be the haunt of ghosts whose activities were often terrifying." Ke Kula o Kamaʻomaʻo is also significant because of its central cultural historical relevance to other localities within the ahupuaʻa of Wailuku, the greater moku of Wailuku, and the island of Maui.

The valley of ʻIao and the ahupuaʻa and moku of Wailuku were heavily cultivated and settled in the pre-contact era: "the whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty," (Cheever 1851:124). On the basis of archaeological, ecological, and ethnographic evidence, Bishop Museum research affiliate E.S. Craighill Handy wrote of Wailuku:

> This is the third of 'The Four Streams," the great torrent that drains the highest cloud-capped uplands of western Maui through deep Iao Valley. Much of the upper section of what is now the city of Wailuku is built on old terrace sites. Along the broad stream bed of Iao Valley, extending several miles up and inland, the carefully leveled and stone-encased terraces may be seen. In the lower section of the valley these broad terraces now serve as sites for camps 10 and 6 of Wailuku Sugar Plantation… A little farther up, neat private homes and vegetable and flower gardens cover these old taro terraces; while at their upper limit the terraces are submerged in guava thickets. [Handy 1940:108]

The valley interiors of Nā Wai ʻEhā were not the only areas of cultivation within Wailuku Moku. The main aquaculture feature of the Kahului region werere the fishponds Kanahā and Mauʻoni. Kamakau (1992:42) credits Maui's ruling chief Kihapiʻilani with its construction and notes he was living in Kahului during the construction of the ponds. Kamakau recorded a visit of Keawenuiaʻumi to Maui to meet with Kihapiʻilani:

> Keawe-nui-a-'Umi sailed from Hilo to Kapuʻekahi [Kapueokahi] in Hana and from Hana to Kahului of Wailuku. There the chief of Hawaii met Kiha-a-Pi'ilani, ruler of Maui. Kiha-aPi'ilani was building the walls of the pond of Mau'oni. A wide expanse of water lay between Kaipu'ula and Kanaha, and the sea swept into Mau'oni. The two ruling chiefs met and greeted each other with affection. [Kamakau 1992:42]

These abundant food systems sustained large populations and required meticulous planning and an immense amount of collective labor. An account of a wahine named Puea-a-Makakaualii identified Kapiʻiohookalani, a chief of Oʻahu and a portion of Molokaʻi as the chief that commissioned its construction and details of the large workforce:

> Tradition relates that the laborers stood so closely together that they passed the stones from hand to hand. The line extended from Makawela (the sea fishery at the sea base of the Wailuku road, as you turn in to Kahului) to Kanaha. …with such a multitude to feed, the nehu and opae were most suitable as being obtainable in quantity. At times the men had only one nehu each for a meal and had to fill up with sea-weed and salt, hence the saying "Kakahi ka nehu a Kapiioho." [Blaisdell 1923 in Sterling 1998:87]

Hawaiian Oral Traditions

Hawaiian oral traditions are streams of information that have been passed down by word of mouth from one generation to the next and recorded in more contemporary times. Hawaiian oral traditions provide a general sense of Native Hawaiian history, their connection to land, how they lived, and their traditional land tenure. These Hawaiian oral traditions come in the forms of oli (chants), mele (songs), ʻōlelo noʻeau (proverbs and poetical sayings), moʻolelo (stories), moʻokūauhau (genealogies), and nūpepa (Hawaiian language newspapers). These forms of oral traditions can be woven into each other. For instance, a moʻolelo may present a mele or oli about a moʻokūʻauhau. Essentially, these oral traditions are vehicles for intergenerational transmission of knowledge that ensures the survival of cultural beliefs, practices, and traditions. They are a direct link to experience Hawaiʻi through a timeless bridge of cultural insights that have guided Hawaiians for generations. The Hawaiian oral traditions gathered below relay information regarding resources of the land, akua (gods), kupua (shapeshifting demigods), ʻaumākua (familial guardians), aliʻi (chiefs), and ka poʻe kānaka (the Hawaiian people) whose stories weave a unique and treasured history of this ʻāina (cultural landscape).

Moʻolelo and Kaʻao

Moʻolelo (narratives) and kaʻao (histories), which are more flexible in structure, version, and meaning, are the second type of Hawaiian oral traditions – verbal testimonies or reported statements concerning the past," and ʻike kūpuna (Kikiloi 2010:78).

Amongst all of the vivid detail of the battles that ensued on the Central Maui Plains which claimed many warriors and chiefs then laid to rest at Kamaʻomaʻo, the procession of aliʻi after their passing on the way to sacred inland burial sites offers insight into other wahi kūpuna within the moku along the procession. The following is an account of the death and procession of the great Maui chief Kekaulike recorded by Kamakau:

> "The chiefs then prepared a manele or palanquin to carry the sick King overland and at a place called Halekii the King expired. This happened in 1736. The High Chiefs being in fear of Alapainui coming to do battle with them, they immediately performed the sacred ceremonies… and decided to take the royal remains to Iao. They again embarked landing at Kapoli in Maalaea, thence to Puuhele,Kaluamanu, Waikapu, Wahanemaili, Kaumuilio, Aoakamanu, Puuelinapao, Kaumulanahu, Kapohakai, Kalua, Kekio, Kamaauwai, Kahua at Kailipoe, Kalihi at Kaluaoiki. Along the route relays of high chiefs bore the remains of their beloved sovereign to Kihahale, at Ahuwahine they rested, thence to Loiloa where the royal remains were placed in Kapela Kapu o Kakae, the sacred sepuluture of the sovereigns and the blue blood of Mauiʻs nobility." [Henriques 1916 in Sterling 1998:80]

From 1775–1779, conflict between ruling chiefs occurred on the Central Maui Plains as well as other locations between Kalaniʻopuʻu and Kahekili (Kamakau 1992:85). Kalaniʻōpuʻu and his forces, the ʻĀlapa and Pipiʻi landed in the moku of Honuaʻula at Keoneʻōʻio in and extended to Mākena. All were eager, thirsting for battle with the collective desire to "drink the waters of Wailuku,"[victory] (Kamakau 1992:85). After ravaging the population there, Kahekili prepared his forces the Niuʻula and Poʻouahi. Occupying the area of Kīheipūkoʻa, to the south east of Waikapū, the forces of Kalaniʻoʻpuʻu marched northwest towards Wailuku crossing the plains of Puʻuʻainako and Kamaʻomaʻo. They met their demise at the hands of the Poʻouahi and Niuʻula divisions of Kahekiliʻs army at the sandhills of Kahaluʻu and Kalua. There were two survivors that reported back to a prematurely celebrating Kalaniʻopuʻu who immediately broke out into

hysterical wailing, mourning the loss of his most coveted forces. This was a particularly disheartening defeat as he and his entire alo aliʻi had full confidence in their victory (Kamakau 1992:85–87).

Oli, Mele, and ʻŌlelo Noʻeau

Kikiloi (2010:78) defines Hawaiian oral traditions as "verbal testimonies or reported statements concerning the past," and ʻike kūpuna and divides them into two types. One group of Hawaiian oral traditions identified by Kikiloi (2010:79) include oli (*chants*), mele (*songs*), and ʻōlelo noʻeau (*proverbs*) which are short, reproduced through strict protocol, and often "part of sacred learning or tradition," Kikiloi (2010:78).

Nogelmeier (2001:vii, 1) defines mele as "Hawaiian poetic compositions to be performed as chants or dances," and "both an art and an ancient tradition…". The ancient, pan-Pacific roots, developmental trajectory, and depth and breadth of the Hawaiian oral tradition is synthesized by Nogelmeier:

> Before Europeans arrived in the Islands, poetry was part of the vast collective repository of oral tradition necessary for social continuity in such a complex oral culture. Poetic form was useful for remembering genealogies and for documenting historical events; combined into histories and legends, this kind of poetry has been recorded throughout the many Pacific cultures. Eventual interior changes in Hawaiian society certainly affected the uses of poetry, fostering its status in the protocols of royal court and religious ceremony and at the same time expanding the practice and appreciation of the art throughout the general population. Whether recited as prayer or invocation, intoned in chant without accompaniment, or presented through dancers as a hula, poetic compositions were called *mele*. Expressing the skills of the poet and the reciter, the art came to be widely embraced; poetic presentation, as pleasant pastime and formal purpose, became a social norm. [Nogelmeier: 2001:1]

ʻŌlelo noʻeau, or Hawaiian proverbs and poetical sayings, are valuable in perpetuating Hawaiian cultural knowledge, presenting layers of kaona (*meaning*), and illustrating creative expressions that incorporate observational knowledge with cultural values, history, knowledge, and humor. Today, they serve as a traditional source to learn about the communities, people, places, histories, and environments of Hawaiʻi.

Notably, Ka pela kapu o Kakaʻe at ʻĪao Valley, in Wailuku Moku,is identified in the ʻōlelo noʻeau below as a sacred burial place of the chiefs of old:

Papani ka uka o Kapela; puaʻi hānono wai ʻole Kukaniloko; pakī hunahuna ʻole o Holoholokū; ʻaʻohe mea nana e ʻaʻeʻ paepae kapu o Līloa.
Close the upland of Kapela; no red water gushes from Kukaniloko; not a particle issues from Holoholokū; there is none to step over the sacred platform of Līloa.
…the descendants are no longer laid to rest at Ka-pela-kapu-o-Kakaʻe at ʻĪao, the descendants no longer point to Kukaniloko on Oʻahu and Holoholokū on Kauaʻi as the sacred birthplaces; there is no one to tread on the sacred places in Waipiʻo, Hawaiʻi, where Līloa dwelt.
[Pukui 1983: 286, #2602]

Although the ʻōlelo noʻeau relays a degree of loss, the descendants prevail. Preservation of these wahi kūpuna, their histories, in all themes and tones, is what further ingrain the intimate details of our relationship with these spaces.

Another ʻōlelo noʻeau mentions the sacred nature of ʻĪao Valley are gathered below:

Ka Malu ao o na pali kapu o Kakaʻe.
The Cloud Shelter of the sacred cliffs of Kakaʻe.
Kakaʻe, an ancient ruler of Maui, was buried in ʻĪao Valley, and the place was given his name. It was known as Na-pali-Kapu-o-Kakaʻe (Kakaʻe's Sacred Precipice) or Na-pela-kapu-o-Kakaʻe. Since that time, many high chiefs have shared his burial place.
[Pukui 1983: 159, #1473]

Battles are another prevalent theme in ʻōlelo noʻeau for Wailuku Moku:

Ahulau ka Piʻipiʻi i Kakanilua,
A slaughter of the Piʻipiʻi at Kakanilua.
In the battle between Kahekili of Maui and Kalaniʻōpuʻu of Hawaiʻi, on the sand dunes of Wailuku, Maui there was a great slaughter of Hawaiʻi warriors who were called the Piʻipiʻi. Any great slaughter might be compared to the slaugther of the Piʻipiʻi.
[Pukui 1983:5, #19]

Ke inu aku la paha aʻu ʻĀlapa i ka wai o Wailuku.
My ʻĀlapa warriors must now be drinking the water of Wailuku. Said when an unexpected success has turned into failure.
This was a remark made by Kalaniōpuʻu to his wife Kalola and son Kiwalaʻō, in the belief that his selected warriors, the ʻĀlapa, were winning in their battle against Kahekili. Instead they were utterly destroyed.
[Pukui 1983: 184, #1711]

Wehe i ka mākāhā i komo ka iʻa.
Open the sluice gate that the fish may enter.
This was uttered by Kaleopuʻupuʻu, priest of Kahekili, after the dedication of the heiau of Kaluli, at Puʻuʻohala on the north side of Wailuku, Maui. A second invasion from Kalaniōpuʻu of Hawaiʻi was expected, and the priest declared that they were now ready to trap the invaders, like fish inside the pond. The saying refers to the application of strategy to trap the enemy.
[Pukui 1983:320, #2923]

Select additional ʻōlelo noʻeau commemorate resources and features of Wailuku Moku:

Na wai ʻehā.
The four wai.
A poetic term for these places on Maui: Wailuku, Waiehu, Waiheʻe, Waikapū, each of which has a flowing water (wai).
[Pukui 1983:251, #2300]

Ke alanui pali o ʻAʻalaloa.
The cliff trail of ʻAʻalaloa.
A well-known trail from Wailuku to Lahaina.
[Pukui, 1983:181, #1675]

Pili ka hanu o Wailuku. Wailuku holds its breath. Said of one who is speechless or petrified with either fear or extreme cold. There is a play on luku (destruction). Refers to Wailuku, Maui. (Pukui 1983, 290, 2647)

Ke kula o Kamaʻomaʻo ka ʻāina huli hana.

The plain of Kamaʻomaʻo —that is the place where plenty of work is to be found.
A taunt of one who talks of looking for work but does not do it. The plain of Kamaʻomaʻo, Maui, was said to be the haunt of ghosts whose activities were often terrifying.
[Pukui 1983: 189, #1761).

Kaʻōlohe puka awakea o Kamaʻomaʻo.
The bare one of Kamaʻomaʻo that appears at noonday.
The plain of Kamaʻomaʻo, Muia, is said to be the haunt of ghosts (ʻōlohe) who appear at night or at noon. Also a play on ʻōlohe (nude), applied to one who appears unclothed.
[Pukui 1983: 164,#1514)

HISTORICAL LANDSCAPE

Early Historical Period

During the 18th century, Wailuku was a known location of Hawaiian settlements. Writes Kamakau:

> In the year 1765 a quarrel arose among the descendants of the chief Ke-kau-like Ka-lani-kuʻi-hono-i-ka-moku. Ka-hekili was living at Pihana, at Pukukalo, and at Wailuku with the chiefs, his companions and favorites, and his warriors, Ka-niu-ʻula and Ke-poʻo-uahi. The chiefs of Wailuku passed their time in the surf of Kehu and Kaʻakau... [Kamakau 1961:83]

Hawaiian ethnographer Mary Kawena Pukui collaborated with E.S. Craighill Handy and Elizabeth Green Handy on the 1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. They identify Kahului as a possible location for early Hawaiian settlement with its "protected bay and beach areas where fresh water was available and where there was good inshore and offshore fishing," (Handy, Handy, and Pukui 1972:268). They note the taro cultivation system in Waiheʻe, Waiehu, Wailuku, and Waikapū was contiguous and "the largest continuous area of we-taro cultivation in the islands (Handy, Handy, and Pukui 1972:488, 496). Breadfruit was cultivated in the Wailuku lowlands and plains and dried loʻi may also have been planted with bananas (Handy, Handy, and Pukui 1972:153, 162). Their work also discusses the shift in land use that occurred in Wailuku during the early historical era:

> On Maui there were five centers of population. Kahakuloa was an isolated area on the northwest coast of West Maui, a valley intensively cultivated in wet taro. The second was the southeast and east part of West Maui where four deep valley streams watered four areas of taro land spreading fanwise to seaward: The Four Waters (Na-wai-ʻeha) famed in song and story - Waiheʻe, Waiehu, Wailuku, and Waikapu. Here sugar cane has taken over former taro lands. [Handy, Handy, and Pukui 1972:272]

Wailuku appears on the earliest Hawaiian cartographic representations of land divisions including moku and ahupuaʻa. "Wailuku" is a land division label on an 1837 map of the archipelago engraved by Simon Peter Kalama, a talented engraver and mapmaker at Lahainaluna Seminary, Maui (Kalama 1837; Forbes 2012:150; Figure 7 and Figure 8). Kalama's 1838 map engraving of the archipelago depicts the location and bounds of Wailuku Ahupuaʻa (Kalama 1838; Forbes 2012:150; Figure 10).

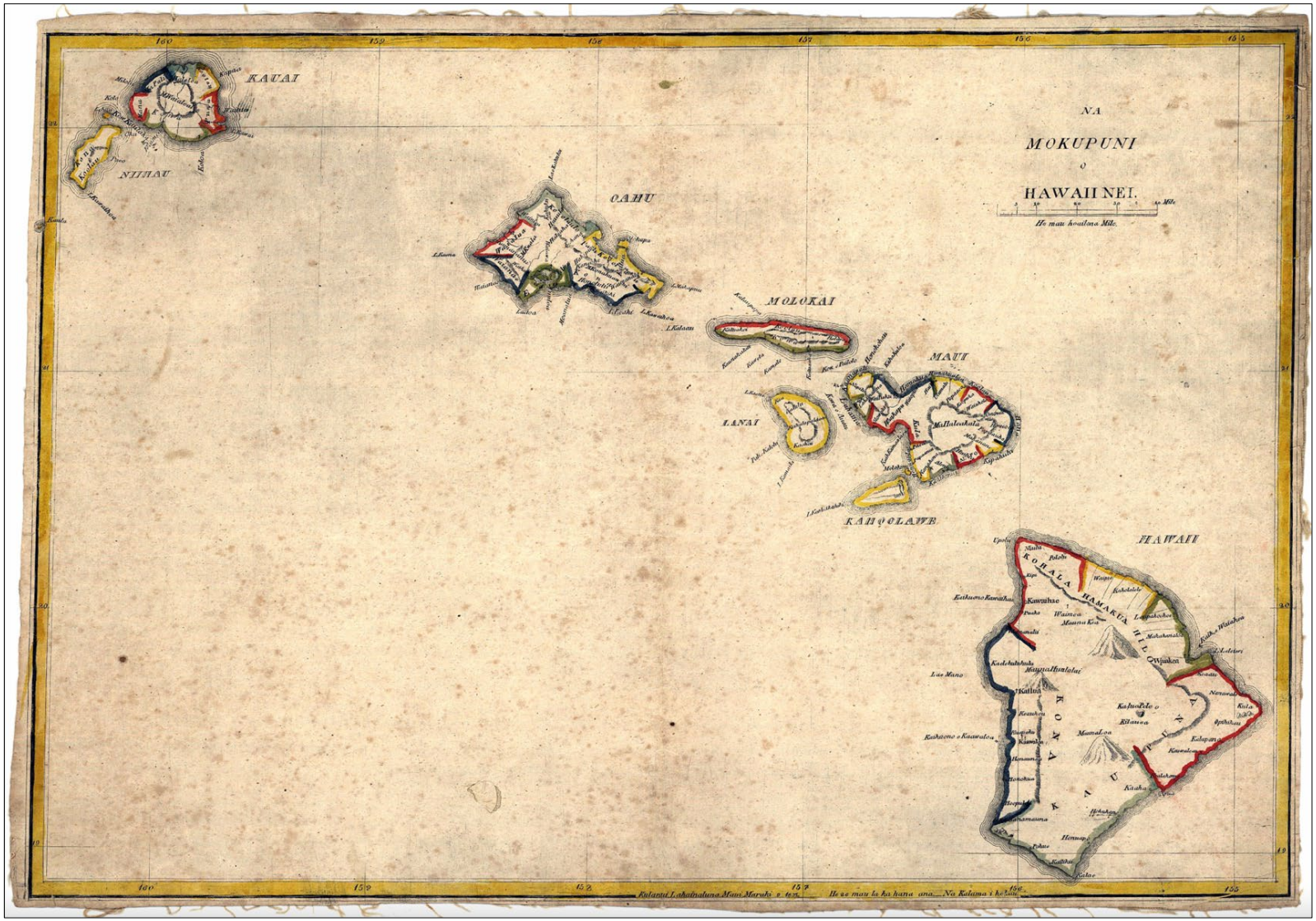

Figure 7. Kalama's 1837 map engraving of the archipelago entitled "Ka Mokupuni o Hawaii Nei" (*The Islands of Hawai'i*) depicting Wailuku, Maui (Kalama 1837; Forbes 2012:150)

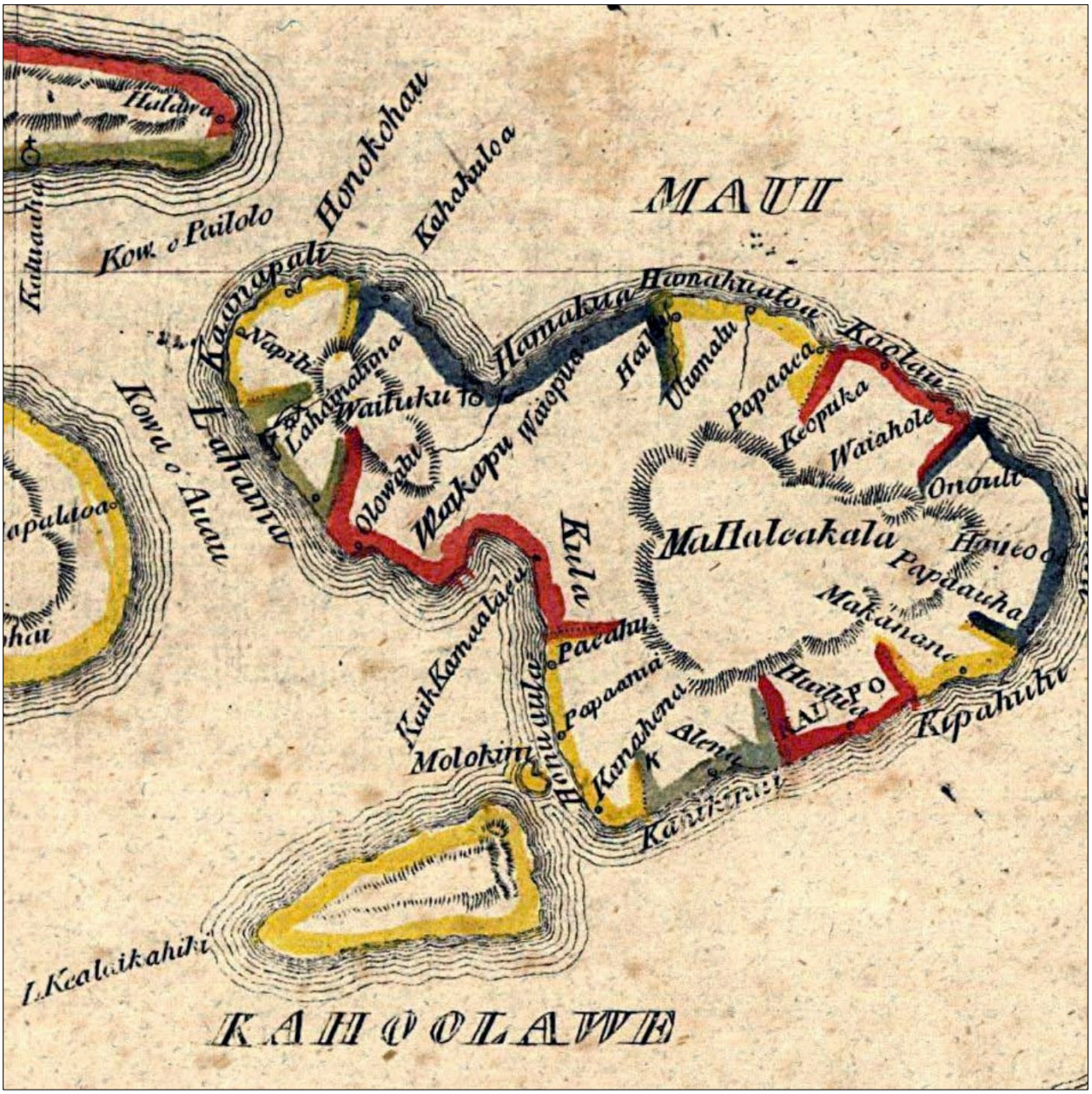

Figure 8. Close-up of the segment of Kalama's 1837 map engraving of the archipelago entitled "Ka Mokupuni o Hawaii Nei" depicting Wailuku, Maui (Kalama 1837; Forbes 2012:150)

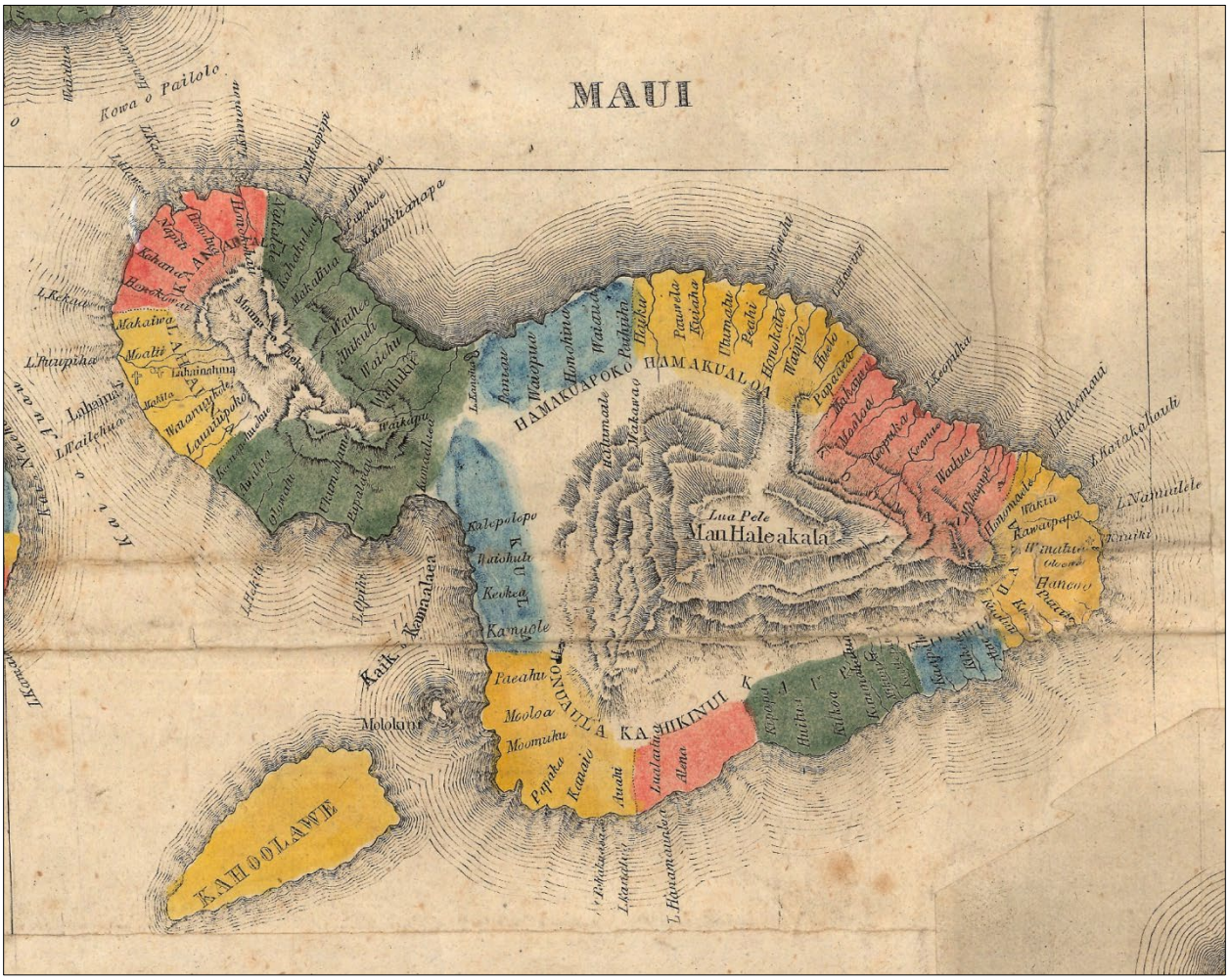

Figure 9. Close-up of a segment of Kalama's 1838 map engraving of the archipelago depicting the location and bounds of Wailuku Ahupua'a (Kalama 1838; Forbes 2012:150)

Mid to Late-1800s

The local manifestation of global, extractive sugar industries and economies began in Central Maui and on the lands west, south, and east of the project area beginning in the 1820s. The industry began a long term boom in the 1860s, enhanced by the ratification of the Reciprocity Treaty of 1875 that allowed free trade between the sovereign Hawaiian Kingdom and the United States (Dorrance and Morgan 2000:68; Maclennan 2014:23). Maclennan summarizes the evolution and economic as well as social impacts of the sugar industry in Hawai‘i:

> The corporate form of organizing sugar production in Hawai‘i grew out of the early experimentation with sugar cultivation promoted by the Hawaiian king and foreign planters. Corporations are a form of property organization that emerged throughout the world as a regular tool for organizing production in the late nineteenth century – but especially in North America and Europe. Hawai‘i’s sugar corporations – later known as the “Big Five” – followed a somewhat unique path, beginning with missionary settlers who pooled their money, property, and influence into vertically organized institutions that eventually controlled vast resources. Hawai‘i’s brand of capitalism was organic to the social and political arrangements of nineteenth-century life based on a native constitutional monarchy that operated in a global world of trade. The first missionary-created corporations emerged in the 1860s during the first sugar boom and within a quarter-century had brought enough wealth and power to their owners to enable them to challenge the political authority of the Hawaiian monarchy. Corporate property then propelled the missionary-descendants-turned-capitalists into positions of political power, serving the industrial drive toward sugar production for a global market. [Maclennan 2014:33]

Sugar plantations active in the project area vicinity included the Hawaiian Commercial Company which merged with the Maui Agricultural Company to become the Hawaiian Commercial and Sugar Company, managed by Asa Baldwin (Dorrance and Morgan 2000: 59-61). Bal and Adams and the Waikapu Sugar Company were active in the vicinity (Dorrance and Morgan 2000: 60,61). An 1885 Hawai‘i Government Survey map shows the project area in Wailuku Ahupua‘a as part of Grant 3343 in a landscape of sand hills dotted with loko i‘a, and also features the location of the Hawaiian Commercial and Sugar Company landholdings (Figure 10; Dodge and Alexander 1885). An 1893 map of the Sprecklesville sugar plantation, east of the study area, shows the project area in the Central Maui Plains surrounded by roads, railroads, and other plantation infrastructure (Figure 11).

In 1882, the project and study areas were components of an illegal and unauthorized sale of the 24,000 acre Wailuku Ahupua‘a – Crown Lands - to California sugar baron Claus Spreckles by Princess Ruth Ke‘elikolani (Van Dyke 2008:100). The land deal allowed Spreckles to acquire inalienable Crown Lands from an individual who had no authority or right to sell them (Van Dyke 2008:104).

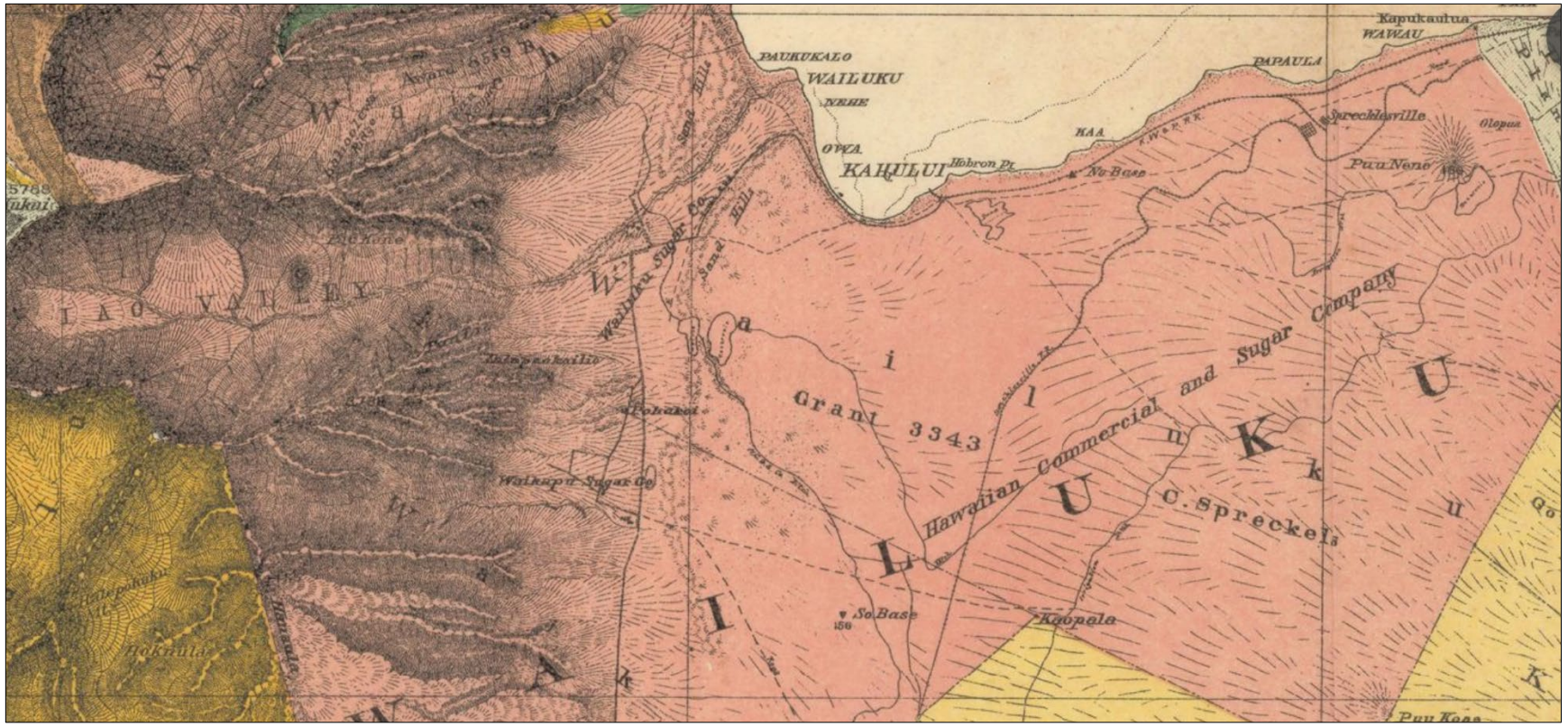

Figure 10. Close-up of an 1885 Hawaii Government Survey map showing the project area in Wailuku as part of Grant 3343 in a landscape of sand hills dotted with fishponds (Dodge and Alexander 1885)

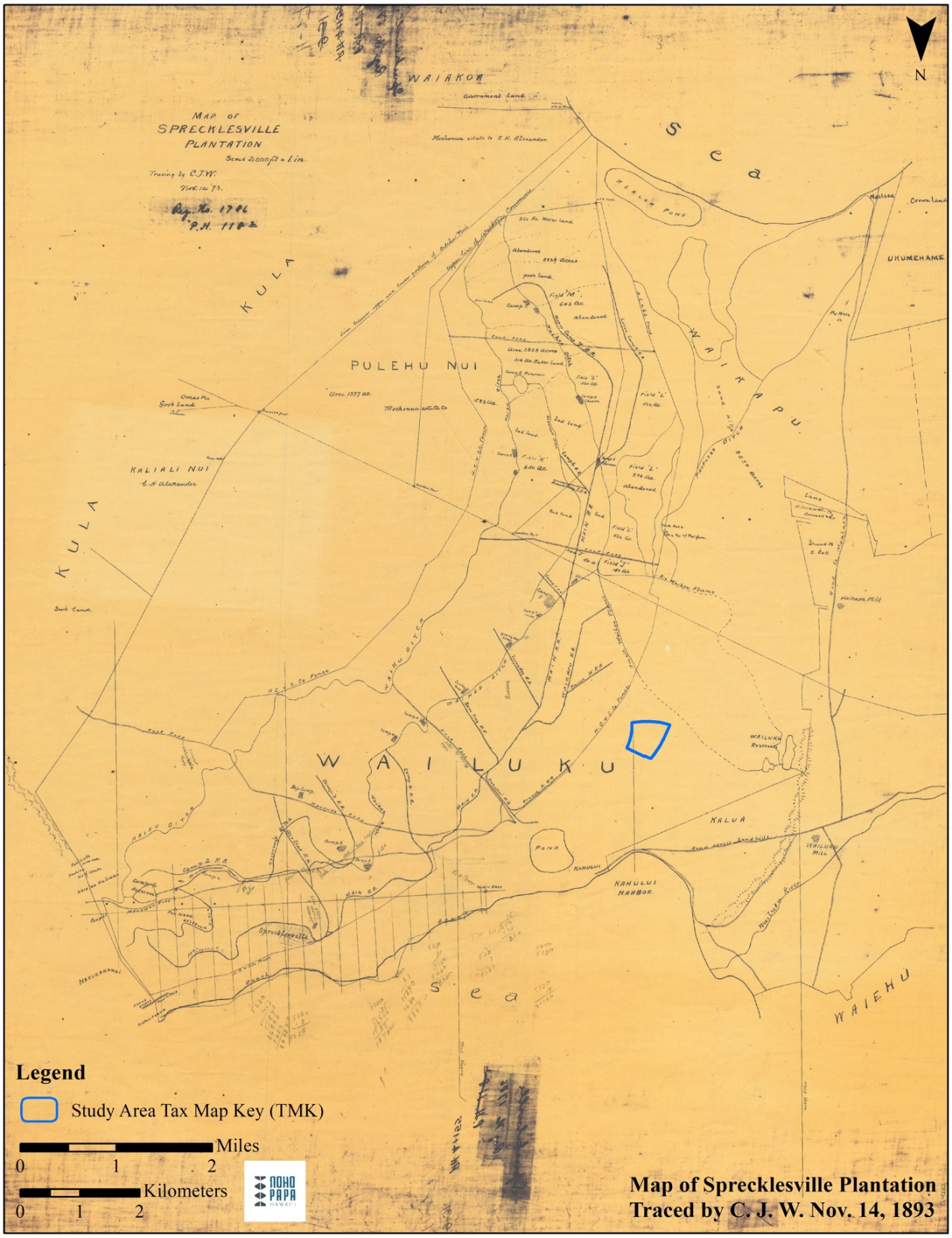

Figure 11.1893 map of the Specklesville Sugar Plantation featuring the study area, outlined in blue, on Maui's Central Plains

1900s to Present Day

Historical and modern accounts, maps, and photographs provide an understanding of the cultural landscape, settlement, and land use of Wailuku Ahupua‘a and the project area during the 20th century through the present. A 1929 map of Maui shows the Central Maui Plains and location of the project area as undeveloped, with natural topography, and bounded by the settlement of Kahului to the north, and infrastructure like roads and railroads to the west, south, and east (Iao and Wall 1929; Figure 12). Previous archaeological studies associated with the project area and vicinity and the MHS website further detail the twentieth century trajectory of land use in the project area and Central Maui Plain. The project area is described as natural sand dune topography and sediment that served as pasture lands until the late 1960s (Neller 1984:2; Miura et al. 1983:1, 2; Rotunno and Cleghorn 1990:7). Extensive ground disturbance and the modification, reduction, and leveling of the natural sand dune associated with the installation of a papaya and lilikoi fruit plantation by Orchards Hawaii occurred in 1968 (Miura et al. 1983:2). Concurrently, intact or partially intact sand dune systems are recorded south and west of the project area through the 1980s (Neller 1984:2; Miura et al. 1983:2).

According to information on the MHS website (Maui High School 2023), the MHS “opened in 1913 in the community of Hamakuapoko, on the north shore. It was the first academic high school on the island and had an initial enrollment of sixteen students. In 1972, the present Maui High School campus opened in the heart of central Maui.” Historical photographs of the project area and vicinity (Figure 13 and Figure 14) taken in the 1970s feature the MHS campus on the fringes of encroaching Kahului suburbs. The photographs show the current project area in the southern part of the campus as undeveloped land with forested and vegetated segments that were observed roughly intact during the field inspection for this study, roughly four decades later. The photographs also corroborate previous archaeological studies describing sugar cane fields and continued extensive additional ground disturbance from farming and recreational activities like sand mining, dirt biking, the use of informal roads, installation of a drainage pond, and trash dumping observed in lands to the south and west in the 1980s and 1990s (Neller 1984:2; Miura et al. 1983:1, 2; Rotunno and Cleghorn 1990:7).

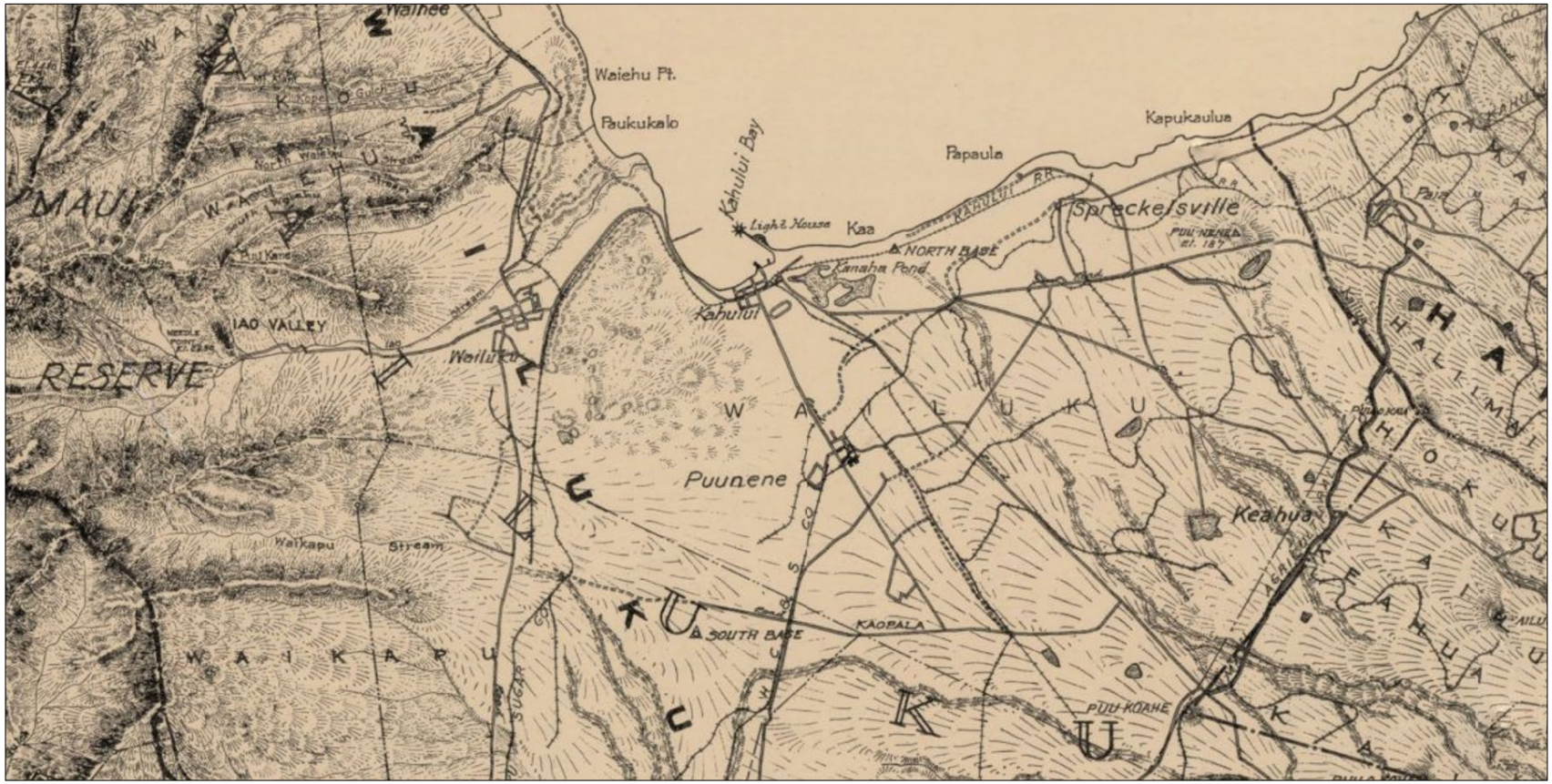

Figure 12. A 1929 map of Maui showing Central Maui Plains and location of the project area as undeveloped, with natural topography, and bounded by the settlement of Kahului to the north, and infrastructure like roads and railroads to the west, south, and east (Iao and Wall 1929).

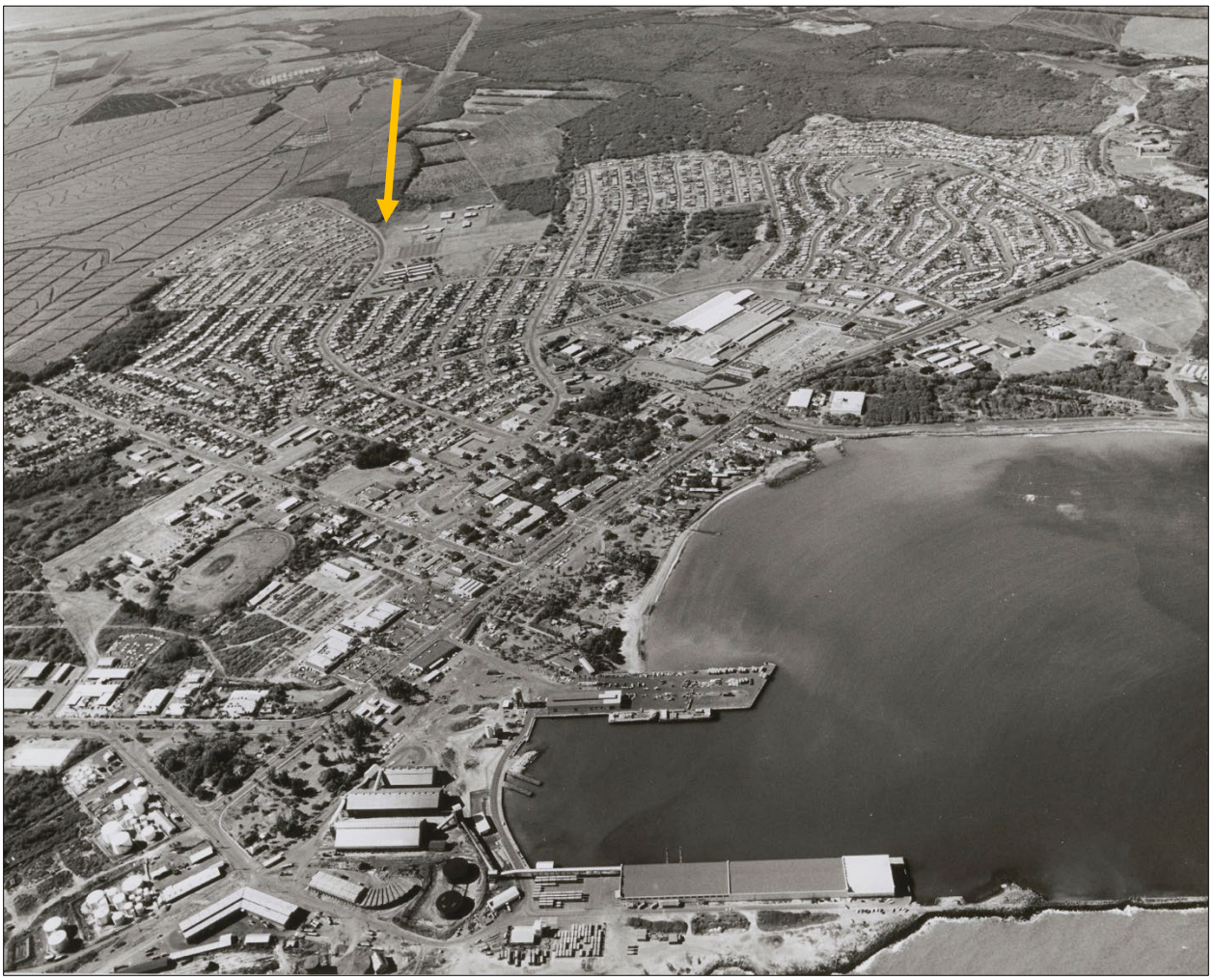

Figure 13. A photograph of Kahului in Wailuku Ahupuaʻa taken in the 1970s after the establishment of the MHS campus in 1972 (yellow arrow), view to the southwest (Bacon 1970s)

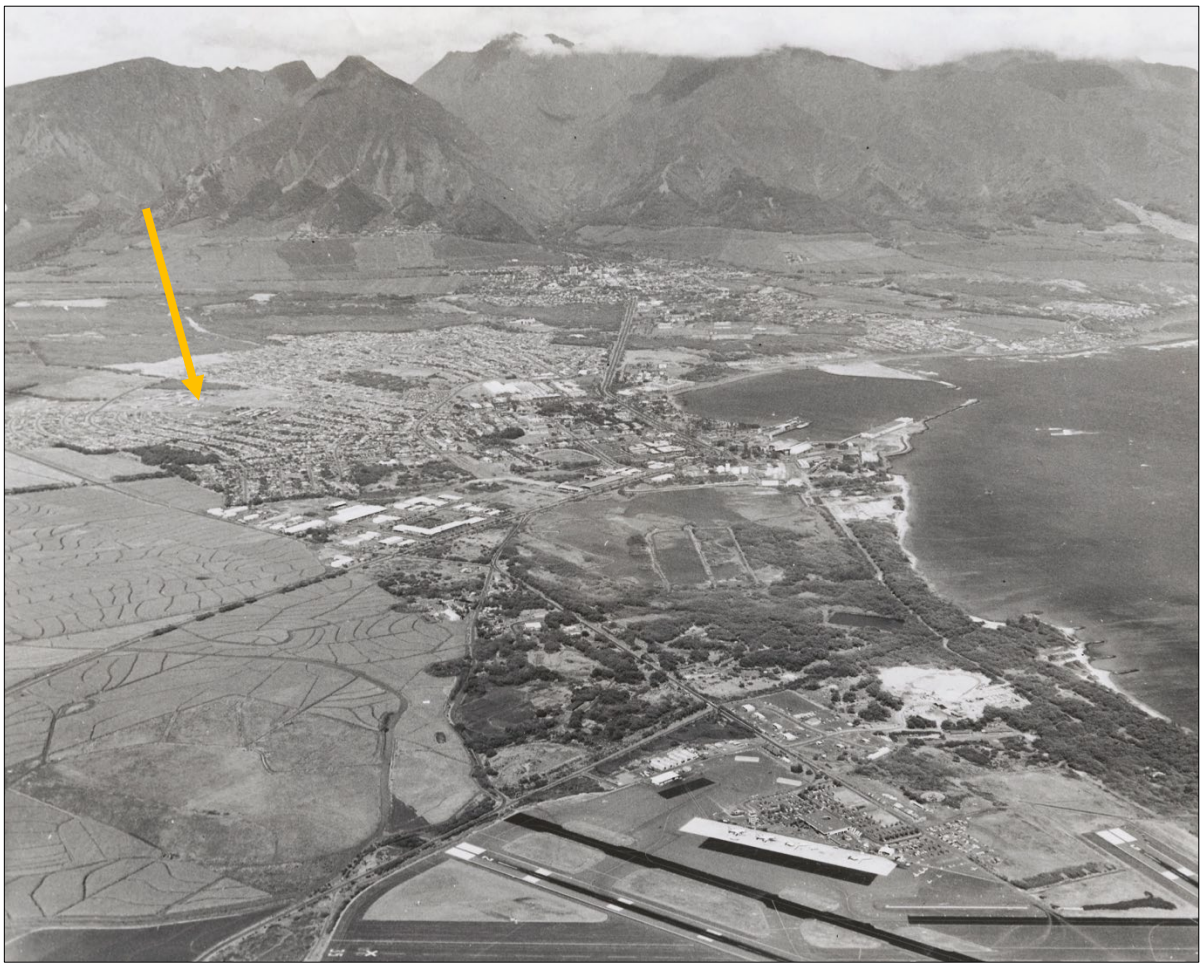

Figure 14. A 1975 photograph of Kahului in Wailuku Ahupuaʻa, featuring the MHS campus established in 1972 (yellow arrow), view to the west (Bacon 1975).

PREVIOUS ARCHAEOLOGICAL STUDIES

Results of Nohopapa Hawai'i's public records search indicates three compliance archaeological studies have occurred in the 2.2 acre project area and no historic properties are officially recorded as associated with the project area. Figure 15 illustrates the locations pf previous archaeological studies associated with the project area, study area, and vicinity, listed in (Figure 15). Background research did uncover a previously-issued SHPD determination regarding historic preservation next steps within the project area TMK (SHPD DOC NO: 0903PC83; SHPD 2009; Appendix A). The SHPD determination requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus (north of the current project area); as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities.

Numerous limitations are important to note regarding the resources yielded and available during background research conducted during this study. William Barrera Jr.'s 1976 *Archaeological Survey at Waiale, Maui* by Chiniago, Inc. was not available. Regarding Sinoto and Pantaleo 1992, the version of the report available from the SHPD was incomplete – all odd numbered pages were missing. Referenced in Cordle and Dega (2007:5), Donna Shefcheck, Michael Dega, and William Fortini's 2005 *Archaeological Monitoring Report for the Maui High School Softball Field, Kahului, Wailuku Ahupua'a* for the lands and segment of the MHS campus just north of the project area also was not available.

Previous Archaeological Research Within the Project Area

Background research performed for this study yielded three previous compliance-related archaeological studies completed for the current study area and project area: an archaeological monitoring report, draft archaeological monitoring plan, and literature review and field inspection completed for environmental compliance review only and therefore not on file at the SHPD (Yucha, Yates, and Hammatt 2020). The studies are summarized in catalog form below.

Study Title: *Archaeological Monitoring Report for Maui High School, Kahului, Wailuku Ahupua'a. Wailuku District, Island of Maui, Hawai'i [TMK: 3-8-007:098]*
Study Type: Archaeological Monitoring Report
Author(s): Shayna Cordle, William Fortini Jr., and Michael F. Dega
Year: 2007
Firm or Organization: Scientific Consultant Services

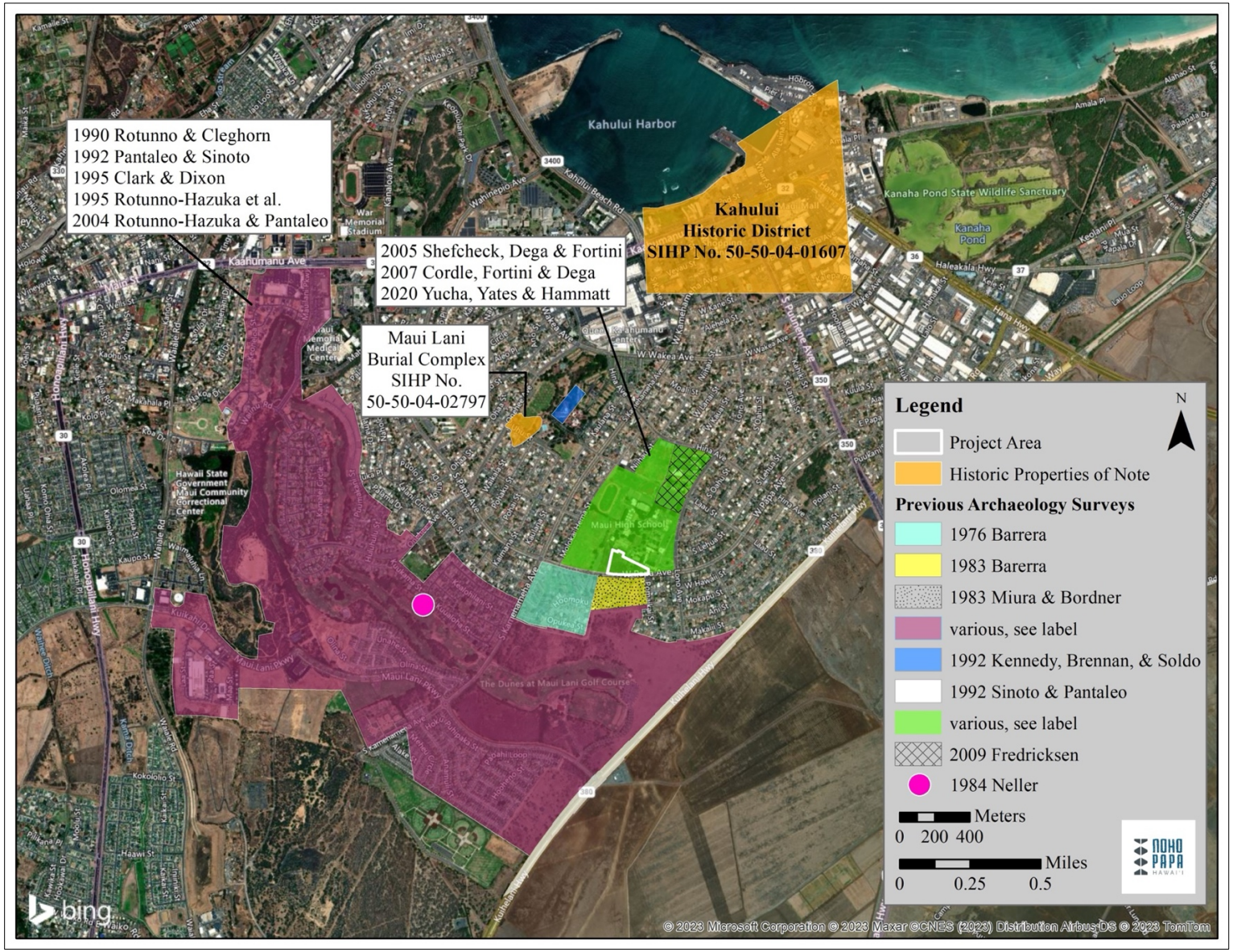

Figure 15. An aerial photograph overlain with the boundaries of previous archaeological studies, labeled by author(s) and year, conducted in the project area and vicinity

Table 3. Previously-identified historic properties and SHPD determinations in the project area and vicinity*
*defined as within ½ mile radius of the project area

Designa-tion	Formal Interpretation	Functional Interpretation	Temporal Interpretation	Status	Firm/ Organization	Notes
Previously-identified SHPD determinations in the project area						
SHPD DOC NO: 0903PC83	N/A	N/A	N/A	N/A	SHPD (DLNR 2009)	Requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus; as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities
Previously-identified historic properties in the project area vicinity						
SIHP #-1607 Kahului Historic District	Historic District	Commerce, housing	19th and 20th centuries	Unknown	Nohopapa Hawai'i Internal GIS Database	
SIHP #-50-50-04-02797	Maui Lani Burial Complex	Burials	"pre-Contact or early historical," (Rotunno-Hazuka et al. 1995:39)	Unknown	Bishop Museum Anthropology Department	"It is recommended that Site 50-50-04-2797 be considered significant under National Register Criteria A and D, and significant under State Criterion E, which assigns a traditional cultural value to the site," (Rotunno-Hazuka et al. 1995:i).
SIHP #-4146	Several burials	Burial preserve	Unknown	Unknown, received one burial from SIHP #-5404	Unknown	See discussion in Rotunno-Hazuka and Pantaleo 2004:i Precise location unknown

Designa-tion	Formal Interpretation	Functional Interpretation	Temporal Interpretation	Status	Firm/ Organization	Notes
SIHP #-5404	Two burials	Burials	Unknown	One burial relocated to SIHP #-4146, a burial preserve on Maui Lani Golf Course; one burial preserved in place	Archaeological Services Hawai‘i, LLC	See discussion in Rotunno-Hazuka and Pantaleo 2004:i
SIHP #-5504	Human remains	Burials in primary and secondary contexts	Unknown	Unknown	Archaeological Services Hawai‘i, LLC	See discussion in Rotunno-Hazuka and Pantaleo 2004:i

Project Area Location: MHS grounds, TMK (2) 3-8-007:098
Project Area Acreage: Unreported
Study Purpose: Results of archaeological monitoring program outlined in Chaffee and Dega (2004)
Methods: Intermittent monitoring between September 2006 and July 2007.
Results: "No cultural deposits or isolated cultural materials were identified during this project. The strata varied from mostly fill layers to natural, sandy sediment sterile of all organics and cultural material (Dega and Risedorf 2004)," (Cordle, Fortini, and Dega 2007:6).
Mitigation Commitments/Historic Preservation Next Steps: None.
Notes:
No detailed descriptions of subsurface excavations, including their horizontal extents, are provided. No stratigraphic profiles or photographs of the project area or subsurface deposits are included in the 10 page report. It also contains a contradictory description of subsurface deposits. In one section, a range of natural and fill strata are reported in the project area (Cordle, Fortini, and Dega 2007:6). Another states "all ground breaking activities never extended below the fill into natural sands," (Cordle, Fortini, and Dega 2007:7).

Study Title: *An Archaeological Monitoring Plan for Proposed Drainage Improvements for Kahului Elementary School, Wailuku* Ahupuaʻa, *Wailuku District, Maui Island (TMK: [2] 3-8-007:Portion of 041 and 098).**
Study Type and Purpose: Archaeological Monitoring Plan (AMP)
Author(s): Erik Fredericksen
Year: 2009
Firm or Organization: Xamanek Researches, LLC
Project Area Location: Current study area, including current project area (Kahului Elementary School Campus)
Project Area Acreage: 1.6 acres
Methods: Monitoring plan generated in compliance with the SHPD requirement (SHPD DOC NO: 0903PC83) of monitoring all ground disturbance activities within the project area.
Results: The AMP recognizes that significant cultural materials are potentially present on the Maui HS campus.
Mitigation Commitments/Historic Preservation Next Steps:
Notes: Frederickson writes: "Given the location of the proposed project area, the State Historic Preservation Division (SHPD) Maui office had previously indicated that archaeological monitoring of all ground disturbance activities would be necessary (SHPD DOC NO: 0903PC83 Appendix A). This requirement was stipulated because the project area lies in a portion of Maui that contains Jaucas and Puʻuone dune sand deposits. Isolated and clustered burials have been previously located in the general vicinity of the project area in this soil type," (Frederickson 2009: 1).
*The records search performed for this study did not yield a final version of this AMP

Study Title: *Draft Archaeological Literature Review and Field Inspection for the Maui High School STEM Building & Autism Center Project, Wailuku Ahupuaʻa, Wailuku District, Maui Island TMK: [2] 3-8-007:098.*
Study Type and Purpose: Literature review and field inspection
Author(s): Josephine Yucha, Angela Yates, and Hallett H. Hammatt
Year: 2020
Firm or Organization: Cultural Surveys Hawaiʻi
Project Area Location: Maui HS Campus
Project Area Acreage: 73.64 acres
Methods: Literature review and pedestrian field inspection

Results: "No potential historic properties were observed on the surface of the project area during the field inspection," (Yucha et al. 2020:ii).
Mitigation Commitments/Historic Preservation Next Steps: "Consultation with the SHPD Archaeology Branch is recommended to determine appropriate historic preservation requirements for this project. CSH recommends archaeological monitoring during project-related ground disturbance based on previous archaeological finds, including human burials, encountered northwest and southwest of the Maui High School within sand deposits that are also present within the current project area," (Yucha, Yates, and Hammatt 2020:68).

Previous Archaeological Research Within the Project Area Vicinity

At least eight compliance-related previous archaeological studies have occurred directly south and southwest of the current project area and are cataloged below; however, several previous archaeological reports were unavailable for examination and inclusion in this overview and discussion (see limitations discussion in the "Previous Archaeological Synthesis and Predictive Model," below).

Study Title: *Archaeological Reconnaissance Kahului Housing – Phase I (Hale Laulea Subdivision) TMK 3-8-07-106*
Study Type and Purpose: Archaeological reconnaissance survey
Author(s): Marvin Miura and Richard Bordner
Year: 1983
Firm or Organization: Environmental Impact Study Corporation
Project Area Location: Directly south of the current project area, Maui HS campus
Project Area Acreage: Unreported
Methods: Pedestrian survey
Results: The authors note "[t]he study are has undergone tremendous land modification in the last twenty years. The initial clearing, grubbing and dune removal for the plantation effectively destroyed the existing land surface for the majority of the study area. This situation was exacerated [sic] by further clearing and recreational activities," (Miura and Bordner 1983:4).
Mitigation Commitments/Historic Preservation Next Steps: "Due to the very disturbed nature of the study area, no further surface work is recommended. The possibility of sub-surface materials, especially burials, must be taken into account. Due to these concerns, the following recommendations are made: 1) It is recommended that backhoe testing be conducted prior to construction work at the study area," focused on the "remnant dune area" (Miura and Bordner 1983:4). Notice to state and county authorities prior to ground-breaking activities, outreach to construction workers regarding the potential for subsurface cultural materials on-site, and "[a] contingency set-up to provide for re-interment of cultural remains at a suitable location," additionally suggested (Miura and Bordner 1983:4).
Notes: No background research and limited informal consultation to understand land use performed. A previous caretaker on the property relayed the land was a sand dunescape until cleared by a fruit plantation in the late 1960s, and did not recollect any artifacts or iwi revealed at any time (Miura and Bordner 1983:2).

Study Title: *Recovery of Endangered Human Bones from the Wailuku Sand Hills, Maui, Hawaii*
Study Type: *Letter Report of Test Excavation Results*
Author(s): Earl Neller
Year: 1984
Firm or Organization: Historic Preservation Office

Project Area Location: Wailuku sand hills, "sand minding area, in the dunes mauka of Onehee Street," (Neller 1983:1), west/northwest of the current study area
Project Area Acreage: Unreported
Study Type and Purpose: Emergency archaeological recovery of human remains
Methods: Surface survey and excavation of partially exposed burial in a primary context.
Results: The burial was excavated, examined, and then "[t]he bones were then placed in a box and temporarily buried in the woods nearby, outside of the sand mining area," (Neller 1984:3). Additional bones on the ground surface were attributed to at least three and potentially more undetected burials in the area (Neller 1984:4).
Mitigation Commitments/Historic Preservation Next Steps: The author recommends: "Archaeologists should begin probing the area to locate the other graves before they are destroyed. Someday soon, houses will be built on the site. Construction and grading should proceed slowly in undisturbed portions of the sand hills. If the ground surface is removed in layers, an archaeologist must be able to spot burial pits before the bones are demolished by bulldozers and backhoes. All skeletal material should be excavated carefully by hand. Measurements and photographs should be taken in place. Controlled excavations should also be conducted to establish stratigraphic relationships. Samples should be collected for land snails analysis and radiocarbon dating. A report should be written describing the results of the fieldwork," (Neller 1984:4).
Notes: No test excavation descriptions, stratigraphic profiles or photographs that can be tied to specific test excavations and locations are contained in the report.

Study Title: *Archaeological Reconnaissance Survey of TMK 3-8-07:02 and 110 Wailuku, Maui.*
Study Type and Purpose: Archaeological reconnaissance survey in order to "locate and record any archaeological sites within the project area, and to assess the potential for subsurface remains," (Rotunno and Cleghorn 1990:1).
Author(s): Rotunno and Cleghorn
Year: 1990
Firm or Organization: Anthropology Department, Bishop Museum
Project Area Location: Wailuku, Maui, directly south and across the street from the current project area
Project Area Acreage: 1,000 acres
Methods: The project area was divided into five zones, number four of which is directly below the current project area. A surface survey utilizing north-south trending transects spaced at 50 m apart was then conducted (Rotunno and Cleghorn 1990:4).
Results: Two potential historic properties identified. In Zone 1, an approximately 15 m long "possible walkway" consisting of "compacted sand cobbles that are in a parallel alignment," was observed (Rotunno and Cleghorn 1990:5). A roughly 0.3 m high, 2.9 x 1.4 m rock mound of "piled, compacted stone cobbles" oriented north-south was recorded "at the top of a knoll in Zone 3," (Rotunno and Cleghorn 1990:5). The authors repeatedly emphasize that "due to dense vegetation cover, some sites may have been missed," (Rotunno and Cleghorn 1990:7). Neither historic property are located in the vicinity of the current project area.
Mitigation Commitments/Historic Preservation Next Steps: Due to the noted presence of burials, and "the possibility of missed sites due to dense vegetation, the past and currently ongoing ground disturbing activities, and imminent development of the Maui Lani parcel," further archaeological work was recommended. This included: "…detailed mapping, and monitoring if needed, during all phases of grubbing activities and subsurface testing," and a combination of backhoe trenches and excavated test units (Rotunno and Cleghorn 1990:7). The authors also recommended "[f]or the sand dune areas with high potential for burials, the feasibility of using ground penetrating radar (Surface Interface Radar) equipment should be explored. Nondestructive methods of burial identification is [sic] highly recommended in view of addressing recent Native Hawaiian and community concerns," (Rotunno and Cleghorn 1990:7).

Notes: The authors repeatedly emphasize that "due to dense vegetation cover, some sites may have been missed," (Rotunno and Cleghorn 1990:7). They also describe Zone 4, directly south of the current project area, as a location that "has experience a lot of dumping as well as burning and earth moving," noting "[d]irt roads that traverse Zone 4 led to the orchard where most of the trash seems to have originated," and the entire project area as exhibiting "evidence of extensive previous ground disturbing activities," (Rotunno and Cleghorn 1990:7). Importantly, the authors further note "[e]xcavations in, or just south of the project area were prompted by the discovery of human bone in a sand stockpile that had originated in the sand hills. The fill was being used on a construction site in Lahaina."

Study Title: *Draft: Archaeological Inventory Survey of the East Maui Waterline Project, Wailuku and Makawao, Maui (TMK: 2-5-03 thru 05:2-7-3, 2-7-07 thru 11, 2-7-13, 2-7-16 thru 20, 3-8-01, 3-8-06 thru 07, 3-8-51, 3-8-59, 3-8-70, 3-8-71).*
Study Type and Purpose: Archaeological inventory survey of the footprint for a pipeline
Author(s): Aki Sinoto and Jeffrey Pantaleo
Year: 1992
Firm or Organization: N/A
Project Area Location: Central and northern coastal Maui
Project Area Acreage: Unknown – report pages missing.
Methods: "The survey involved systematic transects along selected segments of the project corridor. Since the majority of the project corridor follows existing paved and cane roads, surface survey concentrated in the gulch areas. Machetes were used to cut through dense vegetation," (Sinoto and Pantaleo 1992:8).
Results: Unknown – report pages missing.
Mitigation Commitments/Historic Preservation Next Steps:
Notes: The version of the report available from the SHPD during background research conducted for this study was incomplete – all odd numbered pages were missing

Study Title: *Inventory Survey with Subsurface Testing Report for a Property Located at TMK: [2] 3-8-07:97 (por.) in the Ahupua'a of Wailuku, District of Wailuku, on the Island of Maui.*
Study Type and Purpose: Inventory survey and subsurface testing results reporting.
Author(s): Joseph Kennedy, Peter Brennan, and David Soldo
Year:1992
Firm or Organization: Archaeological Consultants of Hawaii, Inc.
Project Area Location: Kahului Park, roughly 500 m northeast of the MHS project area
Project Area Acreage: 2.41 acres
Methods: Nine mechanical test excavations measured roughly 70 cm wide, 2-3m deep, "…excavated arbitrarily into the portion of the property eligible for testing, in order to ensure the greatest coverage of the intact dune deposit," were installed in the proposed project area (Kennedy et al. 1992: 20). The authors note all test excavations were monitored and that "…random screening of the back fill at arbitrary distances," occurred. Soil samples were taken and representative profiles generated for a selection of test excavations.
Results: "The excavation on the subject property did not encounter human remains in the sand dune. Indeed, no features or deposits of historic significance were encountered on the subject property," (Kennedy et al. 1992:30).
Mitigation Commitments/Historic Preservation Next Steps:
Notes: The authors further note: "The owner and developer should be aware that human burials have been encountered in sand dunes in the Kahului area. It is possible that the testing undertaken during the present investigations did not locate human burials which are present in the sand dune. In the event that human remains are encountered during construction activities, the State Historic Preservation Division should be contacted immediately, in accordance with HRS Chapter 6E," (Kennedy et al. 1992:30).

Study Title: *Archaeological Testing of Four Sites on the Maui Lani Property in Wailuku Ahupua'a, Wailuku District, Island of Maui, Hawai'i.*
Study Type and Purpose: Archaeological subsurface testing and data recovery
Author(s): Lisa Rotunno-Hazuka, B.A., Lonnie Somer, Ph.D., Stephan D. Clark, B.S., and Boyd Dixon, Ph.D.
Year: 1995
Firm or Organization: Anthropology Department, Bishop Museum
Project Area Location: Maui Lani property (TMKs 3-8-07:2 and 110, Wailuku, Maui, directly south and across the street from the current project area
Project Area Acreage: Unreported
Methods: Four archaeological test excavations at intentionally selected, feature-adjacent locations – T-1 (two parallel alignments), T-2 (adjacent to proposed project area footprint), T-3 (two adjacent rock mounds), and T-4 (a single rock mound).
Results: "Sites T-1, T-3, and T-4 are considered to have no archaeological significance, and no further work at these sites is recommended," (Rotunno-Hazuka et al. 1995:i). "The fourth site, designated as Site 50-50-04-2797 (Bishop Museum Site 50-Ma-C9-40), is a human burial site. Test excavations at this site were focused in areas containing surface fragmented human skeletal remains on the western periphery of a sand borrow pit, near the eastern boundary of the Maui Lani project area. Test excavations did not locate intact burial features, but resulted in the recovery of scattered human skeletal remains in Layer I. Based on osteological analysis, these skeletal remains represent a minimum number of three individuals," (Rotunno-Hazuka et al. 1995:i). The finalized version of Fredericksen's 2009 AMP was also unavailable.
Mitigation Commitments/Historic Preservation Next Steps: "It is recommended that Site 50-50-04-2797 be considered significant under National Register Criteria A and D, and significant under State Criterion E, which assigns a traditional cultural value to the site," (Rotunno-Hazuka et al. 1995:i).

Study Title: *Draft Archaeological Monitoring Report for Maui Lani Development at the Bluffs Subdivision, Kamehameha Avenue and Maui Lani Parkway Extensions (TMK 3-8-07:121 PORS, 130, 131). Wailuku Ahupua'a [sic] District, Island of Maui.*
Study Type and Purpose: *Archaeological monitoring program results reporting*
Author(s): Lisa Rotunno-Hazuka and Jeffrey Pantaleo
Year: 2004
Firm or Organization: Archaeological Services Hawaii, LLC
Project Area Location: Maui Lani subdivision, roughly 400 m south and southwest of the current project area
Project Area Acreage: 1,000 acres
Methods: "Archaeological monitoring was initiated on all ground disturbing activities related to construction," in implementation of an archaeological monitoring plan approved by the SHPD in 1996 (Rotunno-Hazuka and Pantaleo 2004:i).
Results: "Monitoring for the Bluffs residential subdivision was performed intermittently from 2000-2003, where two inadvertent burial sites, FS #54 and #62 (SIHP-5404) were identified. FS54 was disinterred and shall be relocated to SIHP #4146 (Loc. 12), a burial preserve within the Golf Course. SIHP #5404 (FS62) has been left *in situ* according to the Burial Treatment and Preservation Plan submitted in March 2003. Monitoring of the roadway corridors was performed in the year 2003, during the months of February thru October. No significant historic properties were identified within the roadway corridors. However, to date, 63 find spots (localized areas with human remains) containing over 100 Native Hawaiian burials; [sic] have been documented at Maui Lani," (Rotunno-Hazuka and Pantaleo 2004:i). The authors further conclude: "Thirty-five burial features have been identified at the Hawaiian Cement, Ameron and Kuihelani Project Areas within TMK 3-8-07_101_121[sic]. Numerous burial features have also been documented along the Lower Main/Waiale corridor which bounds the above mentioned project areas. The identified

of these aforementioned burial sites further supports the inland dunes as a traditional Native Hawaiian burial ground," (Rotunno-Hazuka and Pantaleo 2004:15).
Mitigation Commitments/Historic Preservation Next Steps: Archaeological monitoring of all subsurface deposits recommended (Rotunno-Hazuka and Pantaleo 2004:16).
Notes: Natural sedimentary deposits observed throughout project area; cultural deposits observed to aggregate along a stream deposit (Rotunno-Hazuka and Pantaleo 2004:15). Both burials were revealed *in situ* (Rotunno-Hazuka and Pantaleo 2004:15). The authors further note: "Human remains were identified along Kuihelani Highway at the sod farm (between Waikapu Stream/Waiko Road and Maui Lani Parkway) and assigned SIHP 50-50-04-5504. These remains were unearthed by HC&S when they were building a berm along Kuihelani Highway, and consisted of one individual *in situ* and at least two individuals in secondary contexts (Rotunno-Hazuka and Pantaleo 2004:15).

Background Summary and Predictive Model

Background research and the survey of previous archaeological studies show the project area is situated within a greater, contiguous biocultural landscape and integrated system of resource management established by Native Hawaiians. Ke Kula o Kamaʻomaʻo, the central plains of the isthmus region of Maui, is comprised of dune systems that are battlefield locations commemorated in oral traditions. Ke Kula o Kamaʻomaʻo also served the widely known cultural function as an internment space for the remains of the deceased.

Previous archaeological studies spanning at least 40 years further evince the Hawaiian cultural understanding of the dune systems in Central Maui as battlefields and a burial ground. All the studies summarized above note burials as an obvious and heightened concern in the project area and vicinity. Within the vicinity, the Maui Lani Burial Complex (SIHP #-50-50-04-02797) is located roughly ¼ mile northwest of the current project area, and the Kahului Historic District (SIHP #-1607) is located roughly ½ mile to the north (Rotunno-Hazuka et al. 1995:i). SIHP #5404, two burials, were revealed on the Maui Lani development and ordered disinterred and relocated to SIHP #4146, a burial preserve in the Maui Lani golf course whose precise location is indeterminate based currently available information (Rotunno-Hazuka and Pantaleo 2004:i). Writing in 2004, but without further detailed references, Rotunno-Hazuka and Pantaleo (2004:i) state: "…to date, 63 find spots (localized areas with human remains) containing over 100 Native Hawaiian burials; [sic] have been documented at Maui Lani," which is just south of the project area. Several previous archaeological studies underscored the increased likelihood for burials within the dune system, need to abide by community concerns regarding this, and the need for all stages of proposed projects to comply with historic preservation rules and regulations (Kennedy et al. 1992:30; Miura and Marvin 1983:4). Specifically, on the basis of the many burials revealed in the sand dune system, Rotunno-Hazuka and Pantaleo declare "the inland dunes as a traditional Native Hawaiian burial ground," (Rotunno-Hazuka and Pantaleo 2004:15). Lastly, a 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities. The SHPD determination states that archaeological monitoring is recommended in situations where the SHPD "believe[s] it is possible that archaeological sites from the pre- and/or post-Contact periods may be present in the subsurface deposits exposed during the proposed work," (DLNR 2009:2). The letter requires a SHPD-approved Archaeological Monitoring Plan and implementation of an Archaeological Monitoring Program for any ground-disturbing activities.

Background research did not yield previously-recorded historic properties in the project or study areas. Extensive alteration of the vegetation, topography, and hydrography of the project area and vicinity commenced with nineteenth century ranching and continued with industrialized

agricultural activities and the expansion of Kahului suburbs over the course of the last 40 years. Given that the report by Shefcheck, Dega, and Fortini 2005 was not available, and documentary evidence of subsurface excavations in the project area were not provided (Cordle, Fortini, and Dega 2007), not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area.

COMMUNITY ETHNOGRAPHY

Ethnographic work for this study was conducted from November 2023 to February 2024. The ethnographic process consisted of identifying appropriate and knowledgeable individuals, conducting ethnographic interviews, summarizing the interviews, analyzing the ethnohistoric data, and preparing the report. Twenty-four individuals were contacted to participate in this study. Of the twenty-four individuals who were contacted to participate in this study, one individual committed to an interview. Twenty-three of the remaining individuals who were contacted for this study were unable to participate for various reasons. Though unable to participate in an interview or survey to consult on this project, three individuals contributed to the community ethnography process by graciously offering their recommendations on who should be contacted to participate in this study, all of whom were contacted. Table 4 below lists the name, background information, and the date of the individual who was interviewed for this study.

Table 4. Community Interview Participants (in alphabetical order)

Participant	Background/Affiliation	Notes
Clare Apana	• Descendant of Wailuku, Maui • President of Mālama Kakanilua	Completed interview on February 23, 2024. Manaʻo is included below.

Mahalo

Nohopapa Hawaiʻi would like to underscore our mahalo Clare Apana for sharing her time and insights related to this project. Without her willingness to share personal recollections and stories, this important project would not have been possible. The manaʻo that was shared will help to mālama Wailuku for future generations to better understand, appreciate, and cherish the uniqueness of this place.

Summary of Community Manaʻo

Moʻokūʻauhau and Moʻokūʻauhau ʻĀina (Background Information)

Connection to Wailuku, Maui

Clare Apana is a descendant of Wailuku, Maui. Her life and advocacy efforts have been dedicated to the protection of iwi kūpuna. She is the president of Mālama Kakanilua, a non-profit organization on Maui whose mission is, "to protect and preserve vested rights of iwi kupuna as granted in CC of 1860 Act for the Protection of Places of Sepulture, Kānāwai Ko Hawaiʻi Pae ʻĀina. Mālama Kakanilua remains steadfast in upholding the integrity of the above stated Kānāwai as to any disinterment, conveying away or destruction of burial places Mauka to Makai. Mālama Kakaniliua recognizes the inherent rights of the iwi kupuna as Kānaka Maoli. Mālama Kakanilua's advocacy is to restore the Ola (health and well-being) of the Kānaka Maoli."

During an on-site interview, Apana described her connection to the project area, "I grew up in Wailuku but was here in Kahului a lot. My sister lives one block away from this school, and I did lots of babysitting and staying overnight with them in this area. And, I actually got to see this whole area be developed. It must have been kiawe forest. And so, it's interesting to think about the further development of this area because there wasn't even a high school here before." Apana's

recollection of the project area dates back prior to 1972, the year when Maui High School campus was moved from Hāmākuapoko to its current location in Kahului. Apana commented, "There was only Baldwin High School and Saint Anthony. And now we're looking at Maui High, really growing up more." When asked what was her memory of this place before Maui High School, she responded by remembering the fields of kiawe that filled the area, "We played a lot of tennis on the tennis court. I don't know if it's still here or not, but, [laughs] and then we used to come over on the football field and I'd bring my nephews and we'd be playing on the football field over here."

Site-Visit Reflections

While walking around the perimeter of the project area, Apana observed the boundaries of the site and commented, "I'd be a little wary. It's an unusual shape. Because they should have squared it off, right? And they didn't. Which could mean something because they didn't." For Apana, the unusual shape of the project boundaries was reminiscent of the development of Maui Lani. She commented, "I mean, it's kind of shaped like the one at Maui Lani. The one with 69 burials in it." Noticing the unusual boundary shape mapped for this project and the hill on which the site is situated, Apana stated, "This is an interesting little hill. There's more here than meets the eye." Uncertain of whether the sloping contours and of the project area landscape were one of natural occurrence, push-piled during the grading of the Maui High School campus, or dug out and extracted for leveling purposes, the peculiarity of the hill that the proposed project site is located, is an area of concern for Apana. Apana mentioned, "So many of the remains are in the push pile." Relating the use of digging in other development projects on Maui, Apana reflected on Maui Lani Safeway development and the use of digging there. Looking at the project area, Apana stated, "They [could have] dug it out because they found burials in it. Like how they did up at Safeway."

In her observations during the site-visit walking within the project area perimeters, Apana commented that the area within the fence was a nice area. Apana shared her first impression of the site, "It's kind of nice, ah, back here. You got this little place in here." Noticing how the Maui High School custodial and landscape employees utilized the space to grow a garden of their own, producing crops like papaya, banana, okra, and squash, Apana stated that if an agriculture program is not something already in existence at the school, "They could do a big one. They should grow food for the kids."

Exiting the project area enclosure, Apana described her personal sensibilities to the space, "Closer to the buildings definitely has a different energy to it. A flow to it. This [the school buildings] has a much more sterile feeling, you know? And if you walk there [inside the project area], it's probably because there's more nature too, but there's more aliveness in the ground there. And, I don't know whether it's because there are burials. I would have to come and sit here for a little bit more."

Biocultural Landscapes, Resources, Uses, and Practices

Apana commented on the great ʻuala (sweet potato) patches of Kekūhaupiʻo that stretched along Wailuku and its probability of being within this site. She shared, "So, it must be somewhere in here. It could have been with this place because Kekūhaupiʻo was one of the ones who survived the battle." The battle Apana was referring to was the Battle of Kakanilua. In recalling the portion of the moʻolelo related to Kekūhaupiʻo, she described, "Kamehameha never got off the boat until the battle was already over. And then, when he came out, Kekūhaupiʻo was fighting for his life. And Kamehameha actually rescued him. It's an amazing story because Kekūhaupiʻo fought so many people at the same time." In sharing about Kekūhaupiʻo, Apana revealed that Kekūhaupiʻo had grown ʻuala throughout Wailuku. She shared, "Well, as far as Wailuku was known, that was

the crop, was the ʻuala. And of course, they had so many taro patches. Amazingly, Wailuku had so much water, you know? So, coming all the way down was loʻi."

When asked if she believed the presence of loʻi to be in this area, Apana responded, "Mmm… I don't think so. I kind of doubt that it came to this side. Would've been maybe that side [upland]. But it's hard to say because the forest used to come from Waikapū used to be so much farther down. In the 1800's they were talking about, 'Oh man, we're losing our forest already,' you know, and the water. And then, because they were starting to do sugar cane, they were diverting water and they were talking about how the forest is just shrinking. And so, the Waikapū forest, low forest, came way farther down than we think about now."

In a follow-up discussion with Apana after the initial interview was conducted, Apana had shared that she had later spoken to a former student of Maui High School, who had begun farming in the fields of the project area. Apana shared, "I met with [an anonymous individual]. [They] attended Maui High School and actually helped to work in the agricultural program that was exactly the place that this new project is asking to be built upon. [They] said it was a really good thing. [Their] teacher was so dedicated to it, but the program seemed to not continue after the teacher left Maui. [The former student] hopes that it will continue to be an agricultural classroom or one where there is ʻāina for the students, as many students, in times of needing support for their lives." After recounting what the former student had shared with her, Apana stated, "Please consider the words of someone who actually helped to establish the area as a living garden, a place of being in ʻāina. From a student who actually saw the benefits of this land being used as an agricultural class, [they] hope that it will again return to its former status."

Moʻolelo

Apana shared her recollection of the famed Battle of Kakanilua, which was fought between the Hawaiʻi chief, Kalaniʻōpuʻu, and Maui chief, Kahekili. She shared this moʻolelo in reflecting on the potential of what could be done for this project area and the lessons that could be learned. Apana shared, "And the history of this area being the second day of the Battle of Kakanilua and they [Kalaniʻōpuʻu and Kahekili] purposely fought down off the sand dunes, in Waikapū and fought this battle down here, down lower." She reflected and shared the lesson of this moʻolelo:

> "Well, the thing that you really could learn from it [the Battle of Kakanilua], is that they [Kalaniʻōpuʻu and Kahekili] fought, and they really needed to stop. Before either side was demolished. And both of them were really hurting. And so, when Keōua was carried across the sand by his uncle and the fighting stopped, I think that that really was the lesson, that it was time to make peace. They were both really hurting. But it was the second day that the fighting continued with more of the regular regimens, you know, the makaʻāinana warriors. And, so his uncle allows him to leave and the battle stops. Kahekili allows them to leave and the battle stops, and then they go back and prepare for another battle, to come back. So, what do we learn? I think the sand dunes here really show kānaka a lot about what we haven't learned to do. And, the whole premise of the Kalaniʻōpuʻu being so sure that he could win this and going into battle and then having his royal guard the ʻĀlapa and Piʻipiʻi just demolished on the first day of fighting. And then Kalaniʻōpuʻu saying, 'I'm gonna fight again!' But the battle ends with peace. We can make better choices. If we can make better choices today, say, in how we build that little space out. You know, can it be something that does not infringe upon what may be in the ground? A burial area of our kānaka. Can we honor that? Honor them? Can we bring ʻāina to life here on this campus? We have every possibility. I would hope that a school could have some figured thoughts when they make this

plan like this, and that they could actually build in honor of our people who gave up their resting places so that we can have homes, roads, streets, shopping centers, and schools. But how could we honor them? But to make it the very best for our children. So, I think there are many more people who know more about the building of this school and what may have happened with the burial grounds here, but I think that always, for me, the sand dunes represent possibilities of doing our best. And doing better. Making choices that benefit our children and future."

Concerns and Recommendations

Concerns of Potential Impacts

Though unable to speak towards the certainty of burials that could be found within the project site, Apana expressed concern for the likelihood of discoveries that could potentially be found here when taking into consideration the close proximity the project site is in relation to other developments where high numbers of burials were discovered. In particular, Apana reflected on Hale Mahaolu Luana Gardens Apartment complex and Maui Waena Intermediate School. Apana shared, "Luana Gardens is right across the street. One of the first places that they found burials in concentration during the time that they were reporting them." When asked for clarification on what year this incident would have occurred, Apana stated, "Geez, I would have to say the eighties. And you can easily find it. They have a report of it. They found lots of burials there." With Luana Gardens being just one block away from the project site and knowing its history with the sheer concentration of burials found there, Apana stated concern for the potential discoveries that may be found in the project area.

Apana also spoke and commented that there were many desecrations that occurred at Maui Waena Intermediate School. When asked, what kind of things did they find at Maui Waena, Apana responded, "85 burials. 85 that they claimed when we left. And where the school is, they have, I don't know how many burials in the park next door." Apana's estimate of how far Maui Waena is from the project area was four blocks. In reference to the location of burials found within Maui Waena Intermediate School and Luana Gardens, Apana commented, "So, if you just follow the sand dunes, you would know. There's a great tremendous amount of burials there."

Apana also recalled a memory shared by a friend who grew up across the street from Maui High School. She shared, "I remember my friend, Thomas Palafox, speaking about growing up in a home that is right across the street from the school, and he would recount times of spiritual disturbances. Actually, he said the night marchers would come through his house. So, we know that this area is still protected and inhabited by our ancestors."

Apana's first comments, prior to having walked the project area, were expressions of concern for the project area's location and closeness to Maui Waena Intermediate School and Luana Gardens, areas that have historically been reported to have disturbed and desecrated a number of burials. After physically walking the project site, Apana was asked again, "Now, having walked the space, is the locale of the project area something concerning to you?" She responded, "Yes. Because in the sand, you also get cultural layers that are two or three deep. So, you get one layer and then you go down another 8-10 feet and you get another layer. And then you could go one more time. You know, I haven't seen more than three. But it's not unusual to have that, you know. So, I suppose, as a sand dune, that could happen. You get cultural layers like that. If some of the archaeologists had done their job and actually written their reports about what they found when they monitored, you'd know that much more clearly."

Recommendations

In consideration of what was observed and her knowledge of the project area, Apana recommended, "I really hope that they would consider having buildings that actually do less ground disturbance that can be built above ground with all the infrastructure built right there on top of the ground, rather than having to dig like six or eight feet down into burial grounds. Because we don't know. It looks like fill, but you don't know what's there. And this is the place where they're always *surprised,* 'Oh, burials?!' Ah! We thought that was probably a very good possibility. So, I'd say, why don't we plan not to disturb our kūpuna and let them lay in as much peace as they can and build something that would honor them, like building something that actually respects the ʻāina and builds sustainably for the ʻāina momona. The ʻāina momona of the children here. Apana stressed the recommendation, "They should actually build buildings that go above ground and have the infrastructure without digging into the ground. It has never been done in a school except for these portables. It's never been done to actually design it so that you didn't ground disturb."

When posed the question, what would your recommendation be if they were to proceed with this project? Apana responded, "To do as little ground disturbance as possible. And if it costs a little bit more, it would probably be worth it. From what you have all around you, you know, it would be very possible that if they cleared out the area here, then there would be burials."

Apana also commented on the need for development processes to be proactive in anticipating and redirecting the course of development over burial grounds. Apana shared, "I also want to say that I know somebody who worked in many of the A & B [Alexander & Baldwin] and Maui Lani projects in these sand dunes. And he says he never hit an iwi kūpuna because he can feel them, and he reworks his course. And I think it would be important for people who are going to work on this project to be able to speak to somebody like him or to other people, like our people, Tommy and Vicky Palafox, who work with us, and they do kahuna pule for us. And so they, essentially, do prayers for us with our iwi kūpuna here in Maui, in the sand dunes. And it would be very honoring if somehow they could be able to help to guide the understanding and the work crew and even the teachers here." Apana's recommendation is for developers and project managers to be proactive and allow for cultural consultants to be contacted for engagement, with the autonomy to recommend remapping of sites if necessary. She commented, "And, if it does happen [discovery of burials], then I would hope that they would be called to take care of it rather than an archaeologist. You can call the archaeologist, but please let our people take care of our own iwi kūpuna."

Additional Manaʻo

Apana's underlying recommendation for proceeding with this proposed project commented, "Do as little ground disturbance as possible. If you can do something where you don't have to do the ground disturbance, you know, you could be taking the chance and digging up bones, maybe you could, and it wasn't something that wasn't really irreverent, I don't know that they would mind, especially if it was for the kids." In sharing her belief of the importance of connecting children to ʻāina and the potential for that to be integrated into education, Apana stated, "To me, I think it's somewhat appropriate, for the kids, even if maybe there are burials in there, because of that being the last space that they didn't take. And the way it looks and feels. But it would be a beautiful thing for them to have an education so they could feel ʻāina, you know?"

When asked to share her overall thoughts and recommendations for this project Apana shared the following reflection:

“So, this school is right in the area of these sand dune complexes. I know from being in the yard of my sister, who’s a block away, that’s definitely sand in the ground. And with the sand, is the traditional burial ground. And there have been so many burials found in this area, across the street in the presidential condo home apartments living area, up the street at Maui Waena School. The entire neighborhood that borders the Maui Waena School and all the way across Maui Lani has a residential neighborhood, which just shows us that this is a traditional burial ground. But, what do we learn from it? And I’d say there’s always something to learn from our ʻāina and from the sand dunes. And one was making peace. Kahekili met with his family from Moku o Keawe, who came to wage war with him, and he allowed them to go and leave. He did not decimate them completely. And I think we could all learn a lot from that. Making choices that bring about peace. And in this school, I see the same thing because that little piece of land is more alive than all the rest of the school, I think. You know, the feeling of the ʻāina being alive in that little place where they, the people, I guess the maintenance people, have built a garden, and there are plants growing back there. Just makes me feel like this would be such a great area for the students to learn about ʻāina. Being in the ʻāina, having a piece of live ʻāina to go to or to have that classroom. So anyway, I was just thinking that it would be great if the adult education program came out into these portable classrooms that they have here, and the kids got to have a newer school that was built into the ʻāina. With the ʻāina. And, that would be somewhat of a solution for the sand dunes, which we are still working to affect. To build balance and the future of our community in the best way possible.”

ASSESSMENT OF CULTURAL IMPACTS

This section reviews and synthesizes background research and consultation for information, perspectives, and opinions regarding:

- The cultural resources (defined as practices, beliefs, and features), and their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the broader site;
- The nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project;
- An explanation of confidential information, if any, that has been withheld from public disclosure in the assessment; and,
- A discussion concerning any conflicting information, if applicable, in regard to identified cultural resources, practices, and beliefs.

It then provides an assessment of impacts posed by the proposed project to cultural resources – defined as practices, beliefs, and features – within the project area. The scope of the analysis was commensurate to the breadth and depth of information gathered during consultation. In this instance, the effort included consideration and discussion of:

- The potential effect of any proposed physical alteration on cultural resources (defined as practices, beliefs, and features);
- The potential of the proposed action to isolate cultural resources from their setting; and,
- The potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.

Background Research and Consultation Synthesis

Background research shows the project area in Wailuku is situated within a greater, contiguous cultural landscape and integrated system of resource management established by Native Hawaiians. Hawaiian oral traditions describe Wailuku and Waikapū as land divisions with cultivated inland regions, highly complex agricultural and noted aquacultural systems, shoreline resource cultivation, and numerous religious sites, and other wahi kupuna and wahi pana. The project area in Wailuku is located in in Ke Kula o Kamaʻomaʻo, the plains of Central Maui, which host an expansive sand dune system that traditionally served as a battlefield and burial ground. Wailuku appears on the earliest Hawaiian cartographic representations of kahiko (*old, ancient, traditional*) land divisions like moku and ahupuaʻa, underscoring the importance of the place in Hawaiian geographies.

Sugar plantations active in the project area vicinity included the Hawaiian Commercial Company which merged with the Maui Agricultural Company to become the Hawaiian Commercial and Sugar Company, managed by Asa Baldwin. In 1882, the project and study areas were components of an illegal and unauthorized sale of the 24,000 acre Wailuku Ahupuaʻa – Crown Lands - to California sugar baron Claus Spreckles by Princess Ruth Keʻelikolani, a land deal that allowed Spreckles to acquire inalienable Crown Lands from an individual who did not have the authority or right to sell them.

The project area remained undeveloped, with natural topography until the late 1960s. In 1968, the installation of a papaya and lilikoi fruit plantation by Orchards Hawaii occurred in the project area and involved extensive ground disturbance and the modification, reduction, and leveling of

the natural sand dune associated with occurred in 1968 (Miura et al. 1983:2). Archaeological reports record intact or partially intact sand dune systems are recorded south and west of the project area through the 1980s (Neller 1984:2; Miura et al. 1983:2).

In 1971, the MHS campus was established in its current location (Maui High School 2023). Photographs of the project area from the 1970s show it as undeveloped land with forested and vegetated segments that were observed roughly intact during the field inspection for this study, roughly four decades later. The photographs also the presence of capture sugar cane fields and continued extensive additional ground disturbance in lands to the south and west in the 1980s and 1990s.

Previous archaeological studies in the project area and vicinity further evince the Hawaiian cultural understanding of the dune systems in Central Maui as battlefields and a burial ground. Most studies note burials as an obvious and heightened concern in the project area and vicinity. Three compliance archaeological studies have occurred in the 2.2 acre project area and no historic properties are officially recorded as associated with the project area (Cordle, Fortini, and Dega 2007; Frederickson 2009; Yucha, Yates, and Hammatt 2020). Not enough information is available to understand sedimentary deposition and the likelihood of subsurface historic properties in the project area because Shefcheck, Dega, and Fortini 2005 was not available, and documentary evidence of subsurface excavations in the project area were not provided (Cordle, Fortini, and Dega 2007). Eight compliance-related previous archaeological studies have occurred directly south and southwest of the current project area, although some reports could not be located for this study. Within the vicinity, the Maui Lani Burial Complex (SIHP #-50-50-04-02797) is located roughly ¼ mile northwest of the current project area, and the Kahului Historic District (SIHP #-1607) is located roughly ½ mile to the north (Rotunno-Hazuka et al. 1995:i). SIHP #5404, two burials, were revealed on the Maui Lani development and ordered disinterred and relocated to SIHP #4146, a burial preserve in the Maui Lani golf course whose precise location is indeterminate based currently available information (Rotunno-Hazuka and Pantaleo 2004:i). Writing in 2004, but without further detailed references, Rotunno-Hazuka and Pantaleo (2004:i) state: "…to date, 63 find spots (localized areas with human remains) containing over 100 Native Hawaiian burials; [sic] have been documented at Maui Lani," which is just south of the project area.

Several previous archaeological studies underscored the increased likelihood for burials within the dune system, need to abide by community concerns regarding this, and the need for all stages of proposed projects to comply with historic preservation rules and regulations (Kennedy et al. 1992:30; Miura and Marvin 1983:4). Specifically, on the basis of the many burials revealed in the sand dune system, Rotunno-Hazuka and Pantaleo declare "the inland dunes as a traditional Native Hawaiian burial ground," (Rotunno-Hazuka and Pantaleo 2004:15). Lastly, a 2009 SHPD determination (DLNR 2009:2; Appendix A) requires archaeological monitoring of all ground disturbance activities in the northeastern Maui HS campus as well as a SHPD-approved Archaeological Monitoring Plan in place prior to ground disturbing activities.

Clare Apana, president of Mālama Kakanilua, is a descendant of Wailuku, Maui. Her life and advocacy efforts have been dedicated to the protection of iwi kūpuna. Out of respect for Apana's wishes not to have the consultation she generously offered paraphrased, the reader is referred to the consultation synthesis offered in the previous section.

Impact Assessment

Based on ethnohistorical and historical research and previous archaeological studies as well as consultation efforts conducted for this study, cultural resources, defined as practices and features, associated with the project area include:

- **Iwi kūpuna**, which Hawaiian oral traditions associate with Ke Kula o Kamaʻomaʻo, the plains of Central Maui; these oral traditions are secondarily corroborated by archaeological studies and the consultation provided for this report
- **Hawaiian oral traditions**, vessels of ancestral knowledge across centuries and generations, consultation provided for this report
- **Wahi kūpuna**, that relay cultural knowledge and relationship to place
- **ʻUlu (breadfruit), kalo (taro), maiʻa (bananas), and ʻuala (sweet potato), potentially loʻi,** as recorded in Hawaiian oral traditions, Bishop Museum research initiatives, and consultation provided for this report
- **Kiliʻoʻopu, ʻUlalena, Nāulu, and Uhiwai,** the named rains of Named rains of Wailuku Ahupuaʻa, as recorded in Hawaiian oral traditions

Regarding the potential effect of any proposed physical alteration to cultural resources, practices and features within the project area/vicinity, it is appropriate to emphasize the verbatim perspectives offered by Apana during consultation for this study.

Regarding **iwi kūpuna**, Apana stated concern for the potential discoveries that may be found in the project area. with Luana Gardens being just one block away from the project site and knowing its history with the sheer concentration of burials found there. In particular, Apana reflected on Hale Mahaolu Luana Gardens Apartment complex and Maui Waena Intermediate School. Apana shared, “Luana Gardens is right across the street. One of the first places that they found burials in concentration during the time that they were reporting them.” When asked for clarification on what year this incident would have occurred, Apana stated, “Geez, I would have to say the eighties. And you can easily find it. They have a report of it. They found lots of burials there.”

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Apana’s first comments, prior to having walked the project area, were expressions of concern for the project area’s location and closeness to Maui Waena Intermediate School and Luana Gardens, areas that have historically been reported to have disturbed and desecrated a number of burials. After physically walking the project site, Apana was asked again, “Now, having walked the space, is the locale of the project area something concerning to you?” She responded, “Yes. Because in the sand, you also get cultural layers that are two or three deep. So, you get one layer and then you go down another 8-10 feet and you get another layer. And then you could go one more time. You know, I haven’t seen more than three. But it’s not unusual to have that, you know. So, I suppose, as a sand dune, that could happen. You get cultural layers like that. If some of the archaeologists had done their job and actually written their reports about what they found when they monitored, you’d know that much more clearly.”

Recommendations

This section summarizes concerns and recommendations related to cultural impacts by the proposed project to cultural resources – defined as practices, beliefs, and features – within the project area shared by Apana. Her verbatim consultation perspectives featured below include feedback regarding:

- How the project might impact iwi kūpuna, wahi kūpuna and other cultural resources within or around the project area;
- Anticipated adverse impacts to cultural resources resulting from the proposed project;
- Solutions that would address any concerns shared;
- Preferred alternatives to the proposed project;
- Any preferred or desired mitigation (defined as actions that avoid, minimize, rectify, or reduce the impacts of a project) measures relative to the impacts posed by the proposed project.
- Mitigation measures – actions that avoid, minimize, rectify, or reduce the impacts of a project – distilled from perspectives shared during consultation summarized in the previous section and synthesized in this chapter

In consideration of what was observed and her knowledge of the project area, Apana recommended, "I really hope that they would consider having buildings that actually do less ground disturbance that can be built above ground with all the infrastructure built right there on top of the ground, rather than having to dig like six or eight feet down into burial grounds. Because we don't know. It looks like fill, but you don't know what's there. And this is the place where they're always *surprised,* 'Oh, burials?!' Ah! We thought that was probably a very good possibility. So, I'd say, why don't we plan not to disturb our kūpuna and let them lay in as much peace as they can and build something that would honor them, like building something that actually respects the ʻāina and builds sustainably for the ʻāina momona. The ʻāina momona of the children here. Apana stressed the recommendation, "They should actually build buildings that go above ground and have the infrastructure without digging into the ground. It has never been done in a school except for these portables. It's never been done to actually design it so that you didn't ground disturb."

When posed the question, what would your recommendation be if they were to proceed with this project? Apana responded, "To do as little ground disturbance as possible. And if it costs a little bit more, it would probably be worth it. From what you have all around you, you know, it would be very possible that if they cleared out the area here, then there would be burials."

Apana also commented on the need for development processes to be proactive in anticipating and redirecting the course of development over burial grounds. Apana shared, "I also want to say that I know somebody who worked in many of the A & B [Alexander & Baldwin] and Maui Lani projects in these sand dunes. And he says he never hit an iwi kūpuna because he can feel them, and he reworks his course. And I think it would be important for people who are going to work on this project to be able to speak to somebody like him or to other people, like our people, Tommy and Vicky Palafox, who work with us, and they do kahuna pule for us. And so they, essentially, do prayers for us with our iwi kūpuna here in Maui, in the sand dunes. And it would be very honoring if somehow they could be able to help to guide the understanding and the work crew and even the teachers here." Apana's recommendation is for developers and project managers to be proactive and allow for cultural consultants to be contacted for engagement, with the autonomy to recommend remapping of sites if necessary. She commented, "And, if it does happen [discovery of burials], then I would hope that they would be called to take care of it rather than an

archaeologist. You can call the archaeologist, but please let our people take care of our own iwi kūpuna."

Apana's underlying recommendation for proceeding with this proposed project commented, "Do as little ground disturbance as possible. If you can do something where you don't have to do the ground disturbance, you know, you could be taking the chance and digging up bones, maybe you could, and it wasn't something that wasn't really irreverent, I don't know that they would mind, especially if it was for the kids." In sharing her belief of the importance of connecting children to ʻāina and the potential for that to be integrated into education, Apana stated, "To me, I think it's somewhat appropriate, for the kids, even if maybe there are burials in there, because of that being the last space that they didn't take. And the way it looks and feels. But it would be a beautiful thing for them to have an education so they could feel ʻāina, you know?"

It is appropriate for this section to close with recommendations from Apana, and the generous consultation she provided for this study. When asked to share her overall thoughts and recommendations for this project Apana shared the following reflection:

> "So, this school is right in the area of these sand dune complexes. I know from being in the yard of my sister, who's a block away, that's definitely sand in the ground. And with the sand, is the traditional burial ground. And there have been so many burials found in this area, across the street in the presidential condo home apartments living area, up the street at Maui Waena School. The entire neighborhood that borders the Maui Waena School and all the way across Maui Lani has a residential neighborhood, which just shows us that this is a traditional burial ground. But, what do we learn from it? And I'd say there's always something to learn from our ʻāina and from the sand dunes. And one was making peace. Kahekili met with his family from Moku o Keawe, who came to wage war with him, and he allowed them to go and leave. He did not decimate them completely. And I think we could all learn a lot from that. Making choices that bring about peace. And in this school, I see the same thing because that little piece of land is more alive than all the rest of the school, I think. You know, the feeling of the ʻāina being alive in that little place where they, the people, I guess the maintenance people, have built a garden, and there are plants growing back there. Just makes me feel like this would be such a great area for the students to learn about ʻāina. Being in the ʻāina, having a piece of live ʻāina to go to or to have that classroom. So anyway, I was just thinking that it would be great if the adult education program came out into these portable classrooms that they have here, and the kids got to have a newer school that was built into the ʻāina. With the ʻāina. And, that would be somewhat of a solution for the sand dunes, which we are still working to affect. To build balance and the future of our community in the best way possible."

Apana shared her recollection of the famed Battle of Kakanilua, which was fought between the Hawaiʻi chief, Kalaniʻōpuʻu, and Maui chief, Kahekili. She shared this moʻolelo in reflecting on the potential of what could be done for this project area and the lessons that could be learned. Apana shared, "And the history of this area being the second day of the Battle of Kakanilua and they [Kalaniʻōpuʻu and Kahekili] purposely fought down off the sand dunes, in Waikapū and fought this battle down here, down lower." She reflected and shared the lesson of this moʻolelo:

> "Well, the thing that you really could learn from it [the Battle of Kakanilua], is that they [Kalaniʻōpuʻu and Kahekili] fought, and they really needed to stop. Before either side was demolished. And both of them were really hurting. And so, when Keōua was carried across the sand by his uncle and the fighting stopped, I think

that that really was the lesson, that it was time to make peace. They were both really hurting. But it was the second day that the fighting continued with more of the regular regimens, you know, the makaʻāinana warriors. And, so his uncle allows him to leave and the battle stops. Kahekili allows them to leave and the battle stops, and then they go back and prepare for another battle, to come back. So, what do we learn? I think the sand dunes here really show kānaka a lot about what we haven't learned to do. And, the whole premise of the Kalaniʻōpuʻu being so sure that he could win this and going into battle and then having his royal guard the ʻĀlapa and Piʻipiʻi just demolished on the first day of fighting. And then Kalaniʻōpuʻu saying, 'I'm gonna fight again!' But the battle ends with peace. We can make better choices. If we can make better choices today, say, in how we build that little space out. You know, can it be something that does not infringe upon what may be in the ground? A burial area of our kānaka. Can we honor that? Honor them? Can we bring ʻāina to life here on this campus? We have every possibility. I would hope that a school could have some figured thoughts when they make this plan like this, and that they could actually build in honor of our people who gave up their resting places so that we can have homes, roads, streets, shopping centers, and schools. But how could we honor them? But to make it the very best for our children. So, I think there are many more people who know more about the building of this school and what may have happened with the burial grounds here, but I think that always, for me, the sand dunes represent possibilities of doing our best. And doing better. Making choices that benefit our children and future."

Considerations

"Please consider the words of someone who actually helped to establish the area as a living garden, a place of being in ʻāina. From a student who actually saw the benefits of this land being used as an agricultural class, [they] hope that it will again return to its former status."

- Clare Apana, consultation provided specifically for this study

Additionally, and from a space of wahi kūpuna stewardship and regulatory compliance expertise, Nohopapa Hawaiʻi advises several considerations regarding the proposed project's potential impacts to cultural resources (practices, features, and beliefs) associated with the project area and/or vicinity:

- **Consultation early and often.** Should the footprint or other characteristics of the proposed project change significantly as it unfolds, **additional and expanded consultation is recommended** to ensure community members have the opportunity to provide input on updated potential impacts of the proposed project to cultural resources per the requirements of the Hawaii Environmental Policy Act and its implementing legislation Hawaii Revised Statutes (HRS) §343 and 1997 Environmental Council Guidelines for Assessing Cultural Impacts. Considering the proximity of iwi kūpuna as well as wahi kūpuna/historic properties to the project area and the large amount and scale of ground disturbance and alteration of the project area that is proposed, **we recommend continued community consultation for the duration of this project** from the design plan and execution phases to its completion. This would include **Community care of any iwi kūpuna revealed** in accordance with the best practices outlined by Apana.

- **Carefully considered project design.** Project design should make every effort to limit ground disturbance. The design team should consider options for building the land up

before developing it, avoiding the disturbance of natural dune sediments and fill that are known to contain iwi kūpuna. As shared by Apana: "[B]uild something that would honor them, like building something that actually respects the ʻāina and builds sustainably for the ʻāina momona. The ʻāina momona of the children here. Apana stressed the recommendation, "They should actually build buildings that go above ground and have the infrastructure without digging into the ground. It has never been done in a school except for these portables. It's never been done to actually design it so that you didn't ground disturb."
These measures, which are optimal under the auspices of a project, additionally benefit the project timeline and budget.

- **Cultural monitoring alongside archaeological monitoring** is appropriate for this location given the sensitive nature of the dune deposits as well as professional best practices.

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APPENDIX A: COMMUNITY PARTICIPATION LETTER

NOHOPAPA HAWAIʻI

January 2024

Welina mai me ke aloha,

On behalf of Bowers and Kubota Consulting, Nohopapa Hawaiʻi, LLC, is conducting a Cultural Impact Assessment (CIA), and Hawaiʻi Revised Statutes (HRS) §6E Consultation supporting environmental and historic preservation compliance review for the Department of Education (DOE) Facilities Maintenance Branch (FMB) and Maui High School (MHS) Facilities Project at MHS, Wailuku Ahupuaʻa, Wailuku Moku, Maui Mokupuni (TMK: 3-8-007:098) (Figure 1 and Figure 2).

The proposed project includes the addition of a new one-story building and parking lot for DOE's Maui District Mowing Facility and a new one-story building and parking lot for the McKinley Community School for Adults (CSA). The proposed project will also involve constructing two new driveways to connect each facility to West Papa Avenue and provide electrical, communications, water, sewer, and drainage utilities for each building. Extensive ground disturbance in support of construction is anticipated.

This CIA aims to gather and evaluate the proposed project's potential impacts on the Hawaiian cultural practices and resources associated with the project area in Wailuku Ahupuaʻa. We would like to engage with individuals, ʻohana, and/or organizations with relationships to this area. In particular, we would like to gather information relating to:

- **Cultural knowledge of moʻolelo, kaʻao, inoa ʻāina, mele, oli, ʻōlelo noʻeau, and hula related to the project area**
- **Knowledge of wahi pana, wahi kapu, and wahi kūpuna and cultural practices associated with these wahi**
- **Knowledge of the ʻāina, natural landscapes and resources, and associated cultural uses**
- **Concerns regarding how this project might impact any Hawaiian biocultural resources or practices within or around the project area**
- **Suggestions, impact mitigations, and recommendations regarding the management and stewardship of wahi kūpuna in and around the project area**
- **Referrals of kūpuna and kamaʻāina who are knowledgeable of the project area and might be willing to participate in this study**

Please let us know if you are interested and available to participate in consultation for this important project. You can participate via a virtual or in-person interview, group interview, online survey (Link), or by filling out the attached questionnaire.

We look forward to collaborating with you to document your manaʻo and recommendations to assess any cultural impacts that might stem from this proposed project at Maui High School, Wailuku Ahupuaʻa.

Me ka haʻahaʻa,
Kalena Lee-Agcaoili
kalena@nohopapa.com
Nohopapa Hawaiʻi, LLC website https://www.nohopapa.com/

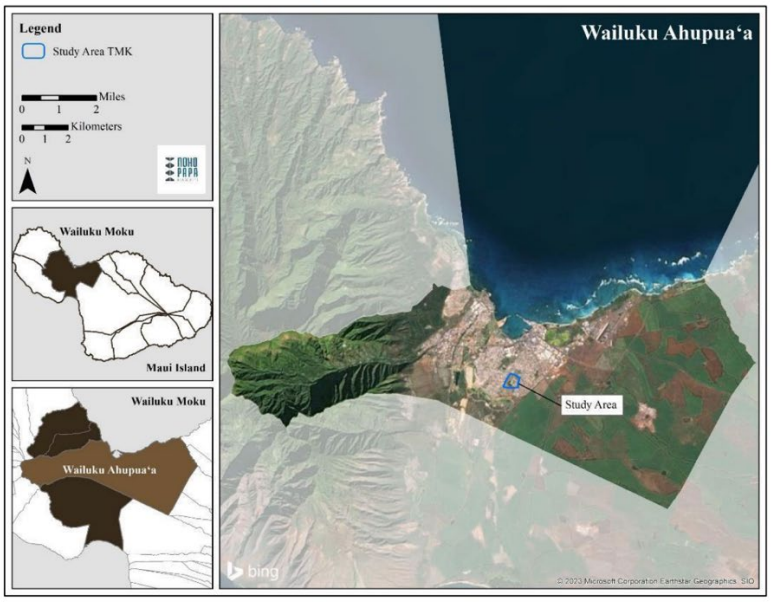

Figure 1. Aerial overview of the study area outlined in blue. Located in Wailuku Ahupua'a, Wailuku Moku, Maui Mokupuni (TMK: 3-8-007:098) (Google Earth)

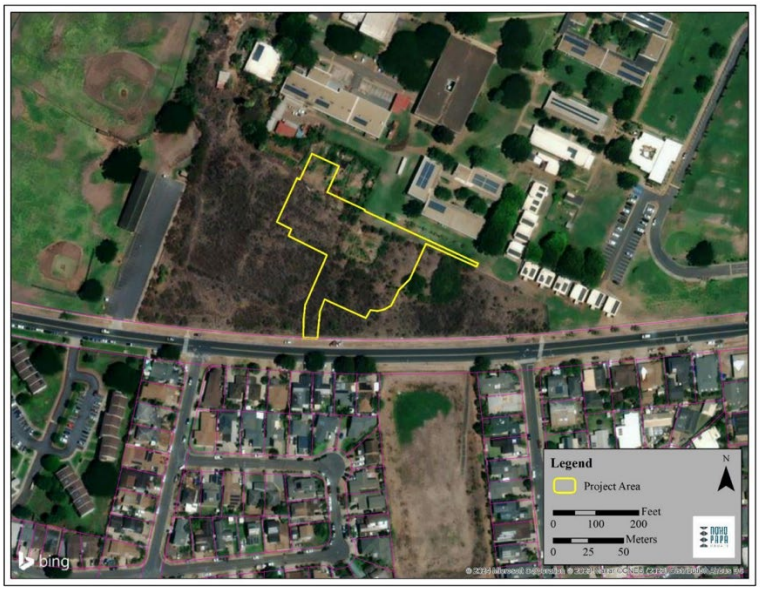

Figure 2. Aerial photo of the updated project area in Wailuku Ahupua'a, Wailuku Moku, Maui Mokupuni (TMK: 3-8-007:098) (Google Earth)

APPENDIX B: INTERVIEW THEMES AND QUESTIONS

Maui High School, Wailuku Ahupua'a CIA Questionnaire

Interviewer: _____ Date: _____ Location: _____

**Note, answering the following questions is optional*

Mo'okū'auhau

Name:	
Where did you grow up? Where do you live today?	
How are you pili to this place? o Is Wailuku significant to you/your 'ohana? If so, how?	
Do you/your 'ohana mālama this place or any locations nearby? If so, how?	
Is your 'ohana from the Wailuku area and/or surrounding ahupua'a? o Do you/your 'ohana have any stories about the area? *(Share any connections to this wahi)*	

Biocultural Landscapes, Resources, Uses, and Practices

Are there any culturally important places you know, around, or connected to Wailuku? o Any prominent geographical features, boundary markers, habitation, trails, burial sites, or religious sites? o What's the cultural significance of these sites/areas? o Do you know of any historical maps or photos that depict changing land use and/or settlement patterns?	
What native and/or introduced plants and animals are associated with Wailuku? o In the surrounding area(s)? o Traditionally and historically? *Such as growing, cultivation, mo'olelo* o Cultural significance and/or uses of these resources?	
Do you know of any ocean and freshwater resources, springs, and streams? o Cultural significance and/or uses of these resources?	
Are you aware of any seasonal changes to the natural landscape?	

1

Do you know of any iwi kūpuna previously revealed in the project area or vicinity?	

Moʻolelo, Inoa ʻĀina, Mele, Oli, ʻŌlelo Noʻeau

Any mele, ʻōlelo noʻeau, oli, or other oral or cultural traditions that reflect a sense of place and cultural identity for this place and its people?	

Cultural Practices

Do you know of any "old" ways associated with this place that are no longer practiced?	
Do you gather or use resources from this place? If so, what kind?	
Do you or your ʻohana engage in activities or cultural practices associated with this place? If so, what kind?	
Do you know of any cultural practices associated with the Maui High School (MHS) Facilities Project in the Wailuku Ahupuaʻa, and/or the surrounding area?	
Can these cultural practices be integrated into resource management and stewardship of this place today? If so, how?	
Are there inappropriate practices/protocols/uses for the Maui High School (MHS) Facilities Project in Wailuku Ahupuaʻa?	

Concerns and Recommendations

There is an enhanced possibility for iwi kūpuna to be revealed on the MHS campus. The current project area was natural sand dunes until the late 1960s, when it was used for a fruit plantation. And, the proposed project involves development and ground disturbance. Given these factors, do you have any iwi kūpuna-related concerns or recommendations to share?	
Any concerns regarding how this project might impact any wahi kūpuna, cultural resources, or cultural practices within or around the project area?	

Specifically, do you foresee any adverse impacts to cultural resources, practices, or features resulting from the proposed project?	
Do you have any preferred alternatives to the proposed project?	
Do you wish to share any preferred or desired mitigation* measures relative to the impacts proposed by the proposed project? **Mitigation = actions that avoid, minimize, rectify, or reduce the impacts of a project*	
Do you have any short or long-term concerns regarding the project? Please explain.	
Do you have any recommendations regarding site management or protection and development in the area?	
Any other mana'o you'd like to share? *(i.e., recommendations, concerns, questions)*	

Contact Information & Referrals

You'll have the opportunity to review your written transcript/interview summary and make any additions, deletions, or corrections as you wish. What is the best way to send you the interview to review & approve? *(Email or Mail)*	
Can you refer us to other individuals or organizations we should talk to?	
Are there any parts of this interview you do not want publicly disclosed?	
Please provide your mailing address so we can send you a makana as a Mahalo for sharing your valued mana'o and 'ike.	

APPENDIX C: INFORMED CONSENT FORM

NOHOPAPA HAWAI'I

INFORMED CONSENT FORM

Aloha mai, Nohopapa Hawai'i appreciates your generosity and willingness to share your knowledge of the wahi pana of Wailuku and its surrounding areas. This mana'o will be included in the Cultural Impact Assessment (CIA) for the proposed new building and parking lot for the Department of Education (DOE) Facilities Maintenance Branch (FMB) and Maui High School (MHS) Facilities Project at MHS, Wailuku Ahupua'a, Wailuku Moku, Maui Mokupuni.

Nohopapa Hawai'i understands our responsibility to respect the wishes and concerns of the interviewees participating in this study. Here are the procedures we promise to follow:

1. The interview will not be recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript and summary of your interview. At that time, you may make any additions, deletions, or corrections you wish.
3. You will be given a copy of the interview transcript and/or summary for your records.
4. You will be given a copy of this release form for your records.
5. You will be given a copy of any photographs taken of you during the interview.

For your protection, we need your written confirmation that (check yes or no):

1. You consent to use the complete transcript and/or interview quotes for this study. Yes No
2. If a photograph is taken during the interview, you consent to the photograph being included in this study. Yes No

I, _____, agree to the procedures outlined above and,
(Please print your name here)
by my signature, give my consent and release of this interview and/or photograph to be used as specified.

_____
(Signature)

_____
(Date)

Nohopapa Hawai'i, LLC * nohopapa.hawaii@gmail.com

APPENDIX D: THE ENVIRONMENTAL COUNCIL'S 1997 GUIDELINES FOR ASSESSING CULTURAL IMPACTS

INTRODUCTION

It is the policy of the State of Hawai'i under Chapter 343, HRS, to alert decision makers, through the environmental assessment process, about significant environmental effects which may result from the implementation of certain actions. An environmental assessment of cultural impacts gathers information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, and promotes responsible decision making.

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project.

The Environmental Council encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area. The Council provides the following methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources.

BACKGROUND

Prior to the arrival of westerners and the ideas of private land ownership, Hawaiians freely accessed and gathered resources of the land and seas to fulfill their community responsibilities. During the Māhele of 1848, large tracts of land were divided and control was given to private individuals. When King Kamehameha the III was forced to set up this new system of land ownership, he reserved the right of access to privately owned lands for Native Hawaiian ahupua'a tenants. However, with the later emergence of the western concept of land ownership, many Hawaiians were denied access to previously available traditional resources.

In 1978, the Hawaii constitution was amended to protect and preserve traditional and customary rights of Native Hawaiians. Then in 1995 the Hawaii Supreme Court confirmed that Native Hawaiians have rights to access undeveloped and under- developed private lands. Recently, state lawmakers clarified that government agencies and private developers must assess the impacts of their development on the traditional practices of Native Hawaiians as well as the cultural resources of all people of Hawaii. These Hawaii laws, and the National Historic Preservation Act, clearly mandate federal agencies in Hawaii, including the military, to evaluate the impacts of their actions on traditional practices and cultural resources.

If you own or control undeveloped or under-developed lands in Hawaii, here are some hints as to whether traditional practices are occurring or may have occurred on your lands. If there is a trail on your property, that may be an indication of traditional practices or customary usage. Other clues include streams, caves and native plants. Another important point to remember is that, although traditional practices may have been interrupted for many years, these customary practices cannot be denied in the future.

These traditional practices of Native Hawaiians were primarily for subsistence, medicinal, religious, and cultural purposes. Examples of traditional subsistence practices include fishing,

picking ʻopihi and collecting limu or seaweed. The collection of herbs to cure the sick is an example of a traditional medicinal practice. The underlying purpose for conducting these traditional practices is to fulfill one's community responsibilities, such as feeding people or healing the sick.

As it is the responsibility of Native Hawaiians to conduct these traditional practices, government agencies and private developers also have a responsibility to follow the law and assess the impacts of their actions on traditional and cultural resources.

The State Environmental Council has prepared guidelines for assessing cultural resources and has compiled a directory of cultural consultants who can conduct such studies. The State Historic Preservation Division has drafted guidelines on how to conduct ethnographic inventory surveys. And the Office of Planning has recently completed a case study on traditional gathering rights on Kauaʻi.

The most important element of preparing Cultural Impact Assessments is consulting with community groups, especially with expert and responsible cultural practitioners within the ahupuaʻa of the project site. Conducting the appropriate documentary research should then follow the interviews with the experts. Documentary research should include analysis of Māhele and land records and review of transcripts of previous ethnographic interviews. Once all the information has been collected, and verified by the community experts, the assessment can then be used to protect and preserve these valuable traditional practices.

Native Hawaiians performed these traditional and customary practices out of a sense of responsibility: to feed their families, cure the sick, nurture the land, and honor their ancestors. As stewards of this sacred land, we too have a responsibility to preserve, protect and restore these cultural resources for future generations.

CULTURAL IMPACT ASSESSMENT METHODOLOGY

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

Such information may be obtained through scoping, community meetings, ethnographic interviews and oral histories. Information provided by knowledgeable informants, including traditional cultural practitioners, can be applied to the analysis of cultural impacts in conjunction with information concerning cultural practices and features obtained through consultation and from documentary research.

In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. Thus, for example, a proposed action that may not physically alter gathering practices, but may affect access to gathering areas would be included in the assessment. An ahupuaʻa is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupuaʻa and the geographical extent of the study area should take into account those cultural practices.
The historical period studied in a cultural impact assessment should commence with the initial presence in the area of the particular group whose cultural practices and features are being

assessed. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs.

The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man-made and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

1. Identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupuaʻa;
2. Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
3. Receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
4. Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
5. Identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
6. Assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Interviews and oral histories with knowledgeable individuals may be recorded, if consent is given, and field visits by preparers accompanied by informants are encouraged. Persons interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible. For example, the precise location of human burials are likely to be withheld from a cultural impact assessment, but it is important that the document identify the impact a project would have on the burials. At times an informant may provide information only on the condition that it remain in confidence. The wishes of the informant should be respected.

Primary source materials reviewed and analyzed may include, as appropriate: Māhele, land court, census and tax records, including testimonies; vital statistics records; family histories and genealogies; previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs; and other archival documents, including correspondence, newspaper or almanac articles, and visitor journals. Secondary source materials such as historical, sociological, and anthropological texts, manuscripts, and similar materials, published and unpublished, should also be consulted. Other materials which should be examined include prior land use proposals, decisions, and rulings which pertain to the study area.

CULTURAL IMPACT ASSESSMENT CONTENTS

In addition to the content requirements for environmental assessments and environmental impact statements, which are set out in HAR §§ 11-200-10 and 16 through 18, the portion of the assessment concerning cultural impacts should address, but not necessarily be limited to, the following matters:

1. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and

features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.

2. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
3. Ethnographic and oral history interview procedures, including the circumstances, under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
4. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
5. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
6. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
7. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project.
8. An explanation of confidential information that has been withheld from public disclosure in the assessment.
9. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
10. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
11. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

The inclusion of this information will help make environmental assessments and environmental impact statements complete and meet the requirements of Chapter 343, HRS. If you have any questions, please call 586-4185.

APPENDIX E: ACT 50: A BILL FOR AN ACT RELATING TO EIS

Act 50 [State of Hawai'i 2000]. H.B. NO. 2895 H.D.1 was passed by the 20th Legislature and approved by the Governor on April 26, 2000 as Act 50.

A Bill for an Act Relating to Environmental Impact Statements.

SECTION 1. The legislature finds that there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights.

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit" in Hawai'i. Articles IX and XII of the State constitution, other State laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

SECTION 2. Section 343-2, Hawai'i Revised Statutes, is amended by amending the definitions of "environmental impact statement" or "statement" and "significant effect", to read as follows:

"Environmental impact statement" or "statement" means an informational document prepared in compliance with the rules adopted under section 343-6 and which discloses the environmental effects of a proposed action, effects of a proposed action on the economic [and] welfare, social welfare, and cultural practices of the community and State, effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.

The initial statement filed for public review shall be referred to as the draft statement and shall be distinguished from the final statement which is the document that has incorporated the public's comments and the responses to those comments. The final statement is the document that shall be evaluated for acceptability by the respective accepting authority.

"Significant effect" means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic [or] welfare, social welfare[.], or cultural practices of the community and State."

SECTION 3. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 4. This Act shall take effect upon its approval.

(Approved April 26, 2000.)

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