PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME I OF II

Pūlehunui Ahupua'a, Kula Moku, Maui

PROPOSING AGENCY:

Department of Hawaiian Home Lands

PREPARED FOR:

Department of Hawaiian Home Lands
Department of Land and Natural Resources
Department of Accounting and General Services
Department of Public Safety

ACCEPTING AUTHORITY:

Governor, State of Hawai'i

PREPARED BY:

PBR HAWAII
& ASSOCIATES, INC.

Prepared pursuant to Chapter 343, Hawai'i Revised Statutes,
and Chapter 11-200, Hawai'i Administrative Rules

JUNE 2019

PREFACE

Preparation of an Environmental Impact Statement (EIS) is required pursuant to Chapter 343, Hawai‘i Revised Statutes and Chapter 200, Title 11, State of Hawai‘i Department of Health Administrative Rules, based on the use of State funds, and State and County lands.

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SUMMARY SHEET

Brief Description of the Action - DHHL is undertaking a regional infrastructure master planning effort on behalf of four State agency stakeholders involving a coordinated regional infrastructure alternatives analysis for water, wastewater, drainage, and key roadways (the "Infrastructure Regional Study Area"). The regional analysis will evaluate alternatives for regional, sub-regional, and "independent" approaches to infrastructure development.

In addition, the Proposed Action involves DHHL Project Areas ("Pūlehunui North" and "Pūlehunui South"). The land use programs on the DHHL Project Areas are anticipated to involve commercial, light industrial, diversified agricultural, and subsistence agricultural use including agricultural homesteads for DHHL Beneficiaries. A portion of Pūlehunui South may accommodate supporting regional infrastructure, pending consultation and appropriate technical studies.

Significant Beneficial and Adverse Impacts - The beneficial impact of the Proposed Action is to comprehensively plan for the infrastructure requirements of four State agency stakeholders. DHHL is proposing land uses and services that would benefit the DHHL Beneficiary community (by providing income-generating and farming opportunities) and all Maui residents (long-term industrial/commercial and agricultural employment generation center, in addition to employment generated during development). The Proposed Action also accounts for the infrastructure demand of independently proposed land uses and services by other State agencies including commercial/light industrial and public/quasi-public uses, through regional infrastructure master planning.

Proposed Mitigation Measures –Refer to Section 8.7 for a detailed account of proposed mitigation measures.

To mitigate a localized heat island effect in the DHHL Project Areas, proposed landscaping and landscaped buffers will be integrated into the non-agricultural components of proposed improvements in Pūlehunui North and Pūlehunui South. Refer to Section 4.1.

To mitigate impacts to geology and topography, future design work will respect existing topography to the extent practicable. Low-impact Development (LID) strategies will be considered at the DHHL Project Areas, which would further mitigate potential impacts. A discussion of possible interagency coordination on grading efforts is provided in Section 5.8.4. The return of Pūlehunui South to agricultural uses will mitigate long term soil erosion through the use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. To mitigate impacts to soil resources in the DHHL Project Areas, best management practices (BMPs) will be considered by contractors during the construction phase. Refer to Section 4.3.

To mitigate potential impacts from natural hazards, no habitable structures will be built in the Zone AE portion of Pūlehunui South. The Pūlehunui community will not exacerbate any hazard conditions. Potential damage caused by earthquakes and hurricanes will be mitigated, for structures in compliance with the County Building Code.

The Proposed Action is not anticipated to adversely impact downgradient perennial streams, major drainageways, wetlands or waterbodies (and in particular Keālia Pond). There is no anticipated increase in runoff from the DHHL Project Areas towards Keālia Pond. In implementing the proposed design for Pūlehunui South, the total onsite runoff from that property will be reduced by 96 percent compared to existing conditions. To further mitigate impacts to water resources, the BMPs noted above under Soil mitigations will be considered by contractors during the construction phase. Refer to Section 4.5.

No mitigations were recommended regarding the botanical resources in the DHHL Project Areas. DHHL will embrace the use of native plants as a means of water conservation and to support cultural practices; this may positively impact flora resources. Developer(s), contractors, and/or other site users at the DHHL Project Areas will be instructed to adhere to the mitigation strategies recommended by various State and County agencies. Strategies to mitigate impacts to fauna resources consider these animals in particular: ʻōpeʻapeʻa (Hawaiian bat), Blackburn's sphinx moth, nēnē, and passing seabirds. Measures will also be taken to prevent the creation of habitat conditions (e.g., standing water) which may be attractive but ultimately detrimental to wildlife. At the request of DOT-AIR, DHHL will undertake mitigation measures to avoid attracting wildlife. Refer to Section 4.7.

As noted in Section 5.1, SHPD consultation is ongoing; DHHL and/or future developer(s) will comply with the recommended strategies to mitigate adverse impacts to archaeological and historic resources.

The Cultural Impact Assessment (CIA) made a number of recommendations, with the goal of honoring the traditional landscape while protecting cultural resources. DHHL will employ these strategies to the extent practicable. Refer to Section 5.2.

The proposed drainage improvements for Pūlehunui South are anticipated to mitigate some concerns related to drainage. Refer to Section 5.8.4 for a full discussion of existing and proposed drainage conditions.

~~The State of Hawaiʻi, Department of Transportation's (DOT) Federal Aid Highways 2035 Transportation Plan for the District of Maui (Plan) recommended construction of two additional travel lanes on Maui Veterans Highway from Kahului to Piʻilani Highway to increase the highway capacity in order to accommodate the estimated increase in traffic. This coincides with the full buildout of the DHHL Project Areas, and precedes the completion of the Infrastructure Regional Study Area. In addition, t~~The signal timing plans at Maui Veterans Highway/Mehameha Loop (North)/ Kamaʻāina Road, Maui Veterans Highway/DHHL North Access/DLNR Access and Maui Veterans Highway/Mehameha Loop (South)/Pulehunui Motorsports Park Access Road intersections should be optimized to provide favorable throughput progression along Maui Veterans Highway. Traffic signal timing plans will be optimized to improve traffic flow along the highway. DHHL will coordinate with HDOT on its fair share of improvements. DHHL and DLNR will coordinate the Proposed Action with the Statewide Transportation Improvement Program (STIP) and with the DOT to address the need for additional regional capacity for the Maui Veterans Highway. DHHL will also coordinate with DLNR regarding the proposed new intersection on Maui Veterans Highway that will

provide access to both agencies' lands to ensure the proposed access roads to each property align and are acceptable to DOT. DHHL will investigate ways to connect to existing and future public and multimodal transportation networks.

With the following mitigations, the DHHL Project Areas are not anticipated to impact offsite land uses with regard to noise. At Pūlehunui South, a 1,900 foot buffer distance to the highway will mitigate future traffic noise levels at agricultural homesteads. Education uses will be located with minimum 750 foot buffer distance from the highway. Noise from Maui Veterans Highway may constrain uses fronting to the highway, particularly Culture and Arts uses; sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces. DHHL will consider re-locating sensitive uses within the property as needed. A HUD compliant noise study will be conducted to determine whether the FHA/HUD noise standard of 65 DNL will be exceeded at noise sensitive uses at Pūlehunui South. At Pūlehunui North, a minimum 215 foot setback to the highway will be established if a hotel is constructed. Air conditioning will mean windows will be closed and further mitigate noise impacts from the highway and other uses at Pūlehunui North. A minimum setback distance of 110 feet from the highway will mitigate highway noise impacts to Commercial/Light Industrial uses. Sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces.

To address potential man-made hazards due to former military uses, at the appropriate stage(s) in the development process, DHHL will coordinate with the DOH and USACE regarding other possible former uses at the former NAS Puunene and will adhere to applicable technical guidance. DHHL will consult the DOH regarding any anticipated residential or other sensitive uses of the DHHL Project Areas.

To address visual impacts, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

Water efficiency strategies will help to mitigate the impacts of the Proposed Action on water resources. Site users at the DHHL Project Areas will be encouraged to consider water conservation measures. To mitigate impacts to surface and groundwater resources best management practices (BMPs) will be considered by contractors during the construction phase. Refer to Section 5.8.1.

The proposed drainage plan is designed to mitigate a number of drainage deficiencies. These are discussed in detail in Section 5.8.4.

DHHL will work with contractors to minimize the amount of solid waste generated during the construction. After construction, DHHL will implement strategies from the County of Maui Integrated Solid Waste Management Plan (2009) for diverting solid waste from landfills by providing options for recycling.

Agricultural use at Pūlehunui South will require a water supply for irrigation as well as windbreaks to protect the proposed agricultural uses from strong winds and mitigate soil erosion. Long term soil erosion can also be mitigated through use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. Temporary BMPs will be implemented to minimize soil loss and erosion hazards during the construction period, thereby mitigating adverse impacts to future agricultural activities and properties downwind or downstream.

Mitigation of impacts to public services and facilities includes consultation with Federal, State, and County agencies to determine potential secondary impacts. DHHL will coordinate with these agencies accordingly. Additional funds to support certain public services could potentially be allotted from the increased tax revenues resulting from the Proposed Action. To mitigate any adverse impacts to educational facilities, DHHL will consult the DOE regarding school impact fees and other potential impacts to educational resources. DHHL Project Areas will comply with any applicable impact fee requirements. To mitigate impacts to site users related to airports and airfields, should DHHL suspect that fumes, smoke, noise, vibrations, odors, and other airport-related exposures may impact the anticipated uses of its lands, more protective mitigation strategies will be considered at such time, depending on the nature of the concern. Should other unforeseen impacts arise from aircraft activities which are not mitigated by the strategies described in this EIS, DHHL will consider additional measures. At the request of DOT-AIR, DHHL will undertake mitigation measures to avoid attracting wildlife.

The Proposed Action may have cumulative and/or secondary impacts, mitigations for which are discussed herein.

Alternatives Considered – The alternatives considered included: “No Action”; “Alternatives Requiring Actions of a Significantly Different Nature”, “Alternatives Related to Different Designs or Details of the Proposed Action”, and “Postponing Action Pending Further Study”.

Unresolved Issues –While this EIS seeks to address alternatives for regional, sub-regional, and “independent” approaches to infrastructure development, it is possible that one or more State entities will decide to implement an “independent” solution for either drinking water facilities and/or wastewater treatment.

Following the completion of the EIS process, DHHL will pursue an amendment of its Maui Island Plan to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South.

The State of Hawai‘i, Department of Transportation's (DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) recommended construction of two additional

travel lanes on Maui Veterans Highway from Kahului to Pi'ilani Highway to increase the highway capacity in order to accommodate the estimated increase in traffic. ~~It should be noted that the additional lanes in both the north and south direction are not currently on the list of projects on the Statewide Transportation Improvement Program (STIP) for the current Federal Fiscal Year 2015 through 2018.~~ Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038. However the improvement, if/when implemented, would serve to better regional traffic conditions. Due to the uncertainty of when the additional travel lanes may be constructed, DHHL and DLNR will coordinate the Infrastructure Regional Study Area with the STIP and with the DOT to address the need for additional regional capacity for the Maui Veterans Highway. In addition to the improvements described above the County of Maui's Maui Island Plan conceptually identifies two future regional roadways that may further alleviate traffic conditions in the region: the Upcountry-Kīhei Corridor and the Kīhei Mauka Bypass Collector Road. These two regional roadways have not been funded or designed and therefore are excluded from the traffic analysis for the Proposed Action. The anticipated land uses at Pūlehunui South do not preclude accommodation of the Kīhei Mauka Bypass Collector Road through roadway easements and/or right-of-way acquisition. DHHL is open to coordination with other agencies to further explore accommodating the Kīhei Mauka Bypass Collector Road.

Compatibility with Land Use Plans and Policies, and List of Permits or Approvals – In general, public uses and structures are generally viewed as necessary, but require environmental review (such as this EIS). Without a final determination from responsible agencies, a preliminary list of approvals for the DHHL Project Areas is provided on the following page. See also Table 6-5.

RESPONSIBLE AGENCY	PERMIT/APPROVAL
Governor, State of Hawai'i DHHL	Chapter 343, HRS Compliance
State Department of Health – Clean Water Branch	National Pollutant Discharge Elimination System (NPDES) Permit
State Department of Health – Disability and Communication Access Board	Review
State Department of Health – Indoor and Radiological Health Branch	Community Noise Permit (if applicable)
State Department of Health – Safe Drinking Water Branch	New Raw Water Source Capacity review
State Department of Health – Wastewater Branch	Review
State Department of Land and Natural Resources – State Historic Preservation Division	Chapter 6E, HRS Compliance
State Department of Land and Natural Resources – Commission on Water Resource Management	Surface Water Use Permit
State Department of Transportation	Permit to Perform Work within a State Right-of-Way (ROW) Use and Occupancy Agreement Permitted Access
County of Maui Department of Public Works	Grading/Subdivision/Building/Electrical Permits, plan review
County of Maui Department of Water Supply	Review
County of Maui Planning Department and/or Planning Commission	~~Special Flood Hazard~~ Flood Development Permit (if applicable)
County of Maui Wastewater Reclamation Division	Review

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LIST OF ACRONYMS AND ABBREVIATIONS

The following is a list of terms, abbreviations, and acronyms used in this document.

A

A&B	Alexander & Baldwin
AIS	Archaeological inventory survey
ALISH	Agricultural Lands of Importance to the State of Hawai'i
AMSL	Above Mean Sea Level
ASTM	American Society for Testing and Materials
ATA	Austin Tsutsumi & Associates, Inc.
AYSA	Aquifer System Area

B

BMP	Best Management Practice
BOE	State of Hawai'i Board of Education

C

CATV	Cable television
CFR	Code of Federal Regulations
cfs	cubic feet per second
CIA	Cultural Impact Assessment
C.M.W.T.S.	Central Maui Water Transmission System
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
CP	Community Plan
CWRM	State of Hawai'i Commission on Water Resource Management
CZM	Coastal Zone Management

D

DAGS	State of Hawai'i Department of Accounting & General Services
DAGS/PSD	State of Hawai'i Department of Accounting & General Services on behalf of Department of Public Safety
dBA	Decibels
DBEDT	State of Hawai'i Department of Business, Economic Development, and Tourism
DEIS	Draft Environmental Impact Statement
DHHL	State of Hawai'i Department of Hawaiian Home Lands
DLIR	State of Hawai'i Department of Labor and Industrial Relations
DLNR	State of Hawai'i Department of Land and Natural Resources
DMA	Disaster Management Act of 2000
DNL	Day Night Average Sound Level
DOA	State of Hawai'i Department of Agriculture
DOE	State of Hawai'i Department of Education
DOFAW	State of Hawai'i Division of Forestry and Wildlife
DOH	State of Hawai'i Department of Health

~~DOH~~	~~DOH, Environmental Planning Office~~
DOT	State of Hawai‘i Department of Transportation
DOT-AIR	State of Hawai‘i Department of Transportation, Airports Division
DPR	County of Maui Department of Parks and Recreation
DWS	County of Maui Department of Water Supply

E

EA/EISPN	Environmental Assessment/Environmental Impact Statement Preparation Notice
EFIA	Economic and Fiscal Impact Assessment
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
FEA/EISPN	Final Environmental Assessment/Environmental Impact Statement Preparation Notice
EMI	East Maui Irrigation Company, Ltd.
EMS	Emergency Medical Service
EOC	Civil Defense Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ETC	EnviroServices & Training Center

F

FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FIRM	Flood Insurance Rate Map
FTE	Full-time Equivalent

G

gpd	Gallons per day
gpm	Gallons per minute

H

HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAR	Hawai‘i Administrative Rules
HC&S	Hawaiian Commercial & Sugar Company
~~HDOT~~	~~State of Hawai‘i Department of Transportation~~
HEER Office	State of Hawai‘i Department of Health, Hazard Evaluation and Emergency Response Office
HIARNG	Hawai‘i Army National Guard
HRS	Hawai‘i Revised Statutes
HUD	U.S. Department of Housing and Urban Development

I

IAL	Important Agricultural Land
IIFS	Interim Instream Flow Standards

K

KHS	Kīhei High School
KWDP	Kīhei Water Development Project

L

LSB	Land Study Bureau
LID	Low-Impact Development
LOS	Level of Service

M

MCC	Maui County Code
MECO	Maui Electric Company
MFD	(County of Maui) Department of Fire and Public Safety
MG	Million gallons
MGD	Million gallons per day
MOU	Memorandum of Understanding
MPD	County of Maui Police Department
mph	Miles per hour
MRPSC	Maui Regional Public Safety Complex

N

NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NASKA	NAS Kahului
NCDC	National Clean Diesel Campaign
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of the Interior, Natural Resource Conservation Service

O

OEQC	State of Hawai‘i Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs

P

PER	Preliminary Engineering Report
PM	Particulate matter
PMP	Pūlehunui Motorsports Park
PPP	Pollution prevention plan
PRV	Pressure reducing valve
PSD	State of Hawai‘i Department of Public Safety

R

R-1	Highest quality recycled water (significant reduction in viral and bacterial pathogens)
REC	Recognized Environmental Condition
RO	Reverse Osmosis
ROW	Right-of-way

S

S-WTP	Surface Water Treatment Plant
SAT	Soil Aquifer Treatment System
SHPD	State Historic Preservation Division
SIC	Sandwich Isles Communications
SMA	Special Management Area
STIP	Statewide Transportation Improvement Program

T

TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
TRU	Transport Refrigeration Units

U

UGB	Urban Growth Boundary
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank

V

VOC	Volatile Organic Compound

W

W-K	Wailuku-Kahului
WE	Weekend Peak Traffic Hour
WWRD	County of Maui Wastewater Reclamation Division
WSS	DWS' Water System Standards
WTP	Water treatment plant
WWPS	Wastewater pump station
WWRF	Wastewater reclamation facility
WWTF	Wastewater treatment facility

1.0 STATEMENT OF PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 PURPOSE AND NEED

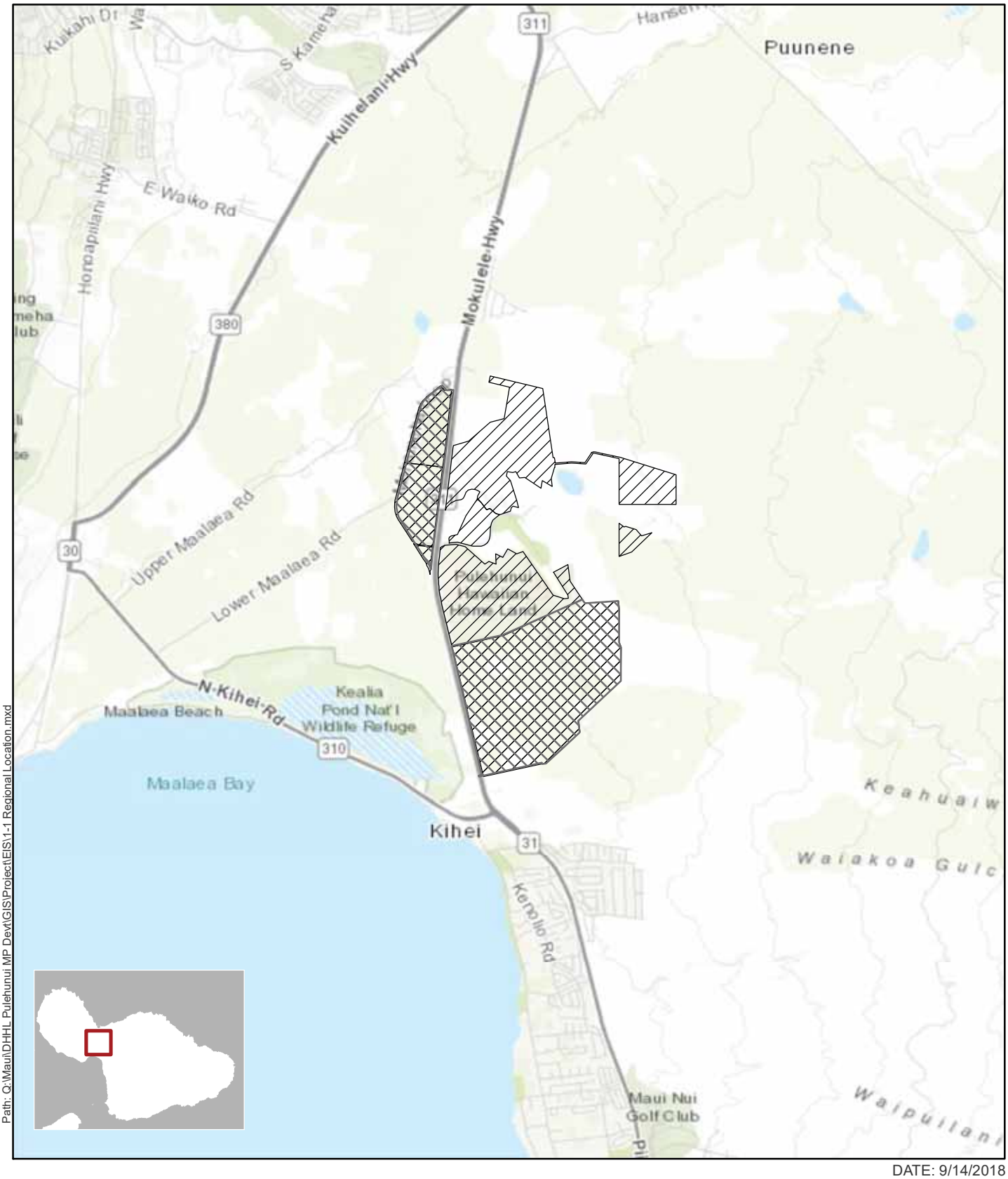
1.1.1 *Purpose*

The primary purpose of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui.

1.1.2 *Need*

DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore, a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable. Figure 1-1 shows the location of the Infrastructure Regional Study Area; Figure 1-2 shows an aerial photograph of the Infrastructure Regional Study Area. Figure 1-3, Tax Map Key, shows the Infrastructure Regional Study Area in the context of surrounding lands.

Pursuant to DHHL's mission the secondary, supporting purpose of this action is to further define the programmatic land uses anticipated on DHHL's lands in Pūlehunui (DHHL Project Areas), through the Beneficiary Consultation process and technical studies and ensure conformance with the (DHHL) *Maui Island Plan* (Department of Hawaiian Home Lands, 2004), to provide direct and indirect benefits to DHHL Beneficiaries and programs in the form of improved lands, homesteading opportunities, and opportunities to pursue revenue generating general leases at Pūlehunui North.



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

FIGURE 1-1:
Regional Location

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands
Island of Maui

North

Linear Scale (miles)
0 0.25 0.5 1

PBR HAWAII & ASSOCIATES, INC.

Source: ESRI Online Basemap.County of Maui, 2018.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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DATE: 9/1/2018

LEGEND

Infrastructure Regional Study Area

Lands Anticipated to Remain Fallow

Figure 1-2:
Aerial Photograph

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

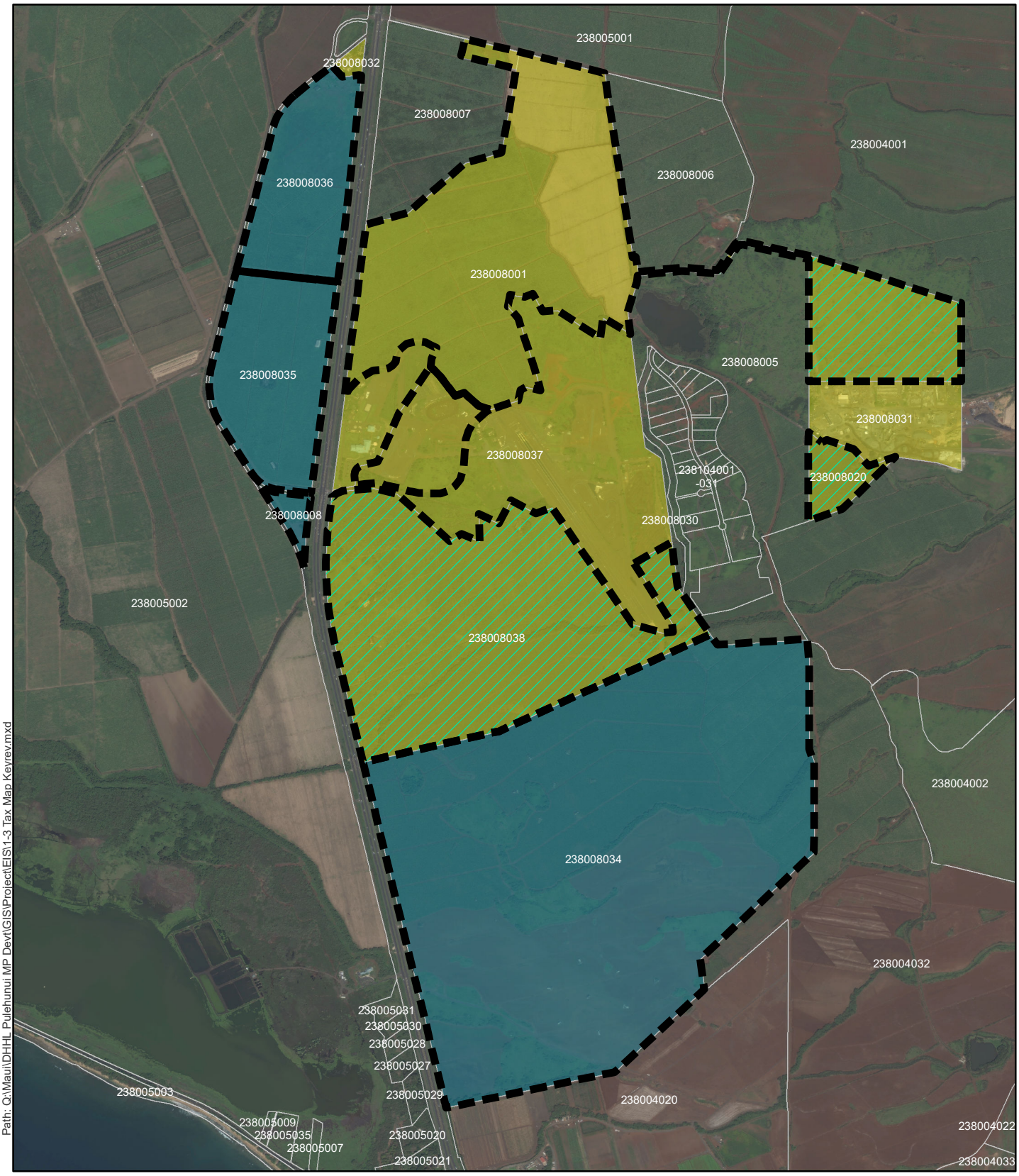
North

Linear Scale (feet)

0 500 1000 2000

Source: County of Maui, 2018. NRCS aerial image.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 10/25/2018

LEGEND

Infrastructure Regional Study Area

Lands Anticipated to Remain Fallow

Land Owner

DHHL

State - non-DHHL

Figure 1-3
Tax Map Key

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: County of Maui, 2018. NRCS aerial image.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

2.0 SUMMARY

This Environmental Impact Statement (EIS) is prepared pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR), Department of Health (DOH), State of Hawai'i. The Proposed Action is an agency-Proposed Action by Department of Hawaiian Home Lands (DHHL) on behalf of multiple State agencies, for a regional infrastructure master plan for Pūlehunui, Island of Maui.

2.1 PROPOSED ACTION PROFILE

Name: Pūlehunui Regional Infrastructure Master Plan

Location: Pūlehunui Ahupua'a, Kula Moku, Maui

Address: Maui Veterans Highway, Maui, HI (Figure 1-1)

Tax Map Keys: TMK (2) 3-8-008:008, 035, and 036 (Pūlehunui North)
TMK (2) 3-8-008:034 (Pūlehunui South)

These four parcels are referred to collectively as the "DHHL Project Areas" ("Pūlehunui North" and Pūlehunui South"). In addition to these lands, the "Infrastructure Regional Study Area" comprises the State-managed lands being assessed under the Proposed Action, including areas proposed for development by the State Department of Land and Natural Resources (DLNR), and the State Department of Accounting and General Services (DAGS) on behalf of the State Department of Public Safety (PSD), see Appendix K.

See Figure 1-2 for DHHL Project Areas ("Pūlehunui North" and Pūlehunui South") and Infrastructure Regional Study Area boundaries, and Figure 1-3, Tax Map Key.

Judicial District: Wailuku

Proposing Agency: State Department of Hawaiian Home Lands (DHHL)

Accepting Authority: Governor of the State of Hawai'i

Recorded Fee Owner: DHHL Project Areas are owned by the State of Hawai'i, Department of Hawaiian Home Lands. Other lands within the Infrastructure Regional Study Area are owned by other State agencies.

Existing Use: Vacant, generally unimproved

Proposed Action: DHHL is undertaking a regional infrastructure master planning effort on behalf of four State agency stakeholders involving a coordinated regional infrastructure alternatives analysis for water, wastewater, drainage, and key roadways. The regional analysis will evaluate

alternatives for regional, sub-regional, and "independent" approaches to infrastructure development.

The land use programs on DHHL Project Areas are anticipated to involve commercial/light industrial ("Pūlehunui North") and commercial, light industrial, diversified agricultural, and subsistence agricultural use including agricultural homesteads for DHHL Beneficiaries ("Pūlehunui South"). A portion of Pūlehunui South may accommodate supporting regional infrastructure, pending consultation and appropriate technical studies.

Land Use Designations:

State Land Use: Agriculture
Department of Hawaiian Home Lands: Industrial, General Agriculture Figure 2-1)
Special Management Area: Not within the SMA

2.2 LOCATION

This description includes only DHHL Project Areas. The Pūlehunui Regional Infrastructure Master Plan incorporates by reference other project information provided by DLNR, and DAGS/PSD for their respective proposed developments in the region. See Section 3.3.2.

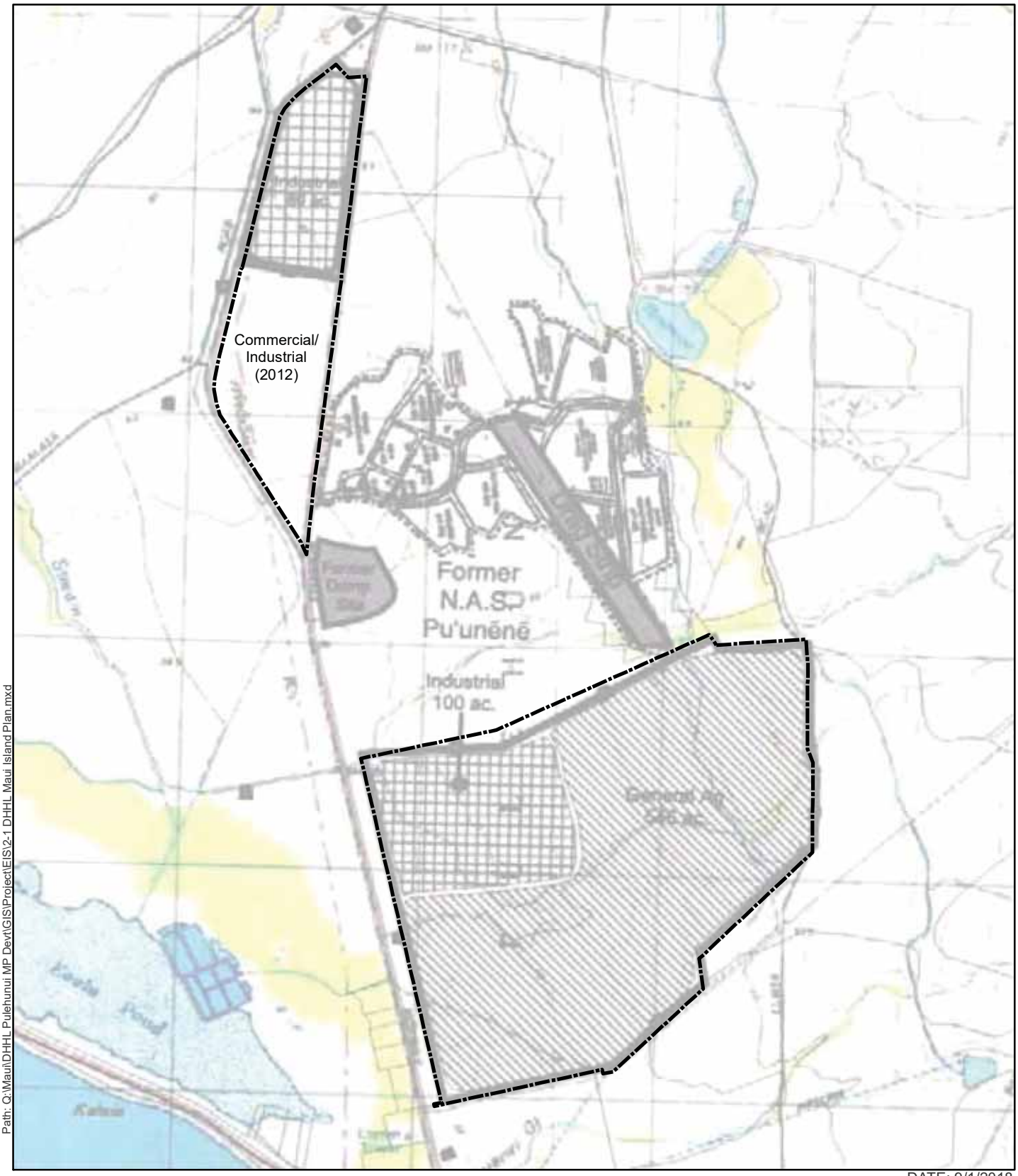
Pūlehunui North and Pūlehunui South are located on both sides of Maui Veterans Highway, near the Puʻunēnē Armory. See Figure 1-1 and Figure 1-2. The total land area of DHHL Project Areas is 830.359 acres. See Figure 1-3, Tax Map Key, for the Infrastructure Regional Study Area in the context of surrounding lands.

2.3 LAND OWNERSHIP

The DHHL Project Areas consist of four parcels: TMK (2) 3-8-008-008, 034, 035, and 036. The total land area of DHHL Project Areas is 830.359 acres. See Figure 1-3, Tax Map Key, for the Infrastructure Regional Study Area in the context of surrounding lands.

Table 2-1: DHHL Project Areas

Area Referred to as:	Tax Map Key (TMK)	Acres
Pūlehunui North	(2) 3-8-008-008	6.926 acres
Pūlehunui South	(2) 3-8-008-034	646.000 acres
Pūlehunui North	(2) 3-8-008-035	97.433 acres
Pūlehunui North	(2) 3-8-008-036	80.000 acres
	Total:	830.359 acres



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DATE: 9/1/2018

LEGEND

- DHHL Project Areas
- General Agriculture
- Industrial

Figure 2-1
DHHL Maui Island Plan
Existing Designation

PŪLEHUNUI REGIONAL
INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

0 500 1000 2000

Source: DHHL Maui Island Plan, 2004.

Most of the DHHL Project Areas were formerly leased to Alexander & Baldwin, Inc. (A&B) for sugarcane cultivation. When A&B transitioned out of sugarcane in 2016, the lease was not renewed. Prior to sugar cultivation, much of the region was occupied by the Naval Air Station (NAS) Pu'unēnē.

DHHL anticipates that regional infrastructure improvements may be beneficial to serve lands managed by State agencies and those agencies' respective proposed developments in the Pūlehunui area. The regional planning effort is being carried out in a manner consistent with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, wherein these parties agreed to "make their best efforts to work in a collaborative manner". The MOU was intended to allow the aforementioned agencies to benefit from economies of scale, joint infrastructure financing, planning and development, and provide significant economic benefits to the Maui community.

The Infrastructure Regional Study Area consists of eight parcels and a total of approximately 1,584 acres that will be managed by the various MOU parties, including DHHL, DLNR, DAGS, and PSD (see Table 2-2 below). Figure 1-2 and Figure 1-3 show the Infrastructure Regional Study Area in the context of the surrounding lands.

Table 2-2: Infrastructure Regional Study Area

Managing Agency	Anticipated Uses	Tax Map Key (TMK)	Acres (Approximate)
DHHL	Pūlehunui North and South (DHHL Project Areas)	(2) 3-8-008-008; (2) 3-8-008-034; (2) 3-8-008-035; (2) 3-8-008-036	830 acres
DLNR	DLNR Industrial and Business Park	(2) 3-8-008-001 (por.)	280 acres
	Anticipated to remain fallow	(2) 3-8-008-038; (2) 3-8-008-001 (por.); (2) 3-8-008-020	429 acres
DAGS and PSD	Maui Regional Public Safety Complex	(2) 3-8-008-037 (por.) (2) 3-8-008-001 (por.)	40-45 acres
		Total:	1,584 acres

2.4 SURROUNDING USES

The following is a summary of land uses surrounding the DHHL Project Areas.

~~**Alexander & Baldwin**~~
Alexander & Baldwin/Mahi Pono
In January 2016, sugar plantation Hawaiian Commercial & Sugar Company (HC&S), owned by A&B, announced that it would transition away from sugar production by the end of 2016. HC&S was the last plantation remaining from Hawai'i's historic sugar industry. ~~A&B's plan at the time of this report~~

~~is to pursue diversified agriculture, biomass energy, food and cattle production.~~ The DHHL Project Areas were harvested in 2016 and A&B terminated its lease of those lands.

In December 2018 A&B sold approximately 41,000 acres of its Central Maui lands to Mahi Pono LLC. Refer to Section 3.3.2 for anticipated uses on Mahi Pono's lands.

A&B ~~owns~~ owned a number of properties in the area surrounding the DHHL Project Areas which are designated as Important Agricultural Lands (IAL). Ownership of much of these lands has now passed to Mahi Pono. Development of IAL lands for non-agricultural uses is much more restricted than that of non-IAL lands. The intent of IAL-designated lands is to remain in agriculture in perpetuity. ~~A&B also owns~~ There are also agricultural lands in the area that currently lie fallow but are not designated as IAL. IAL-designated lands in the surrounding areas are shown in Figure 5-23.

A&B owns the 50-acre Central Maui Baseyard which is leased to tenants and is zoned for light (M-1) and heavy (M-2) industrial use. The Central Maui Baseyard is within a 161-acre Urban Growth Boundary.

Maui Humane Society

The approximately 3.6-acre Maui Humane Society property lies adjacent to Pūlehunui North to the north. The Maui Humane Society is Maui's only open admission shelter that handles all animal management, and also includes education and spay-neuter programs. The property is located between Maui Veterans Highway and Mehameha Loop. Access is via Menton Street, a road segment off of Mehameha Loop. Menton Street does not connect to Maui Veterans Highway, although satellite imagery shows an informal dirt road linking Menton Street to the north Mehameha Loop/ Maui Veterans Highway intersection.

Sandwich Isles Communications

Sandwich Isles Communications, Inc. (SIC) is the sole provider of telecommunication services on DHHL lands. DHHL has issued a license to SIC for the use of one acre at the north end of Pūlehunui North, near the Humane Society. The SIC uses the land for the operation of a transmitting tower that serves DHHL's Upcountry and Kahikinui communities. It is anticipated that SIC would retain its license and use at Pūlehunui North.

DLNR Lands

Like DHHL, the State Department of Land and Natural Resources (DLNR) manages lands formerly utilized by Hawaiian Commercial & Sugar (HC&S) for sugar cane cultivation. In 2016, HC&S ceased sugar cane operations. Refer to Section 3.3.2 for anticipated uses on DLNR lands.

Puʻunēnē Armory

The approximately 30-acre Puʻunēnē Armory serves the Hawaiʻi Army National Guard (HIARNG) as a recruiting and training area, as well as a staging area for emergency response and related training. Flight paths into and out of the Armory (located across Maui Veterans Highway) may pass over the south portion of Pūlehunui North. Incoming aircraft consist primarily of Chinook and Black Hawk helicopters which typically approach the landing pad from the south.

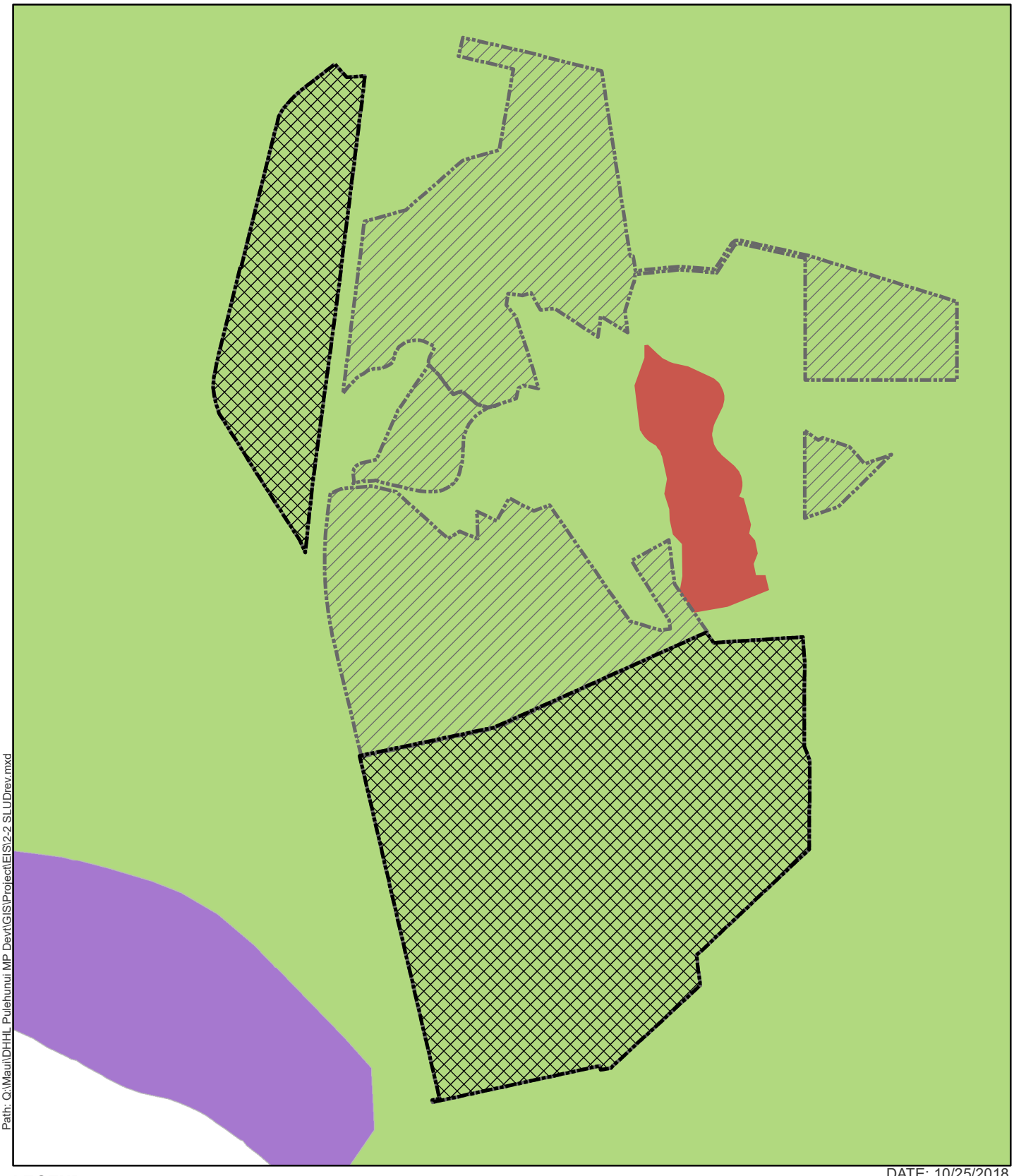
Given the typical aircraft approach angle of 45 degrees, activities at the Armory would create a temporary noise hazard from landing aircraft but should not pose a safety concern. Refer to Sections 5.11.7 and 5.4.

Pulehunui Motorsports Park

The 220-acre Pulehunui Motorsports Park (also known as Maui Raceway Park and Puunene Raceway Park) will remain in recreational use. The park is managed by the Maui County Department of Parks and Recreation (DPR). The park's main attraction is a drag strip for automobile racing, with about ten racing events per year. Races can attract between 100 and 150 competitors (Maui Raceway Park, n.d.). Refer to Section 5.4 regarding potential noise impacts.

Puʻunēnē Heavy Industrial Subdivision

The 86-acre Puʻunēnē Heavy Industrial Subdivision was owned by CMBY 2011 Investment LLC and subsequently subdivided (with lots available for fee-simple purchase), and is zoned for M-3 (Restricted Industrial) use. The purpose of the M-3 district is to accommodate manufacturing and nuisance industries. General retail and office uses are excluded from this district (Chapter 19.25, MCC). The property is in the Urban Land Use District (see Figure 2-2).



PDF - Q:\Maui\DHHL Pulehunui MP Devt\pdf
Path: Q:\Maui\DHHL Pulehunui MP Devt\GIS\Project\EIS\2-2 SLUDrev.mxd

DATE: 10/25/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

State Land Use Districts

- Agriculture
- Conservation
- Rural
- Urban

Figure 2-2:
State Land Use District

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)
0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: County of Maui, 2018. State Land Use Commission, 2016.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

2.5 IDENTIFICATION OF THE PROPOSING AGENCY

The State of Hawai'i, Department of Hawaiian Home Lands is the Proposing Agency.

Contact: ~~Kaleo Manuel, Acting Planning Program Manager~~
Julie Ann Cachola, Planner
Planning Office
State of Hawai'i, Department of Hawaiian Home Lands
P.O. Box 1879, Honolulu, HI 96805
Phone: (808) 620-~~9481~~ 9500 / FAX: (808) 620-9559
Email: ~~kaleo.l.manuel@hawaii.gov~~ julie-ann.cachola@hawaii.gov

2.6 IDENTIFICATION OF ENVIRONMENTAL CONSULTANT

The environmental consultant is PBR HAWAII & Associates, Inc.

Contact: Selena Pang, Planner
PBR HAWAII
1001 Bishop Street, Suite 650
Honolulu, HI 96813
Phone: (808) 521-5631
Email: DHHLPūlehunui@pbrhawaii.com

2.7 IDENTIFICATION OF ACCEPTING AUTHORITY

The Governor of the State of Hawai'i is the Accepting Authority.

Contact: The Honorable David Y. Ige
Governor, State of Hawai'i
Executive Chambers
State Capitol
Honolulu, HI 96813
Phone: (808) 586-0034 / FAX: (808) 586-0006

2.8 COMPLIANCE WITH STATE OF HAWAII ENVIRONMENTAL LAW

This document has been prepared in accordance with the provisions Chapter 343, HRS (Environmental Impact Statement Law) and Title 11, Department of Health, Chapter 200, Hawai'i Administrative Rules (Environmental Impact Rules).

Section 343-5, HRS, establishes nine "triggers" that require compliance with the State's EIS law. The triggers for the Proposed Action include:

- Propose the use of state or county lands or the use of state or county funds.

The Proposed Action is an Agency Action that will be partly funded by Capital Improvement Funds earmarked for infrastructure planning, design, construction, and related site improvements; the use

of State or County lands or funds is an action that "triggers" the preparation of an EA or EIS. As plans for the region advance, the Proposed Action may further involve or impact State and/or County lands or funds relating to infrastructure improvements for public facilities, roadways, water, sewer, electrical utilities, drainage, and/or other facilities. While the precise nature or scale of these future improvements is not fully known at this time, the EIS is intended to address current and future instances involving the use of State and/or County lands and funds relating to the Proposed Action.

The consideration of an onsite wastewater treatment facility to serve the Infrastructure Regional Study Area makes it possible that the Proposed Action may include an additional trigger:

- Propose any wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than 50 single-family dwellings or the equivalent.

This ~~Draft~~ Final EIS was preceded by the Pūlehunui Regional Infrastructure Master Plan Draft EIS and Environmental Impact Statement Preparation Notice (EISPN). Section 343-5 (e), HRS (enacted by Act 172 (2012)) allows a Proposing Agency to prepare an EIS rather than an environmental assessment if the Accepting Authority determines, through its judgment and experience, that an EIS is likely to be required. The preparation of such an EIS begins with the preparation of an EISPN, sometimes referred to as an "Act 172 EISPN."
Under the provisions of §343-5 (b), HRS DHHL has determined, through its judgment and experience, that an Environmental Impact Statement (EIS) is likely to be required for the Pūlehunui Regional Infrastructure Master Plan based on a review of the significance criteria set forth under Section 11-200-12(b), HAR and listed below:

1. Involves in an irrevocable commitment to loss or destruction of any natural or cultural resource;
2. Curtails the range of beneficial uses of the environment;
3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments there to, court decisions, or executive orders;
4. Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;
5. Substantially affects public health;
6. Involves secondary impacts, such as population changes or effects on public facilities;
7. Involves a substantial degradation of environmental quality;
8. Is individually limited but cumulatively has a considerable effect upon the environment or involves a commitment for larger actions;
9. Substantially affects a rare, threatened, or endangered species, or its habitat;
10. Detrimentally affect air or water quality or ambient noise levels;
11. Affects or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters;
12. Substantially affects scenic vistas and view planes identified in county or state plans or studies; and

13. Requires substantial energy consumption.

Based on the above criteria, DHHL did not expect that it could be affirmatively concluded that activities associated with the Proposed Action would not have a significant effect on the environment. In particular, it is anticipated that the Proposed Action may: involve cumulative and/or secondary impacts which may include additional population or effects on public facilities such roads, schools, and recreational facilities which are discussed in Sections 8.2 and 8.3. Studies Contributing to this EIS

See also Table 10-2.

Technical Study	Firm
Agricultural Feasibility Study	Agricon
Cultural Impact Assessment	ʻĀina Archaeology
Historic Preservation Consultation	ʻĀina Archaeology
Preliminary Engineering Report	Austin, Tsutsumi & Associates, Inc.
Traffic Impact Analysis Report	Austin, Tsutsumi & Associates, Inc.
Phase I Environmental Site Assessment	EnviroServices & Training Center, LLC
Economic and Fiscal Impact Assessment	PBR HAWAII & Associates, Inc.
Biological Resources Survey	Robert W. Hobdy
Air Quality Study	Terry A. Hayes Associates
Acoustic Study	Y. Ebisu & Associates

3.0 DESCRIPTION OF THE PROPOSED ACTION

3.1 STATEMENT OF OBJECTIVES

The primary objective of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore, a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable.

An additional, and as important objective is DHHL's role in serving its Beneficiaries, pursuant to the Department's mission.[1] Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing (DHHL) *Maui Island Plan* designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. The land uses preferred by Beneficiaries at Pūlehunui South correspond to DHHL land use designations of Subsistence Agriculture, Community Use, Supplemental Agriculture, and Commercial Use. Following the completion of the EIS process, DHHL will pursue an amendment of its Maui Island Plan to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South. A proposed amendment to the DHHL's *Maui Island Plan*, shown in Figure 3-1, was created to support this preference. See Section 9.0 for more information regarding public engagement and consultation.

3.2 BACKGROUND INFORMATION

3.2.1 *Existing Location and Development*

The DHHL Project Areas are located on both sides of Maui Veterans Highway, near the Puʻunēnē Armory and Maui Humane Society. See Figure 1-1 and Figure 1-2. The total land area of DHHL Project Areas is 830.359 acres. See Figure 1-3, Tax Map Key, for the Infrastructure Regional Study Area in the context of surrounding lands.

3.2.2 *Historical Perspective*

The Proposed Action area is situated in the ahupuaʻa, traditional land district, of Pūlehunui. Pūlehunui encompasses roughly 16,700 acres of land stretching from the rim of Haleakalā crater to the shore of Māʻalaea Bay. Literally translated, pūlehu means to broil while nui has such

[11] It is DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities."

meanings as large, immense, or huge (Pukui & Elbert 1986). Thus, the name Pūlehunui signifies this vast, arid expanse of land.

The historic Puʻunēnē sugar mill and surrounding plantation village are located to the north of the Infrastructure Regional Study Area. Puʻunēnē was originally the name of a puʻu, cinder cone, that was situated to the north of the sugar mill site, overlooking Pāʻia and Spreckelsville. Literally translated, puʻu signifies a volcanic cinder cone, while nēnē is the name of the indigenous Hawaiian goose. Thus, Puʻunēnē is interpreted as "nēnē hill" or "nēnē on the hill", as nēnē once passed over this puʻu when flying between Haleakalā and the Keālia Pond salt flats to the southwest.

The Puʻunēnē sugar mill was established by Henry P. Baldwin who borrowed the Puʻunēnē name. The Puʻunēnē sugar mill began processing cane for the HC&S in 1902, and the community that grew around the sugar mill became known by the Puʻunēnē name. By 1930, over 10,000 people resided in the plantation camps that surrounded the mill, making Puʻunēnē one of the largest towns on the island at that time. With such diverse names as McGerrow, Sam Sing, and Spanish Camp, the plantation camps reflected the multiracial work force of the plantation. Supporting the camp residents were a meat market, hospital, grade school, dairy, general store, and service station. Additional recreational facilities included a swimming pool, bowling alley, tennis courts, ball fields, and club houses (Bartholomew, 1994).

In 1939, a commercial airport was established at Puʻunēnē, and for a brief period of time, this facility served as the island's primary commuter airport. Between 1940 and 1941, the Puunene Airport facility was enlarged and improved to become the Naval Air Station (NAS) ~~Puʻunēnē~~ Puunene.

At its peak in 1945 there were over 300 permanent buildings and structures as well as 137 temporary buildings. NAS Puunene remained intact until mid-1947. All or almost all of the DHHL Project Areas are encompassed by the footprint of the former NAS Puunene and were therefore at one time part of this military base.

After World War II ended, the Federal Government no longer needed the Puʻunēnē NAS and the Territory of Hawaiʻi was eventually granted control of the facility. Commercial airline operations continued at Puʻunēnē until the airport was relocated to Kahului between 1951 and 1952. A few years thereafter, the Puunene Airport was closed to aeronautical activity in 1955 (State of Hawaiʻi DOT Airports Division, 2016).

Over the past few decades, the HC&S plantation camps dissipated as the need for laborers decreased and employees moved out to the growing town of Kahului and other parts of the island. There are almost no physical remnants of the old plantation camps that once bustled with life.

Similar to the plantation camps, there are few visual reminders of the Puʻunēnē NAS and commercial airport as the vast majority of airport facilities were abandoned, torn down, or re-purposed. The Maui Humane Society animal shelter is now situated on the northernmost portion of the old air station. Still standing in the vicinity of the animal shelter are the shells of a storehouse, telephone exchange building, and transformer building (Frey & Fredericksen, 2008). The former airport runways

and surrounding areas are now part of the 220-acre Pulehunui Motorsports Park which is under the management of the County of Maui.

3.2.3 *Existing Facilities and Uses*

The DHHL Project Areas are vacant and were formerly leased to A&B for sugarcane cultivation. When A&B transitioned out of sugarcane in 2016, the lease was not renewed.

There are 23 features (22 structures) in the DHHL Project Areas historically associated with the NAS Puunene, 22. As discussed in Section 3.2.2, NAS Puunene, the first Navy facility on Maui, was created between 1940 and 1945. In 1945, NAS Puunene contained over 300 permanent buildings and structures. The buildings at the DHHL Project Areas are from that time in history and may be significant under State and Federal preservation guidelines. The buildings' locations are shown in Figure 5-1.

3.3 GENERAL DESCRIPTION OF THE ACTION'S TECHNICAL, ECONOMIC, SOCIAL AND ENVIRONMENTAL CHARACTERISTICS

3.3.1 *DHHL's Proposed Land Uses*

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 1. A Draft EIS for the Department of Land & Natural Resources (DLNR) Industrial and Business Park was received by our office in May, 2018 and as you note, they too are proposing commercial and industrial uses on their lands. There is no market study included with the Draft EIS. For the Final EIS, please include a market study that includes demand and occupancy numbers for commercial and industrial space. We note that in Kahului alone, there are numerous empty commercial spaces. We would like to see numbers to gauge the need.
>
> 2. The location is not ideal. Pulehunui is miles away from most population and business centers. Business owners would have to determine whether it makes sense to locate their operation out there when there are many commercial and industrial space vacancies in Central Maui alone. In addition, given the climate conditions of the area, there will be an impact on what types of businesses are located within the area. Some businesses may not want to operate there.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Development of DHHL Lands and Compatibility with DHHL Maui Island Plan

The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands, which means the DHHL Project Areas are not subject to State or County land use controls. Instead, DHHL established a planning system that includes a General Plan, Island Plans, Program Plans, Regional Plans, Special Plans and a number of implementing mechanisms. The Island Plans identify DHHL's land use designations, which are DHHL's equivalent to zoning.

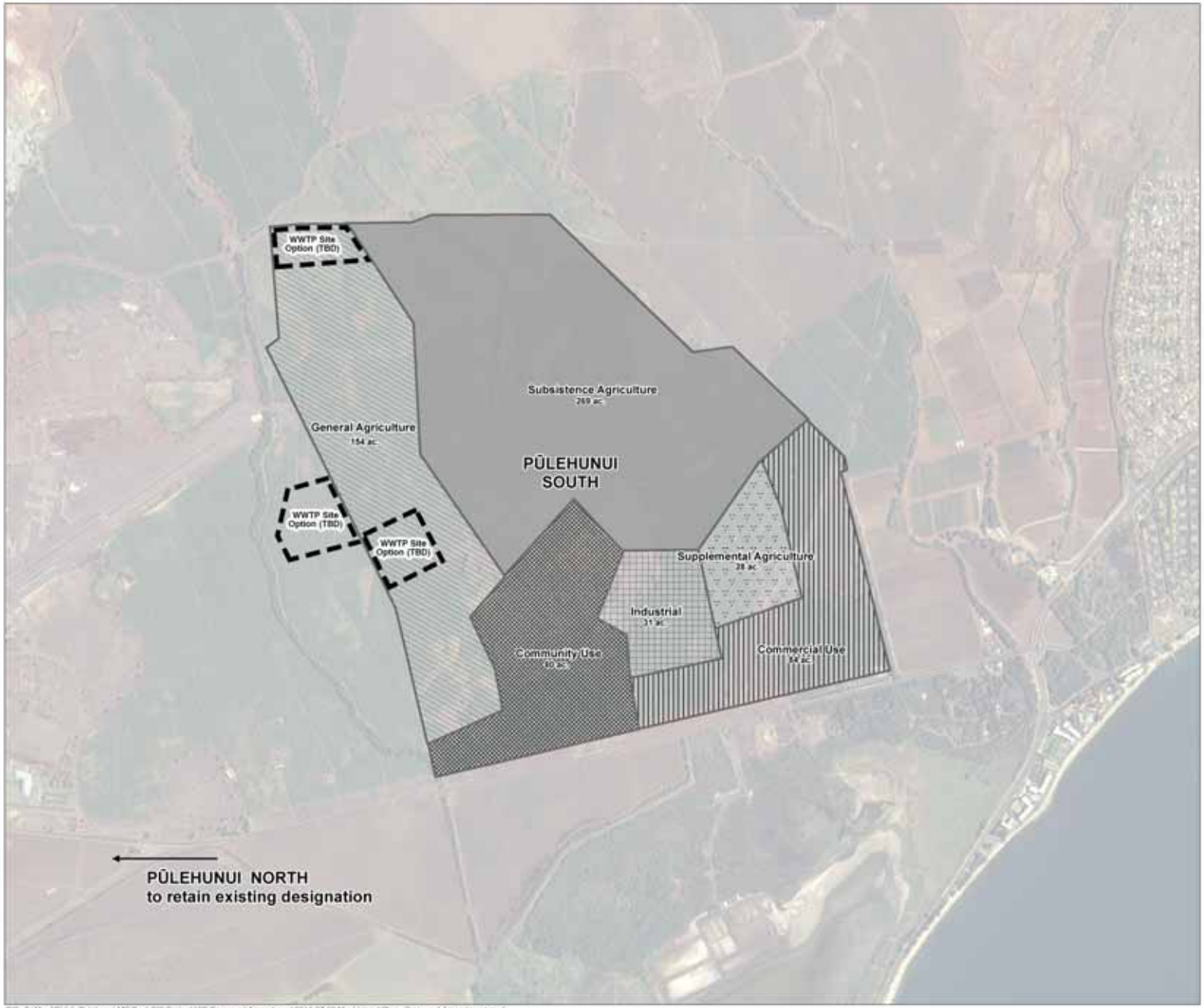
DHHL's Island Plans are island-specific, 20-year visioning documents that designate land uses for DHHL-owned property. In 2004, DHHL adopted the (DHHL) *Maui Island Plan* which examined all DHHL land in terms of development constraints and opportunities and other criteria, to assign appropriate Land Use Designations to each parcel. The *Maui Island Plan* designates Pūlehunui South primarily for General Agriculture use with 100 acres designated for Industrial use. (Department of Hawaiian Home Lands, 2004). At Pūlehunui North, the Maui Island Plan designates Parcel 36 for Industrial use. The adjacent Parcels 8 and 35 were acquired subsequent to the Maui Island Plan, and the Maui Island Plan was amended to designate Commercial and Industrial uses on those parcels.

However, recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing *Maui Island Plan* designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. The land uses preferred by Beneficiaries at Pūlehunui South correspond to DHHL land use designations of Subsistence Agriculture, Community Use, Supplemental Agriculture, and Commercial Use. Following the completion of the EIS process, DHHL will pursue an amendment of its Maui Island Plan to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South. A proposed amendment to the DHHL's *Maui Island Plan*, shown in Figure 3-1, was created to support this preference. See Section 9.0 for more information regarding public engagement and consultation.

Land use programs in the DHHL Project Areas will inform the regional infrastructure analysis which will also incorporate by reference other project information provided by DLNR and DAGS/PSD, for their respective proposed developments. DHHL land use programs are anticipated to involve commercial, light industrial, diversified agricultural, and subsistence agricultural use including agricultural homesteads for DHHL Beneficiaries. A portion of Pūlehunui South may accommodate supporting regional infrastructure, pending consultation and appropriate technical studies. A more detailed description of the anticipated land uses is provided below. See Figure 3-2 and Figure 3-3 for a conceptual development plan for the DHHL Project Areas.

Commercial/Industrial Uses

Commercial/light industrial use is anticipated to occupy up to 135 acres at Pūlehunui North (including 40 acres for a possible cultural center/visitor attraction), plus five acres for a possible hotel (at the discretion of a future developer), and approximately 115 acres at Pūlehunui South. Commercial/industrial use provides for the most flexible use of the DHHL Project Areas and could support retail, agribusiness processing, packaging, and/or marketing of agricultural goods produced at Pūlehunui South and throughout Central Maui. Light industrial-zoned lots on other Maui properties accommodate retail uses. Large, contiguous commercial lots within Pūlehunui North would be suitable for a more comprehensive commercial or retail complex and/or a visitor attraction destination, cultural center, business hotel or other large visitor industry-based use.



Proposed Land Use Designations

	General Agriculture	(154 ac.)
	Supplemental Agriculture	(28 ac.)
	Subsistence Agriculture	(269 ac.)
	Community Use	(80 ac.)
	Commercial Use	(84 ac.)
	Industrial	(31 ac.)
	Total:	**646 ac.**

Figure 3-1
Proposed DHHL Maui Island Plan Amendment

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

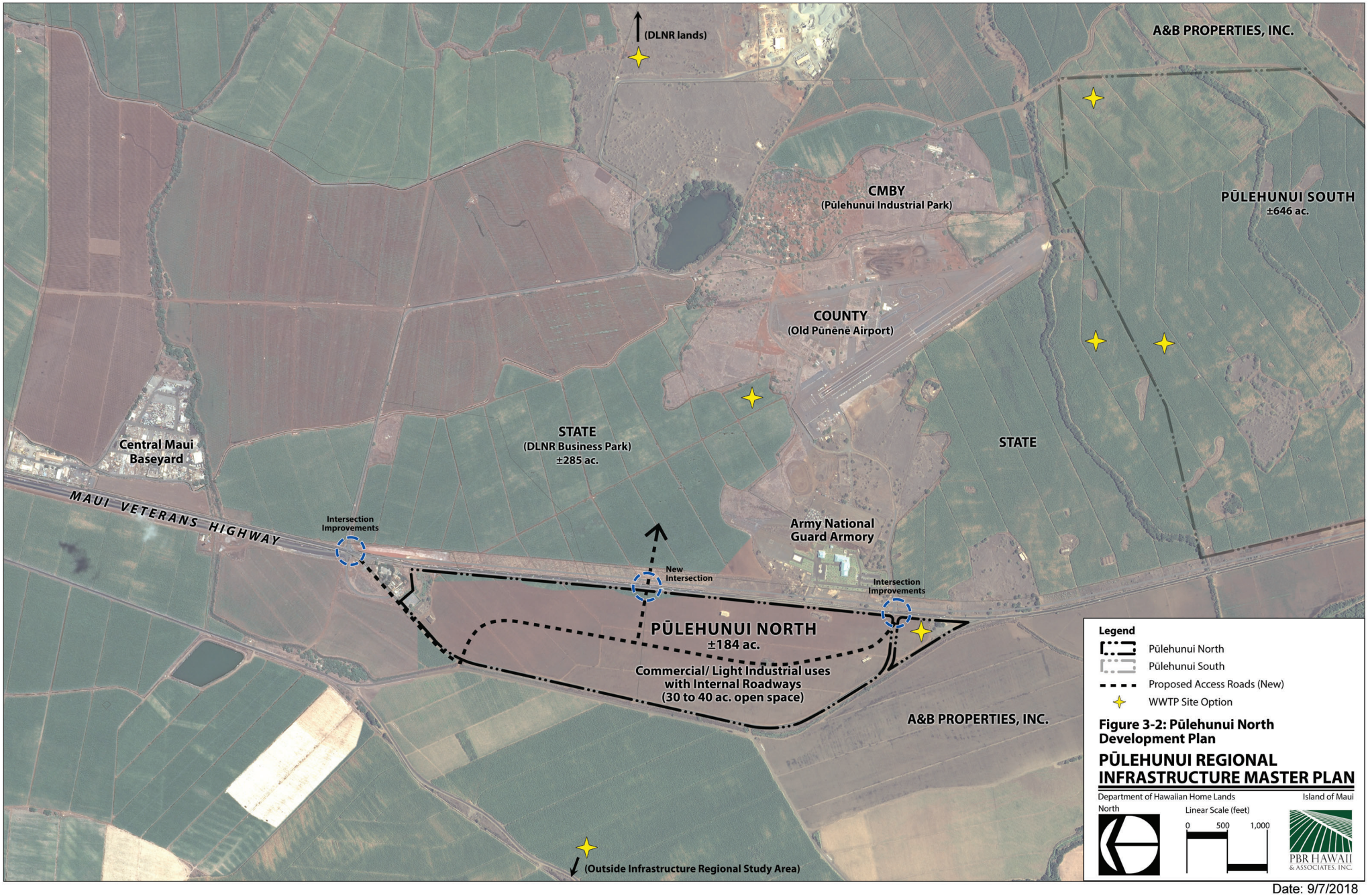
Linear Scale (feet)

0 500 1000

PBR HAWAII & ASSOCIATES, INC.

Date: 7/16/2018

GIS: Q:\Maui\DHHL Pulehunui MP Devt\GIS\Project\MP Proposed Amendment\2018-07-03 Maui Island Plan - Proposed Amendment.mxd
PSD: Q:\Maui\DHHL Pulehunui MP Devt\PSD\MP Proposed Amendment\2018-07-03 Maui Island Plan - Proposed Amendment.psd


(DLNR lands)
A&B PROPERTIES, INC.
CMBY
(Pūlehunui Industrial Park)
PŪLEHUNUI SOUTH
±646 ac.
COUNTY
(Old Pūnēnē Airport)
STATE
(DLNR Business Park)
±285 ac.
STATE
Central Maui
Baseyard
MAUI VETERANS HIGHWAY
Intersection
Improvements
Army National
Guard Armory
New
Intersection
Intersection
Improvements
PŪLEHUNUI NORTH
±184 ac.
Commercial/ Light Industrial uses
with Internal Roadways
(30 to 40 ac. open space)
A&B PROPERTIES, INC.
(Outside Infrastructure Regional Study Area)
Legend
Pūlehunui North
Pūlehunui South
Proposed Access Roads (New)
WWTP Site Option
Figure 3-2: Pūlehunui North
Development Plan
PŪLEHUNUI REGIONAL
INFRASTRUCTURE MASTER PLAN
Department of Hawaiian Home Lands
Island of Maui
North
Linear Scale (feet)
0
500
1,000
PBR HAWAII
& ASSOCIATES, INC.

Date: 9/7/2018

Source: USDA NRCS Aerial Basemap, 2016. National Flood Hazard Layer, Federal Emergency Management Agency, 2017. County of Maui, 2018.

Revised 7/3/2018

LEGEND

- Pūlehunui South
- Maui Veterans Highway
- Intersection (Potential)
- Internal Access Roads (Assumed Primary)
- Future Kīhei Bypass (Concept)
- Future Keālia Pond Bypass (Concept)
- Mauka Connector Road (Concept)
- Prevailing Wind Direction
- Drainage Gulch
- Rocky Area / Not Recently Farmed
- Field Roads
- Man Made Objects
- Elevation Contours (5-ft intervals)

Flood Zones

- XS - 0.2% Annual Chance Flood
- A - 1% Annual Chance Flood
- AE - 1% Annual Chance Flood (BFE)
- AO - Flood Depths of 1-3'
- VE- Coastal Flood Zone, Wave Hazard (BFE)

Proposed Land Uses

Farms	(±146 ac.)
Ag Support	(±24 ac.)
Subsistence Ag/Homesteads (2+ acre lots, approx. 80-100 lots)	(±238 ac.)
Beneficiary Gardens	(±27 ac.)
Commercial Enterprises	(±70 ac.)
Farmers Market	(±11 ac.)
Culture & Arts	(±18 ac.)
Education	(±33 ac.)
Roads	(±31 ac.)
Open Space/Existing Gulch	(±48 ac.)
Total Land Area	**646 ac.**

* WWTP Site Option (Other wastewater alternatives being evaluated.)

Figure 3-3: Pūlehunui South Conceptual Plan

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands

Island of Maui

North

Linear Scale (feet)

0 500 1000

PBR HAWAII & ASSOCIATES, INC.

In addition to revenue generation to support DHHL activities, DHHL proposes to provide commercial/light industrial use areas in Pūlehunui South devoted to use by smaller businesses including those of DHHL Beneficiaries, to support Beneficiary economic development initiatives. Activities in this area will build capacity in the small business community by providing a space for individual businesses or Beneficiary individuals or organizations to produce and sell products and services in a highly-visible and central location off Maui Veterans Highway.

Open Space and Agricultural Uses
Between roughly 30 and 40 acres of open space have been assumed in the development plan to meet drainage needs at Pūlehunui North. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility.

3.3.2 *Surrounding Proposed Land Uses*

DLNR Industrial and Business Park
The DLNR proposes light industrial/commercial and public/quasi-public uses at DLNR Industrial and Business Park, including the provision of required infrastructure systems. Key components of the plan include development of small, medium, and large lots for light industrial, commercial, government, and nonprofit uses to meet varying needs of future lessees. Lots within the DLNR Industrial and Business Park will be leased to tenants to generate revenue to support DLNR's programs.

DLNR Industrial and Business Park covers an area of approximately 280 acres (139 acres light industrial, 68 acres commercial, not including roads and open space). At a conceptual level, the site plan encompasses an approximate 20-acre site for the proposed Division of Forestry and Wildlife (DOFAW) administrative facilities and baseyard in the northeastern portion of the DLNR Industrial and Business Park plan area. The 20-acre site would allow DOFAW to relocate its operations from its existing 3.0-acre baseyard facility in Kahului, which has limited potential for expansion. Small lots of less than 1.0 acre front Kamaʻāina Road and the interior roadway from Kamaʻāina Road. Mid-sized lots between one acre and less than three acres and larger lots between three to five acres are proposed within the interior portions of the plan area. Although the conceptual plan proposes an interior subdivision of the lands, the plan would also allow larger or smaller lots to be provided to potential lessees in order to meet their specific land requirements. This conceptual layout will provide DLNR some flexibility to meet the lot size requirements specified by future lessees. Additional detail on the proposed land use plan, including a breakdown of anticipated uses, a landscape plan, and design guidelines was presented in the DLNR Industrial and Business Park ~~Draft~~ Final Environmental Impact Statement (DEIS) (Munekiyo Hiraga, ~~2018~~ 2019).

To date, the following documents have been published regarding the Infrastructure Regional Study Area and are herein incorporated by reference:

- Maui Regional Public Safety Complex Environmental Impact Statement Preparation Notice (EISPN)
- DLNR Industrial and Business Park Draft Environmental Impact Statement (~~DEIS~~ FEIS)

In addition, staff correspondence with the Department of Public Safety (Appendix L) has confirmed certain information about the PMP.

After the publication of this document, should information regarding the Infrastructure Regional Study Area become available which is substantially different from that contained in this EIS and the abovementioned documents, the new information may be considered to supersede the information contained here, and may necessitate a reexamination of environmental impacts related to the Pūlehunui Infrastructure Regional Master Plan.

Division of Forestry and Wildlife Baseyard

As part of the DLNR Industrial and Business Park, the DLNR DOFAW is developing a 20-acre portion of land for use as a baseyard. Similar to the rest of the DLNR Industrial and Business Park, the baseyard will be used to generate long-term revenue. The Final Environmental Assessment for the DOFAW baseyard was published in November 2016 and the project was included in the EIS for the DLNR Industrial and Business Park.

Maui Regional Public Safety Complex

The Maui Regional Public Safety Complex (MRPSC) is proposed to be located on 40-45 acres mauka of the Army HIARNG Puʻunēnē Armory facility (Wilson Okamoto Corporation, 2010). It is noted that while the DLNR had contemplated an alternative site for the proposed MRPSC within the 280-acre DLNR Industrial and Business Park in the past, the Department of Accounting and General Services (DAGS) and the Department of Public Safety (PSD) have not expressed interest in the alternative site. While DAGS and PSD are the lead agencies with respect to the proposed MRPSC, DHHL will continue to coordinate with all State agencies proposing developments within the Pūlehunui region. Refer to Appendix K and Appendix L. By letter dated November 2, 2018 from Wilson Okamoto Corporation, authorized DAGS agent, to the Department of Planning, applications for a State Special Use Permit and County Conditional Permit (filed in 2012) were withdrawn. It was noted that should the project be pursued in the future, a new permit application would be submitted (Munekiyo Hiraga, 2019). DHHL notes that the EISPN has not been withdrawn as of the date of this EIS.

In addition, during the EISPN Public Review period, DAGS wrote: “The proposed project does not impact any of the Department of Accounting and General Services' existing facilities. We will continue to coordinate our activities with the Department of Public Safety and the Department of Hawaiian Homelands (sic) in developing the Maui Regional Public Safety Complex.”

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 7. The proposed Industrial and Business Park is to abut the proposed Maui Regional Public Safety Complex, which is the site of the new prison, and is shown in some of your figures. For the Final EIS, please include a disclaimer that the County of Maui objects to the correctional facility location. Please also note that it is 'proposed,' as its development status is unknown.

Refer to Appendix B-2 for a copy of the comment and DHHL’s response.

The details of the anticipated MRPSC (including its location) are outside the purview of DHHL and are not part of the Proposed Action under this EIS. This EIS incorporates by reference project information provided by DLNR and DAGS/PSD, for their respective proposed developments.

The assumed location of the MRPSC shown in this EIS is consistent with the site identified in the MRPSC EISPN. DAGS and PSD are the lead agencies with respect to the proposed MRPSC; DHHL will continue to coordinate with all State agencies proposing developments within the Pūlehunui region.

Pulehunui Motorsports Park

The County of Maui obtained management and control of 222 acres of State-owned land containing the former Pu'unēnē airport runway through an Executive Order (E.O. No. 4024, dated 2003). The land is used for recreational purposes, such as the Pulehunui Motorsports Park and motor bike racing, and is located inland to the east of Maui Veterans Highway in proximity to the Infrastructure Regional Study Area.

During the EISPN consultation period, the County of Maui Department of Parks and Recreation reported that it is a finalizing a master plan for the ~~Pūlehunui~~ Pulehunui Motorsports Park:

> The motorsports park accommodates a variety of facilities and groups that hold events throughout the year with some attracting large numbers of people. The master plan projects a continuation of these uses along with the potential addition of another facility.
>
> Despite the long-term use of the site, both historically and into the future, the motorsports park lacks an adequate infrastructure system. The site has no infrastructure for potable water, wastewater, electricity, storm water management, communication, or other basic services.

~~**Alexander & Baldwin Transition to Diversified Agriculture**~~

Mahi Pono Acquisition of Former Alexander & Baldwin Lands

In January 2016, sugar plantation Hawaiian Commercial & Sugar Company (HC&S), owned by A&B, announced that it would transition away from sugar production by the end of 2016. HC&S was the last plantation remaining from Hawai'i's historic sugar industry. ~~A&B's plan at the time of this report is to pursue diversified agriculture, biomass energy, food and cattle production.~~

In December 2018 A&B sold approximately 41,000 acres of its Central Maui lands to Mahi Pono LLC. Mahi Pono intends to offer community farming opportunities along with access to agricultural support services. Land uses on Mahi Pono's newly acquired lands are in the planning stages; Mahi Pono is considering production and processing of various food crops and potentially livestock. A&B has sold 50 percent of its interest in East Maui Irrigation Company, LLC to Mahi Pono, and will sell the remaining 50 percent in the future.

A&B ~~owns~~ owned a number of properties in the area surrounding the DHHL Project Areas which are designated as Important Agricultural Lands (IAL). Ownership of much of these lands has now passed to Mahi Pono. Development of IAL lands for non-agricultural uses is much more restricted than that

of non-IAL lands. The intent of IAL-designated lands is to remain in agriculture in perpetuity. IAL-designated lands in the surrounding area are shown in Figure 5-23. The DHHL Project Areas were harvested in 2016 and were not re-planted.

3.3.3 *Possible Regional Infrastructure Improvements*

The infrastructure improvements following a regional approach would service the following areas:

- DHHL Pūlehunui North – 184 acres
- DHHL Pūlehunui South – 646 acres
- DLNR Industrial and Business Park – 280 acres
- Maui Regional Public Safety Complex (MRPSC) – 40-45 acres
- Pulehunui Motorsports Park (PMP) – 222 acres

Water

The preferred regional water system alternative may be Alternative 1, which is to have DWS supply water for the Infrastructure Regional Study Area. However DHHL is still evaluating the range of water alternatives described above. A major advantage of Alternative 1 would be that DWS owns and operates their water system and therefore State users of the system would not need to construct or operate a water treatment facility. With Alternatives 2 and 3, a private company would need to be hired to operate the on-site treatment facilities. An additional advantage to Alternative 1 is that the Proposed Action would be serviced by a large water system which can more easily accommodate disruptions in the system, e.g., a power failure at a well or a treatment facility. From a cost standpoint, Alternative 1 may be favorable pending further research. Despite these advantages, Alternative 1 is also the alternative with the greatest uncertainty with respect to implementation timeframes as it relates to offsite storage tank and new source development requirements. DHHL will coordinate with the County of Maui Department of Water Supply (DWS) before identifying a preferred water alternative. DHHL expects that a regional approach to water infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination.

~~**Wastewater**~~

~~The preferred wastewater system alternative is currently Alternative 4, which is to connect to and coordinate on the County's newly proposed Central Maui WWRF. The primary advantage of Alternative 4 is that the MOU parties will not have to operate and maintain a wastewater treatment facility. Further, wastewater Alternative 4 has the advantage of being serviced by a large water system which can more easily accommodate disruptions in the system (similar to water Alternative 1). WWRD would be operating and maintaining this wastewater treatment facility and has expressed agreement with the State connecting to this facility. The use of R-1 water quality effluent for irrigation within the Infrastructure Regional Study Area is not considered to be feasible under Alternative 4, due to the considerable distance across which R-1 water would have to be transmitted from the WWTF. The expectation is that any R-1 effluent produced by the WWTF would be used for irrigation during most of the year, thereby reducing the demand for irrigation water.~~

Wastewater

Based on subsequent consultation with agency stakeholders and continuing technical studies, the preferred alternative is currently Alternative 2A-1 which represents a refinement of wastewater Alternatives 2A and 2C. Unlike the previously preferred wastewater Alternative 4, Alternative 2A-1 does not have the advantage of being serviced by a larger system and will require the State to operate and maintain the treatment facility. However Alternative 2A-1 has several advantages. First, it will be designed to accommodate substantial interim regional demand and is appropriately sized for temporary use. Construction of Alternative 2A-1 could be completed well in advance of regional demand with a target date of 2023 if construction commences in fall 2020. Second, it will be designed to maximize use of currently available funding. Third, the use of R-1 water for irrigation is possible under the current preferred design. The expectation is that any R-1 effluent produced by the WWRF would be used for irrigation during most of the year, thereby reducing the demand for irrigation water. To keep up with wastewater demand the Alternative 2A-1 treatment facility may be expanded, relocated, and/or repurposed in the future, at which point impacts would be more similar to those under Alternative 2A, 2C, or 4. This EIS therefore addresses the impacts of a range of future improvements with respect to Alternative 2A-1. Refer to Appendix C Addendum 1.

DHHL expects that a regional approach to wastewater infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination.

Roadways

Currently, Maui Veterans Highway in the vicinity of the DHHL Project Areas has two dedicated travel lanes in both directions (northbound and south bound) regardless of the intersection. Various widening improvements are proposed at the Maui Veterans Highway/Mehameha Loop (North)/Kamaʻāina Road intersection as part of the development of the Puunene Heavy Industrial Subdivision. The State of Hawaii Department of Transportation's (~~HDOT~~ DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) dated July 2014 (hereinafter referred to as "HDOT 2035 Transportation Plan") estimated that by the year 2035, traffic volumes on Maui Veterans Highway will increase by over 80 percent due to nearby population and land development growth in the area. To increase highway capacity and accommodate this traffic growth, the ~~HDOT~~ DOT 2035 Transportation Plan conceptually identified the widening of Maui Veterans Highway to construct two additional travel lanes on Maui Veterans Highway from Kuihelani Highway in Kahului to Piʻilani Highway in Kīhei as a potential need by Year 2035. It should be noted that this Maui Veterans Highway Widening improvement is currently not a DOT-funded or ~~approved project.~~ programmed project. ~~and is only an identified roadway capacity solution for long-range planning purposes.~~ Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038.

Due to the uncertainty of when the additional travel lanes may be constructed, DHHL and DLNR will coordinate the Proposed Action with the Statewide Transportation Improvement Program (STIP) and with the DOT to address the need for additional regional capacity for the Maui Veterans Highway. DHHL will also coordinate with DLNR regarding the proposed new intersection on Maui Veterans

Highway that will provide access to both agencies' lands to ensure the proposed access roads to each property align and are acceptable to DOT.

3.4 USE OF PUBLIC FUNDS OR LANDS FOR THE ACTION

3.4.1 *Use of Public Funds*

The regional planning effort is being carried out in a manner consistent with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, wherein these parties agreed to "make their best efforts to work in a collaborative manner". The MOU was intended to allow the aforementioned agencies to benefit from economies of scale, joint infrastructure financing, planning and development, and provide significant economic benefits to the Maui community. In 2014, $4M of Capital Improvement Funds were awarded to DHHL for infrastructure planning and design pursuant to the MOU (Act 122, Session Laws of Hawai'i 2014).

To date, the wastewater improvements portion of the Proposed Action has been appropriated 17.5 million dollars. DHHL and/or other State agencies will consider potential sources of further funding to support the design and construction of other regional infrastructure components, informed by the consultation described in this EIS and continued agency coordination.

3.4.2 *Use of Public Lands*

The DHHL portion of the Proposed Action will involve the following public lands: TMK (2) 3-8-008-008, 034, 035, and 036. The total area of public lands that will be utilized is 830.359 acres. See Figure 1-3, Tax Map Key, for the Infrastructure Regional Study Area in the context of surrounding lands. It is possible that in addition to the parcels identified below, land from the Maui Veterans Highway will be utilized to mitigate traffic impacts as a result of the proposed State developments in Pūlehunui.

In addition, it is possible that the Proposed Action may affect certain water transmission or wastewater collection lines located within or crossing State and/or County road rights-of-way.

Area Referred to as:	Tax Map Key (TMK)	Acres
Pūlehunui North	(2) 3-8-008-008	6.926 acres
Pūlehunui South	(2) 3-8-008-034	646.000 acres
Pūlehunui North	(2) 3-8-008-035	97.433 acres
Pūlehunui North	(2) 3-8-008-036	80.000 acres
	Total:	830.359 acres

The Pūlehunui Infrastructure Regional Master Plan incorporates by reference other project information provided by DLNR, and DAGS/PSD for their respective proposed developments in the region. See Section 3.3.2

3.5 PHASING AND TIMING OF ACTION

Project	2020-2028	2029-2038
Regional Infrastructure	Construction Start	Buildout by 2038
Pūlehunui North	Construction Start, possible leasing	Buildout by 2035
Pūlehunui South	Construction Start, possible leasing	Buildout by 2035
DLNR Industrial and Business Park	Infrastructure construction 2022-25 (if proceeding independently); first lease 2024	Fully leased 2033; buildout 2038
PSD – Maui Regional Public Safety Complex (Phase 1)	For purposes of regional infrastructure planning, full buildout anticipated by 2023 (see Appendix L)	

4.0 DESCRIPTION OF THE AFFECTED NATURAL ENVIRONMENT, POTENTIAL IMPACTS OF THE PROPOSED ACTION, AND MITIGATION MEASURES

This section describes existing conditions of the physical or natural environment, preliminary potential impacts of the DHHL Project areas, and preliminary mitigation measures to minimize any impacts.

The Pūlehunui Regional Infrastructure Master Plan incorporates by reference other project information provided by DLNR, and DAGS/PSD for their respective proposed developments in the region. See Section 3.3.2.

4.1 CLIMATE

Like most areas of Hawai'i, Maui's climate is relatively uniform year-round. Maui is characterized by a semi-tropical climate containing a multitude of individual microclimates. Pūlehunui experiences mild and uniform temperatures, moderate humidity, and a relatively consistent trade wind. Temperatures (based on readings taken at Kahului Airport) range from an average daily low of 67.3 degrees Fahrenheit to an average daily high of 83.8 degrees. The warmest month is September while February is the coolest month. A high proportion of the rainfall that Maui receives each year falls on the northeast facing shores, leaving the central isthmus and southern coastal areas relatively dry. The annual average rainfall in the vicinity of the Infrastructure Regional Study Area (based on readings taken at Kahului Airport) amounts to approximately 11 to 13 inches. In the Kahului region, January is historically the wettest month, while June is the driest. On average, there are 95 days per year with more than 0.01 inch of rain in Kahului (County of Maui, Office of Economic Development, 2015).

The State, through Act 234 and SB 559, has acknowledged that GHG emissions are a statewide impact. Emissions generated by the Proposed Action in combination with past, present, and reasonably probable future related projects could contribute to this impact. Although climate change is cumulative in nature, not every individual action that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. DHHL will consider ways to incorporate state-of-the-art energy conservation and green practices in the development of the DHHL Project Areas. In addition, the Proposed Action would not interfere with the development of clean energy supplies.

Potential Impacts and Mitigation Measures

The Proposed Action is not expected to have a significant effect on climatic conditions and no mitigation measures are proposed.

From an environmental standpoint, replacement of vegetative surfaces with hardscapes associated with roadways, paved parking areas, and buildings may yield a tendency towards slightly increasing ambient air temperatures. To address this "heat island" effect, proposed landscaping and

landscaped buffers will be integrated into the non-agricultural components of proposed improvements in Pūlehunui North and Pūlehunui South. The landscape design and planting plan will provide shade to reduce the "heat island" effect. However, no significant impacts are expected regarding the "heat island" effect as roughly 30 and 40 acres of open space have been assumed in the development plan to meet drainage needs at Pūlehunui North. The majority of Pūlehunui South will be used for agriculture.

4.2 GEOLOGY AND TOPOGRAPHY

The island of Maui was built by two major volcanoes, the older West Maui Mountain, also known as Mauna Kahalawai, and the more recently active Haleakalā. The isthmus of Maui is a narrow, gently sloping plain located between these two volcanoes. The isthmus was created by lava flows from Haleakalā banking against the older flank of Mauna Kahalawai. Stratigraphy in the isthmus is complicated due to alternating erosional and depositional forces in its geologic history. Much of the eastern and western sides of the isthmus consist of stream sediments (alluvium) washed down from the slopes of the two volcanoes. Erosion on these slopes is dominated by the detachment of soil and rock from the mountain walls, whereupon sediments are transported downslope toward the isthmus.

The development of broad fringing reefs in the bay between Mauna Kahalawai and Haleakalā add further complexity to the stratigraphy of the isthmus, in addition to sea level changes during the Pleistocene Epoch in response to the advance and retreat of continental glaciers. During glacial advances, more of Earth's water was trapped in glaciers as ice, leaving less water available to fill the ocean basins. As a consequence, global sea levels fell. During glacial retreats, more water was available and sea levels rose.

The DHHL Project Areas are located in the eastern area of the isthmus of Maui. Pūlehunui North generally slopes downward in a southerly direction with an average slope of approximately one to two percent. Elevations in Pūlehunui North range from 26 feet to 90 feet above mean sea level (AMSL). Pūlehunui South has more rolling terrain and three main gulch features, one of which is designated as a non-perennial stream. Pūlehunui South has an average slope of approximately two percent towards Maui Veterans Highway. Elevations in Pūlehunui South range from 15 to 145 feet above mean sea level (AMSL).

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the U.S. Geological Survey wrote: "Due to prior commitments and lack of available staff, we are unable to review this document." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Grading work will be undertaken to set roadway grades and adjacent grades where appropriate. Future design work will respect existing topography to the extent practicable, to minimize extensive cut and fill activity. Significant landform transformations in terms of cut and fill requirements are not anticipated. All grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the Maui County Code (MCC).

The Proposed Action will require construction of new infrastructure, roadways, building pad areas, and drainage features. There will be no increase in runoff from the proposed development of either Pūlehunui North or Pūlehunui South towards Keālia Pond. Rather, the proposed drainage plan for the DHHL Project Areas is anticipated to positively impact current runoff conditions; in implementing the proposed design for Pūlehunui South, the total onsite runoff from that property will be reduced by 96 percent compared to existing conditions . Section 5.8.4 discusses existing and proposed drainage conditions. Furthermore, Low-impact Development (LID) strategies will be considered at the DHHL Project Areas, which would further mitigate potential impacts.

While the Proposed Action will alter how the land is currently used, the proposed improvements are not expected to significantly impact the overall geological character of the region. Construction activities, such as grading, may alter the topography of Pūlehunui North and Pūlehunui South to accommodate the Proposed Action and address potential flooding concerns. See Section 4.4.1. Appropriate engineering, design and construction measures will be implemented to minimize potential erosion due to grading of soils during construction. All grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the Maui County Code (MCC). Further information on soils and grading is provided in Section 4.3. A discussion of possible interagency coordination on grading efforts is provided in Section 5.8.4.

4.3 SOILS

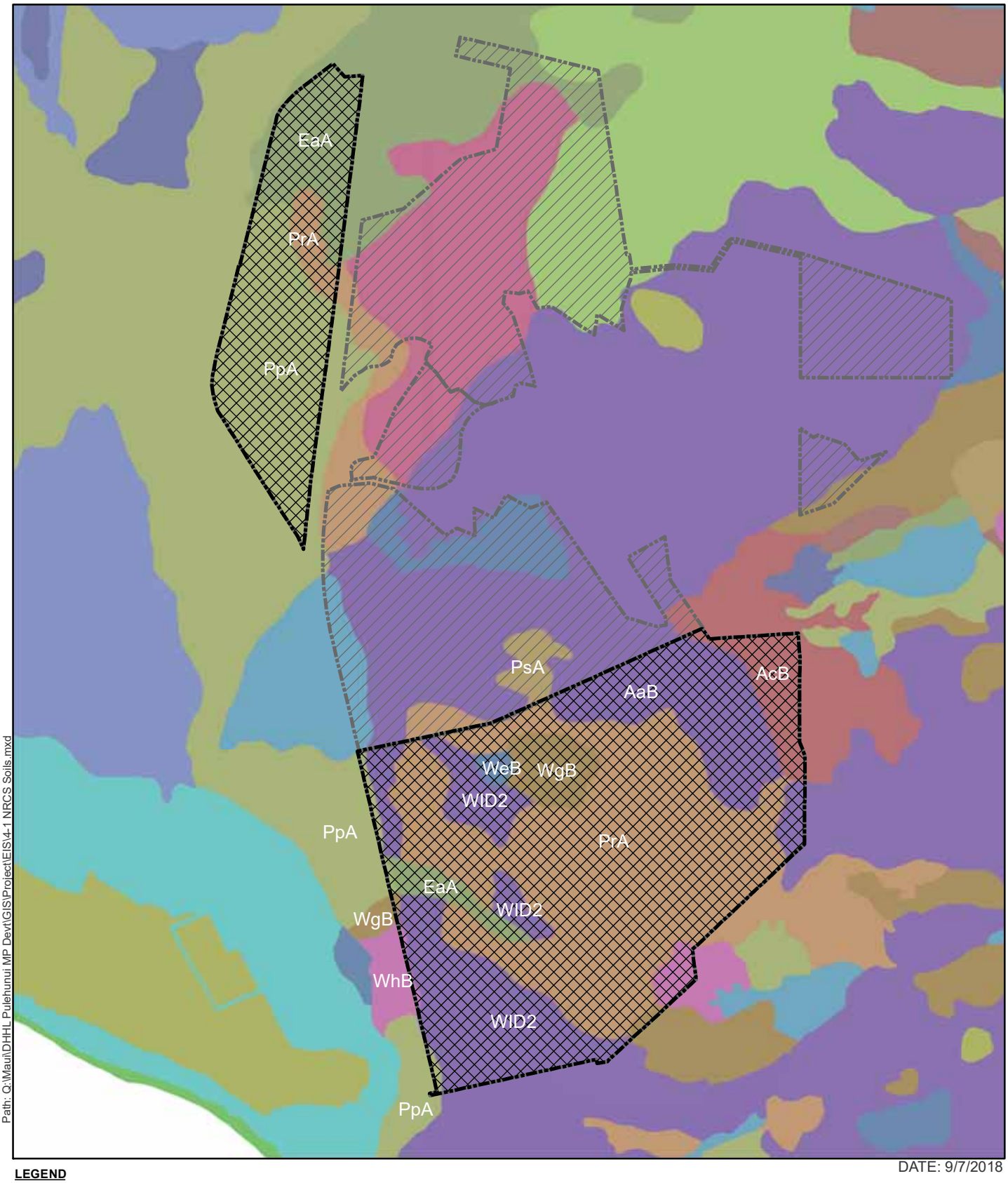
Three primary soil suitability studies describe the physical attributes of land and their relative productivity for agricultural production in Hawai‘i. These include the U.S. Department of Agriculture, Natural Resource Conservation Service’s Soil Survey, the University of Hawai‘i, Land Study Bureau’s Detailed Land Classification and the State Department of Agriculture’s Agricultural Lands of Importance to the State of Hawai‘i system.

4.3.1 *Natural Resources Conservation Service Soil Survey*

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey, the soils underlying the DHHL Project Areas mainly consist of the well-drained Pūlehu, Waiakoa, and Alae soils (see Figure 4-1). Pūlehu and Alae soil series usually occur near natural drainageways and intermittent streams, while Waiakoa soils are more specific to the uplands of Maui.

Pūlehunui North
Most of the soils underlying the boundaries of Pūlehunui North are Pūlehu soils, which are classified as well drained soils with slow to medium run off. Pūlehu soils are often found on alluvial fans, stream terraces and in basins. Soils underlying Pūlehunui North include:

- Pūlehu silt loam (PpA), 0 to 3 percent slopes; well drained, low run off
- Pūlehu cobbly silt loam (PrA), 0 to 3 percent slopes; well drained, low run off
- ‘Ewa silty clay loam (EaA), 0 to 3 percent slopes; well drained, low run off



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DATE: 9/7/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

Soil Type			
AaB	EcB	PsA	
AcA	JaC	W	
AcB	KMW	WID2	
BS	PpA	WeB	
EaA	PpB	WfB	
EcA	PrA	WgB	
	PrB	WhB	

Figure 4-1:
NRCS Soil Classifications

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

Source: County of Maui, 2018. Soils: State OP from SSURGO, 1972 published by NRCS, 2007.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Pūlehunui South

The soils underlying the boundaries of Pūlehunui South mostly consist of Pūlehu soils (discussed above) along with Waiakoa and Alae soils. Waiakoa soils are moderately deep, well drained soils, with medium run off and are usually found on uplands. Alae soils are deep, excessively drained soils with rapid permeability and slow run off. Waiakoa and Alae soils are primarily found on the island of Maui. Soils underlying Pūlehunui South include:

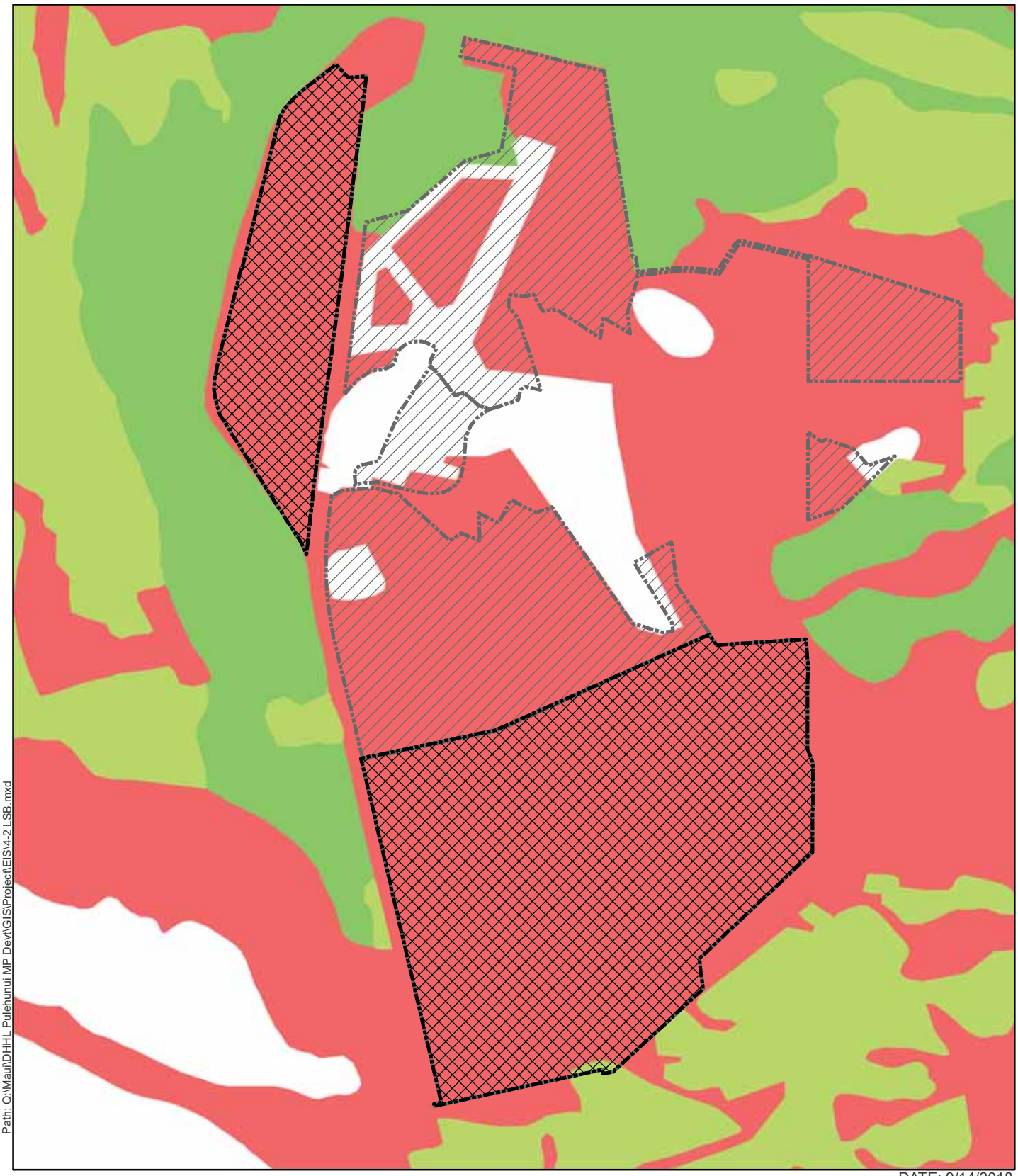
- Alae sandy loam (AaB), 3 to 7 percent slopes; excessively drained, low run off
- Alae cobbly sandy loam (AcB), 3 to 7 percent slopes; excessively drained, low run off
- ʻEwa silty clay loam (EaA), 0 to 3 percent slopes; well drained, low run off
- Pūlehu silt loam (PpA), 0 to 3 percent slopes; well drained, low run off
- Pūlehu cobbly silt loam (PrA), 0 to 3 percent slopes; well drained, low run off
- Waiakoa silty clay loam (WeB), 3 to 7 percent slopes; well drained, medium run off
- Waiakoa very stony silty clay loam (WgB), 3 to 7 percent slopes; well drained, medium run off
- Waiakoa extremely stony silty clay loam (WhB), 3 to 7 percent slopes; well drained, medium run off
- Waiakoa extremely stony silty clay loam (WID2), 3 to 25 percent slopes, eroded; well drained, high run off

4.3.2 *Land Study Bureau Detailed Land Classification*

The University of Hawaiʻi, Land Study Bureau (“LSB”) developed the Overall Productivity Rating, which classified soils according to five levels, with “A” representing the class of highest productivity soils and “E” representing the lowest. These letters are followed by numbers which further classify the soil types by conveying such information as texture, drainage and stoniness. Nearly all of Pūlehunui North and Pūlehunui South are located on lands designated “E” or very poor by the LSB (see Figure 4-2). These lands have the lowest productivity rating under the LSB classification system. Machine tillability is very poorly suited, thus grazing is the typical use for this type of soil.

4.3.3 *Agricultural Lands of Importance to the State of Hawaiʻi*

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawaiʻi (ALISH). The classification system is based primarily, though not exclusively, upon the soil characteristics of the lands. The three classes of ALISH lands are: “Prime”, “Unique”, and “Other”, with all remaining lands termed “Unclassified”. When utilized with modern farming methods, “Prime” agricultural lands have a soil quality, growing season, and moisture supply necessary to produce sustained crop yields economically. All of the soils underlying Pūlehunui North are designated as “Prime”. “Unique” agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. “Other” agricultural lands (of “importance to the State of Hawaiʻi”) include those that have not been rated as ”Prime” or “Unique”. The soils under Pūlehunui South are classified both “Prime” and “Other” by the ALISH classification system (See Figure 4-3)



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LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

LSB Productivity Rating

- A
- B
- C
- D
- E
- Unclassified

DATE: 9/14/2018

Figure 4-2:
Land Study Bureau
Detailed Land Classification

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

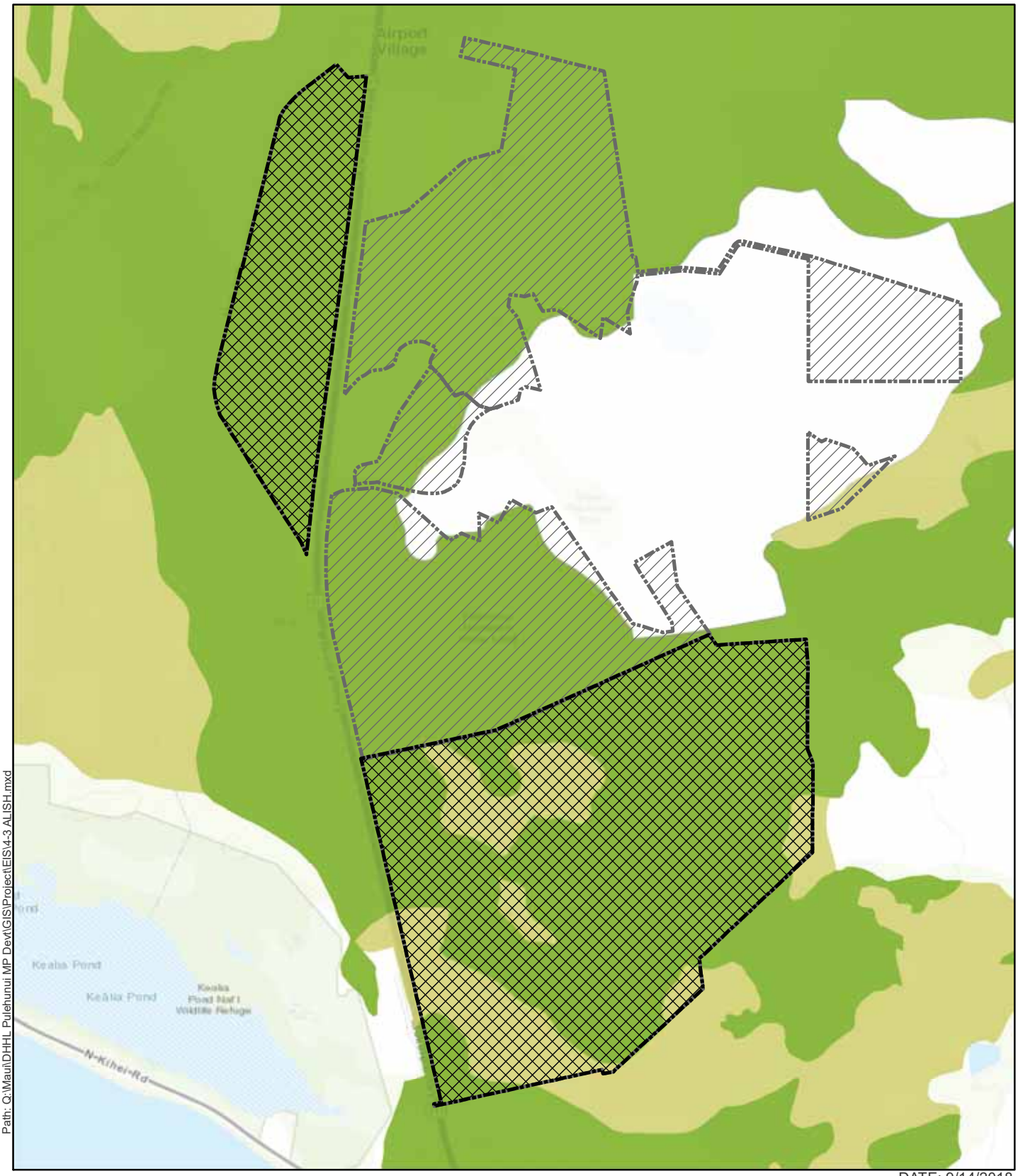
North

Linear Scale (feet)
0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: Land Study Bureau's Detailed Agricultural land productivity ratings, 1967.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

Ag. Lands of Importance to the State of Hawaii

- Prime ALISH
- Other ALISH
- Unclassified

Figure 4-3:
Agricultural Lands of Importance to the State of Hawai'i

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

Source: ESRI online basemap.ALISH: State OP digitized from Hawaii Department of Agriculture, 1977.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 5. We note that the project area is designated 'Prime,' according to the Agricultural Lands of Importance to the State of Hawaii. We note that your proposed development includes agriculture, diversified agriculture and agricultural homesteads, and that there is a need for locally grown products, as well as great community support. Instead of the proposed industrial and commercial uses, would the Applicant consider a project consisting solely of agricultural uses?

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands, and the anticipated land uses are generally consistent with the Department's existing Maui Island Plan. The anticipated amendment to the Department's Maui Island Plan is being sought to refine the plan for agriculture and supporting uses at Pūlehunui South, based on outreach to DHHL Beneficiaries which is detailed in Section 9.2. As noted in Section 1.1.2 and pursuant to DHHL's mission , the secondary, supporting purpose of the Proposed Action is to further define the programmatic land uses anticipated on DHHL's two lands in Pūlehunui ("Pūlehunui North" and "Pūlehunui South") through the Beneficiary Consultation process and technical studies, to ensure conformance with the Maui Island Plan (Department of Hawaiian Home Lands, 2004), and to provide direct and indirect benefits to DHHL Beneficiaries and programs in the form of improved lands, homesteading opportunities, and opportunities to pursue revenue generating general leases at Pūlehunui North. Changing the proposed land use in Pūlehunui North to solely agricultural uses would generate substantially lower revenue, negatively impacting DHHL's ability to fulfill the Department's mission in the long term. Moreover, excluding agricultural supporting uses would go against the outcome of DHHL's public engagement and consultation as outlined in Section 9.0. Generally, the anticipated land uses at the DHHL Project Areas are the product of extensive outreach to the DHHL Beneficiary community, in line with our Department's mission.

The majority of Pūlehunui South will be used for agriculture and diversified agriculture, and the underlying soils make the property ideal for agricultural use. By reinstating agriculture at the currently-fallow Pūlehunui South, the Proposed Action will allow for better maintenance of the property through the active management and irrigation of soils and productive agriculture operations. The return of Pūlehunui South to agricultural uses will provide mitigation for long term soil erosion through use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. Additional information on impacts to agriculture is discussed in section 5.9. The commercial/industrial designation of portions of the DHHL Project Areas provides for flexible use and could support opportunities in retail, agribusiness processing, packaging, and/or marketing of agricultural goods including those produced by DHHL's agriculture lessees.

To mitigate impacts to soil resources in the DHHL Project Areas, the following best management practices (BMPs) will be considered by contractors during the construction phase:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Keep runoff onsite.
- Construction exceeding one acre is required to comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements.

Contractors will be required to provide BMPs as part of their contracts.

4.4 NATURAL HAZARDS

Maui is susceptible to potential natural hazards, such as flooding, tsunami inundation, hurricanes, earthquakes, and volcanic eruptions. The State Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the state to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. The closest siren to the property is approximately 0.4 miles to the south in Kīhei. The DLNR is in consultation with the State Department of Defense regarding a potential figure outdoor warning siren associated with the DLNR Business and Industrial Park (Munekiyo Hiraga, 2019).

Authorized by Section 322 of the Robert T. Stafford Act as amended by Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000), 44 CFR Part 201, Hazard Mitigation Planning, establishes criteria for developing state and local hazard mitigation plans. This act required states and counties to have approved hazard mitigation plans by November 1, 2004 to receive Pre-Disaster Mitigation funding. The Standard State Hazard Mitigation Plan is also required for non-emergency assistance provided under the Stafford Act, including Public Assistance restoration of damaged facilities and the Hazard Mitigation Grant Program. The development of state and local hazard mitigation plans is critical for maintaining eligibility for future Federal Emergency Management Agency (FEMA) mitigation and disaster recovery funding. The State of Hawai‘i’s Multi-Hazard Mitigation Plan was formally approved on October 27, 2004, and the latest update was published in 2013.

In addition, the County Civil Defense Agency is responsible for administering and operating the various local, state, and federal civil defense programs for the County. This includes planning, preparing, and coordinating civil defense operations in meeting disaster situations and coordinating post-disaster recovery operations. The Maui Hazard Mitigation Plan (August 2015) is a master plan for the County that:

- Identifies the hazards and risks posed by natural and technological disasters;

- Identifies hazard mitigation actions and activities to reduce losses from such disasters; and
- Establishes priorities and a long-term sustained process to implement those actions.

The Maui Hazard Mitigation Plan focuses on mitigating hazards to critical facilities and special populations or areas. Critical facilities include those public and private facilities that need to be operational during and after a hazard event to meet public health and safety needs, or to speed economic recovery. These facilities include the following:

- Emergency response facilities: Civil Defense Emergency Operations Center (EOC), emergency shelters, police, fire and Emergency Medical Service (EMS) stations, hospitals, and Department of Public Works baseyards.
- Government facilities and services: Government buildings and schools that are all important for maintaining daily operations and preserving the economy.
- Critical infrastructure and lifeline facilities: transportation (harbors, airports, roads/bridges), energy (electrical, fuel, gas), communication (wired/cabled telecommunication, wireless), water, and wastewater.
- Other Important Assets: debris clearing and disposal, car rentals, buses, financial institutions, survival and building supplies.

There are no objectives or priorities in the Maui Hazard Mitigation Plan that specify implementation requirements by the Proposing Agency.

4.4.1 *Flood*

During the Draft EIS public review period, the DLNR Engineering Division wrote:

> 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 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), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).
>
> If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below[…]

Flood hazards are identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the

FIRM, the vast majority of the DHHL Project Areas is designated Zone X, indicating "areas of minimal flood hazard" outside the 500-year (0.2 percent annual chance) floodplain. (See Figure 4-4).

A narrow portion of Pūlehunui North along Maui Veterans Highway is designated Zone XS (0.2 percent annual chance flood). A portion of Pūlehunui South along Maui Veterans Highway is designated Zone AE (100-year flood area), associated with Keāhuaiwi Gulch. At a slightly higher elevation, a portion of Pūlehunui South is designated Zone XS. At the northwestern boundary of Pūlehunui South along Maui Veterans Highway, a small area designated Zone A 100-year (one percent annual chance) is associated with Kolaloa Gulch. Potential drainage infrastructure deficiencies exist and are discussed in Section 5.8.4.

4.4.2 *Tsunami*

Pūlehunui South is located inland approximately one mile from the coastline (starting at an elevation of 15 feet above mean sea level (AMSL) and outside of the tsunami evacuation zone for the Island of Maui. Pūlehunui North is located further inland (approximately 1.7 miles) from the nearest coastline.

4.4.3 *Hurricane*

Records show that strong wind storms have struck all major islands in the Hawaiian Island chain since the beginning of history. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August of 1950. Since 1980, two hurricanes have had a devastating effect on Hawai'i: Hurricane 'Iwa in 1982 and Hurricane 'Iniki in 1992.

4.4.4 *Earthquake*

In Hawai'i, most earthquakes are linked to volcanic activity rather than the movement of tectonic plates. Each year, thousands of earthquakes occur in Hawai'i, but the vast majority of them are only detectable with highly sensitive instruments. However, moderate and disastrous earthquakes have occurred in Hawai'i.

The 1938 Maui Earthquake, with a magnitude of between 6.7 and 6.9 on the Richter Scale and an epicenter six miles north of Maui, created landslides and forced the closure of Hāna Highway. Damaged water pipes and ground fractures were reported in Lahaina.

A recent series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay (Hawai'i Island) on October 15, 2006. On Maui, these earthquakes caused a closure of the Pa'ihi Bridge between Kīpahulu and Hāna, as well as a rockslide over the highway between Kīpahulu and Kaupō, cutting utility lines and undermining sections of the narrow roadway. The road between Kīpahulu and Kaupō was shut down in December 2006 and not re-opened until October 2008.

On May 4, 2018, a series of earthquakes occurred, including a powerful magnitude 6.9, hit the Big Island, where the Kilauea volcano has been spewing fountains of lava into residential areas and forcing hundreds to evacuate. The US Geological Survey (USGS) said the strongest tremor occurred at 12.32 pm and measured 6.9 on the Richter Scale,

4.4.5 *Volcanic Eruptions*

Volcanic hazards on Maui are considered minimal due to the dormant status of the island's volcanoes.

4.4.6 *Sea Level Rise*

The Hawaii Sea Level Rise Vulnerability and Adaptation Report (https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf), provides a picture of the future of the island of Maui with sea level rise and the potential impacts from chronic flooding based on modeling coastal flooding with sea level rise due to passive flooding, annual high wave flooding, and coastal erosion in the SLR-XA with up to 3.2 feet of sea level rise, and depicts flood hazards that may occur in the mid- to latter-half of this century. According to the report, this "timeframe is within the expected lifespan of most new construction and much of our existing development. It should be noted that sea level rise projections greater than 3.2 feet are "physically plausible" by the end of the century, based on the latest climate science…"

Potential Impacts and Mitigation Measures for Natural Hazards

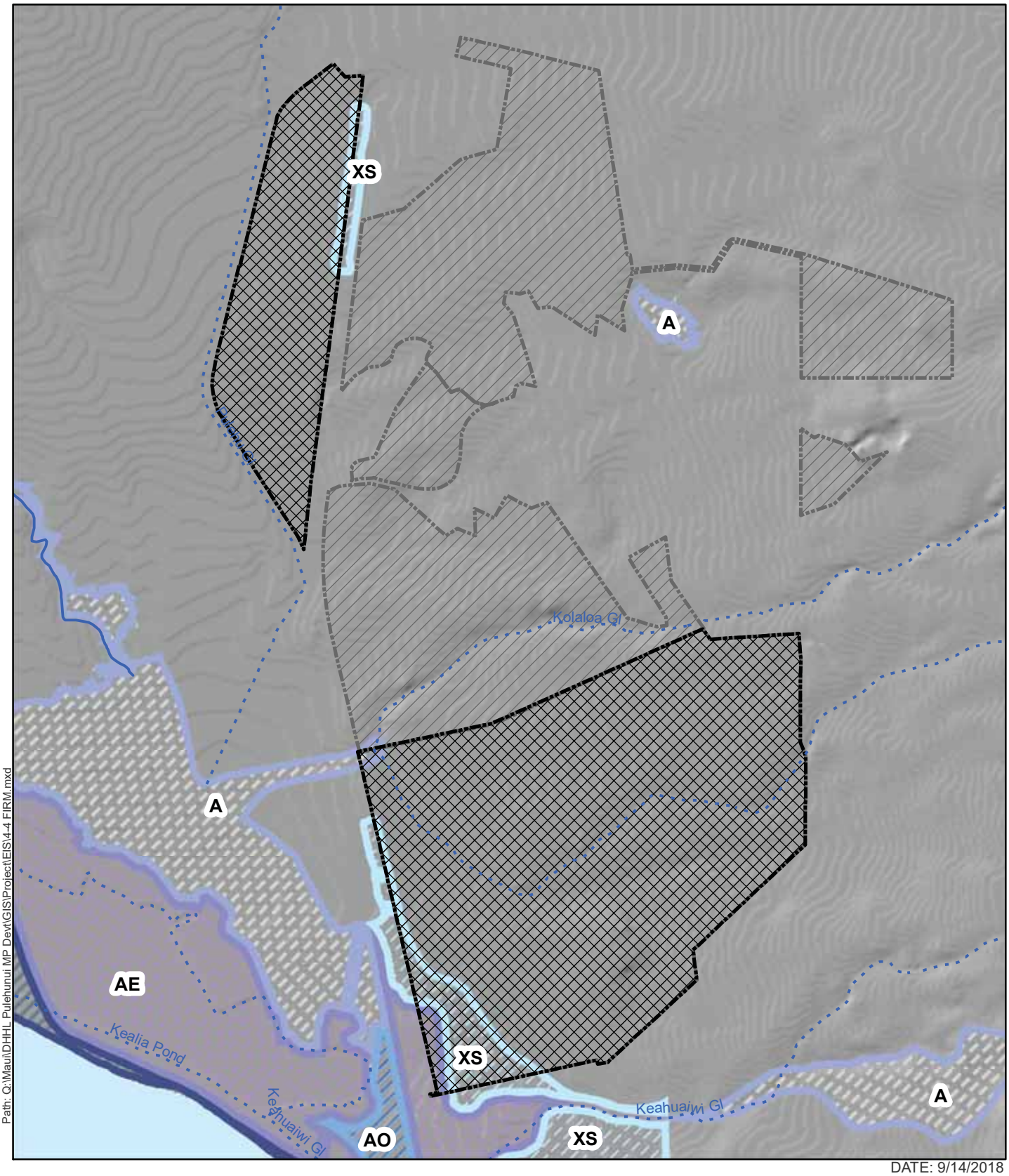
To avoid the potential impact of future flooding, no habitable structures will be built in the Zone AE portion of Pūlehunui South. Flood hazards are identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, most of the DHHL Project Areas are designated Zone X, which denotes "areas of minimal flood hazard" outside the 500-year (0.2 percent annual chance) floodplain. (See Figure 4-4). Potential drainage infrastructure deficiencies exist and are discussed in Section 5.8.4

The Proposed Action is located outside of the tsunami evacuation area. Significant adverse effects with respect to flood and tsunami hazards are not anticipated as a result of the Proposed Action. The Pūlehunui community will not exacerbate any hazard conditions. Potential damage caused by earthquakes and hurricanes will be mitigated, for structures constructed in compliance with the County Building Code.

According to the Hawaii Sea Level Rise Vulnerability and Adaptation Report (Hawaii Climate Change Mitigation and Adaptation Commission, 2017), the DHHL Project Areas would not be directly impacted by 3.2 feet of Sea Level Rise.

4.5 STREAMS AND SURFACE WATER

An A&B-owned irrigation ditch (Pūlehu Ditch) runs along the western edge of Pūlehunui North, roughly following Mehameha Loop and terminating at Keālia Pond. Refer to Figure 4-5. At Pūlehunui South, one nonperennial stream that runs from east to west. Other than the nonperennial stream at Pūlehunui South, there are no streams, major drainageways, wetlands, or waterbodies in the DHHL Project Areas (Figure 4-5). Less than one mile to the south west of the Pūlehunui South property is Keālia Pond (see Figure 4-5). Established in 1992, Keālia Pond National Wildlife Refuge encompasses approximately 700 acres and is one of the few natural wetlands remaining in the



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

Streams

- NON-PERENNIAL
- PERENNIAL

Flood Zone

- XS - 0.2% Annual Chance Flood
- A - 1% Annual Chance Flood
- AE - 1% Annual Chance Flood (BFE)
- AO - Flood Depths of 1-3'
- VE- Coastal Flood Zone, Wave Hazard (BFE)

Figure 4-4:
Flood Insurance Rate Map

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

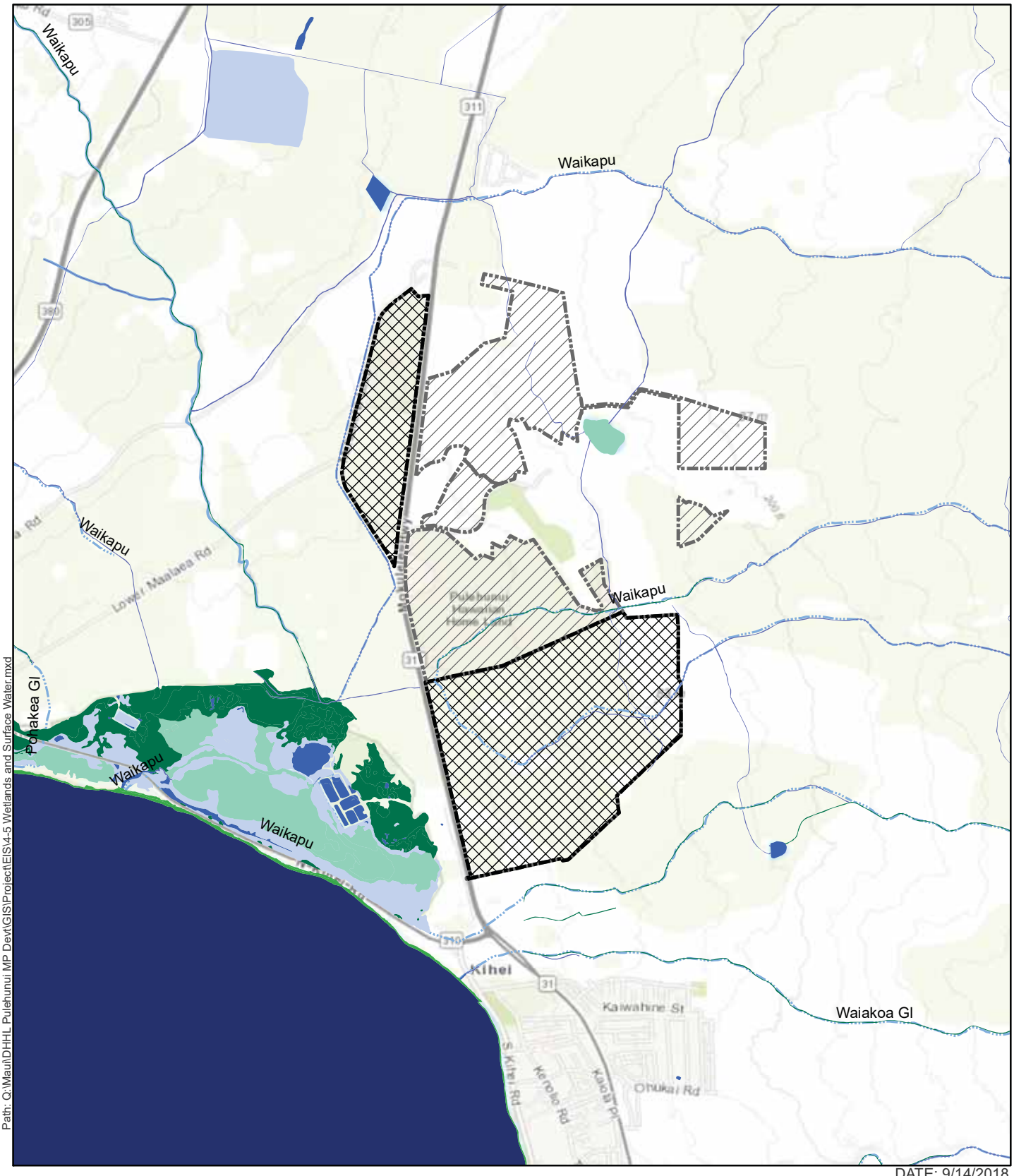
Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

Source: ESRI online basemap. FEMA, 2015.



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

Streams

- NON-PERENNIAL
- PERENNIAL

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Figure 4-5:
Wetlands and Surface Water

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

Source: ESRI online basemap.NWI/USFWS, 2016. Hawaii DLNR Division of Aquatic Resources, 2008, 2013.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Hawaiian Islands. Located along the south-central coast of Maui, between the towns of Kīhei and Māʻalaea, it is a natural basin for a 56-square mile watershed in the West Maui Mountains.

The Infrastructure Regional Study Area is a minimum of one mile from the nearest coastline at Māʻalaea Bay which is classified as a Class A water ("open coastal waters between Puʻu Olai and Nakalele Point"). According to DOH Water Quality Standards, "It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" (HAR §11-54-03).

The State has a General Policy of Water Quality Antidegradation (§11-54-1.1, HAR), which states that existing uses and the level of water quality necessary to protect them, shall be maintained and protected. In the case that water quality exceeds levels necessary to protect aquatic habitats, water quality may not be degraded without director approval.

All discharges related to the Proposed Action's construction or operation activities, whether or not National Pollutant Discharge Elimination (NPDES) system permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55.

Potential Impacts and Mitigation Measures

During the EISPN Public Review period, the U.S. Army Corps of Engineers wrote: "Work related to the proposed Pūlehunui Regional Infrastructure Master Plan may result in impacts to waters of the United States regulated by the U.S. Army Corps of Engineers and the work may require a permit from the Corps. The Corps requests the opportunity to comment on the DEIS when it is drafted." If the Proposed Action is anticipated to impact waters of the United States, DHHL acknowledges a permit will be required from the Corps. Pursuant to the Clean Water Act, a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the proposed action may result in any discharge into navigable waters or as otherwise triggered.

During the Draft EIS public review period, the State Commission on Water Resource Management (CWRM) wrote:

> The second alternative is to treat and use surface water from the East Maui Irrigation (EMI) System. The DEIS should discuss the interim instream flow standards (IIFS) for East Maui streams that supply the EM I system and whether the IIFS accommodates the proposed development.
>
> […]
>
> A separate non-potable system is also proposed to supply irrigation water for agricultural needs and landscaping. An existing HC&S system is identified as an option to meet the

estimated demand of 0.784 mgd. Similar to Alternative 2, a discussion of the streams to be impacted and compliance with IIFS should be included in the DEIS.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

None of the water or irrigation alternatives for the Proposed Action propose any amendment or alteration to the existing IIFS. The contemplated alternatives would service the Infrastructure Regional Study Area without preventing attainment of the IIFS.

The Proposed Action is not anticipated to ~~affect~~ adversely impact downgradient perennial streams, major drainageways, wetlands or waterbodies (and in particular Keālia Pond). There will be no increase in runoff from the proposed development of either Pūlehunui North or Pūlehunui South towards Keālia Pond. Rather, the proposed drainage plan for the DHHL Project Areas is anticipated to positively impact current runoff conditions; in implementing the proposed design for Pūlehunui South, the total onsite runoff from that property will be reduced by 96 percent compared to existing conditions. Section 5.8.4 discusses existing and proposed drainage conditions. Furthermore, Low-impact Development (LID) strategies will be considered at the DHHL Project Areas, which would further mitigate potential impacts.

To mitigate impacts to surface and groundwater resources, the following best management practices (BMPs) will be considered by contractors during the construction phase:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Keep runoff onsite.
- Construction exceeding one acre is required to comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements.
- Contractors will be required to provide BMPs as part of their contracts.

Refer to Section 5.8.4 and Appendix C for a detailed discussion of drainage conditions.

Any potential impacts to Class A waters caused by the construction and/or operation of the proposed action will meet the provisions of the: a) anti-degradation policy (Chapter 11-54-1.1, HAR); b) designated uses (Chapter 11-54-3, HAR); and c) water quality criteria (Chapter 11.54-4 through 11-54-8, HAR).

Pursuant to the Clean Water Act, a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the proposed action may result in any discharge into navigable waters or as otherwise triggered.

All discharges related to the construction and operation of the proposed action will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.

4.6 FLORA RESOURCES

The DLNR Division of Forestry and Wildlife (DOFAW) wrote: "DOFAW recommends surveying for rare and endangered plants that historically occur in the area. If any of these species are found, please notify our Maui DOFAW office…"

Walk-through biological surveys of the DHHL Project Areas were conducted by Robert Hobdy in 2011 (Pūlehunui North) and 2017 (Pūlehunui South). Refer to Appendix E-1 and Appendix E-2.

Pūlehunui North Flora
At the time of the field survey, Pūlehunui North was vegetated with sugar cane (*Saccharum officinarum*) and a variety of agricultural weeds, the most common of which were: nut sedge (*Cyperus rotundus*), buffelgrass (*Cenchrus ciliaris*), spiny amaranth (*Amaranthus spinosus*), hairy merremia (*Merremia aegyptia*), creeping indigo (*Indigofera hendecaphylla*), ʻuhaloa (*Waltheria indica*), cheeseweed (*Malva parviflora*) and apple of Peru (*Nicandra physalodes*). With the cessation of sugar cane, Pūlehunui North overgrown with the agricultural weeds mentioned above.

A total of 52 plant species were recorded during the survey of Pūlehunui North. Of these just two are indigenous native plants: ʻuhaloa (*Waltheria indica*) and ʻilima (*Sida fallax*). These two species are both widespread and common in Hawaiʻi and occur on numerous other islands in the Pacific as well. The remaining 50 species include the crop plant, sugar cane, and a variety of common agricultural weeds.

Pūlehunui South Flora
Most of the vegetation in the recently harvested fallow fields was rather sparse and low in stature. Recent rains were just beginning to stimulate early sprouting and seasonal growth. A total of 59 plant species were recorded in the Pūlehunui South during three site visits. Two species were abundant in the area including buffelgrass (*Cenchrus ciliaris*) and ʻuhaloa (*Waltheria indica*). An additional eight species were of common occurrence, Guinea grass (*Megathyrsus maximus*), swollen fingergrass (*Chloris barbata*), sugar cane (*Saccharum officinarum*), Russian thistle (*Kali tragus*), golden crown-beard (*Verbesina encelioides*), kiawe (Prosopis *pallida*), ʻilima (*Sida fallax*) and tree tobacco (*Nicotiana glauca*).

Four hardy indigenous native species were recorded in the area, the ʻuhaloa, ʻilima, kīpūkai (*Heliotropium curassavicum*) and koali kuahulu (*Merremia aegyptia*). The remaining 55 species were all non-native grasses, shrubs and an assortment of agricultural weeds.

Potential Impacts and Mitigation Measures

The vegetation throughout Pūlehunui North is dominated by a great variety of non-native plants. These and the two native species ʻuhaloa and ʻilima, are all common and of no particular environmental concern. The vegetation throughout the Pūlehunui South is dominated by non-native species that are of no particular environmental interest or concern. Just four common indigenous plants, ʻilima, ʻuhaloa, kīpūkai and koali kuahulu (*Merremia aegyptia*) were found growing in the area.
No federally listed Endangered or Threatened native plant species (USFWS, 2009) were encountered during the course of the survey. Nor were any species that are candidate for such status was observed. No special habitats or rare plant communities were seen on Pūlehunui North.

As a result of these above conditions there is little of botanical concern at the DHHL Project Areas. The Proposed Action is therefore not expected to have any significant negative impact on the botanical resources in this part of Maui. No mitigations were recommended regarding the botanical resources in the DHHL Project Areas.

The DLNR Division of Forestry and Wildlife (DOFAW) wrote:

We recommend using native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home).

You should avoid moving soil or other plant material between the islands due to the potential presence of pathogens. We recommend consulting the Hawai'i Interagency Biosecurity Plan at http:/7dlnr.hawaii.gov/hisc/plans/hibp/ in planning, design, and construction of the project.

[…]

We appreciate your efforts to work with our office for the conservation of our native species. 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.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

As noted in Section 5.8.1, DHHL will embrace the use of native plants as a means of water conservation and to support cultural practices; this may positively impact flora resources. DHHL will also adhere to all applicable requirements of §103D-408, HRS Hawaiian plants; use in public landscaping which stipulates that *all plans, designs, and specifications for new or renovated landscaping of any building, complex of buildings, facility, complex of facilities, or housing developed by the State with public moneys shall incorporate Hawaiian plants*. The statute requires Hawaiian plants to constitute a minimum of 25 percent of the total plant footprint for landscaping designs,

plans, and specifications by 2025, and 35 percent by 2030. In general, DHHL embraces the use of native plantings and acknowledges the risks of moving soil and plant material between the islands.

4.7 FAUNA RESOURCES

During the Draft EIS public review period, the U.S. Fish and Wildlife Service (USFWS) wrote:

> Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, there are five listed species in the vicinity of the project area: the endangered Hawaiian hoary bat (Lasiurus cinereus semotus), Hawaiian petrel (Pterodroma sandwichensis), band-rumped storm-petrel (Oceanodroma castro), and the threatened Newell's shearwater (Puffinus newelli), and endangered Blackburn's sphinx moth (Manduca blackburni). There is no proposed or final critical habitat within the vicinity of the project area. Kealia Pond National Wildlife Refuge is located less than ¼ mile from Pūlehunui South, proposed project area. We offer the following recommendations to avoid and minimize project impacts to listed species pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.).
>
> […]

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

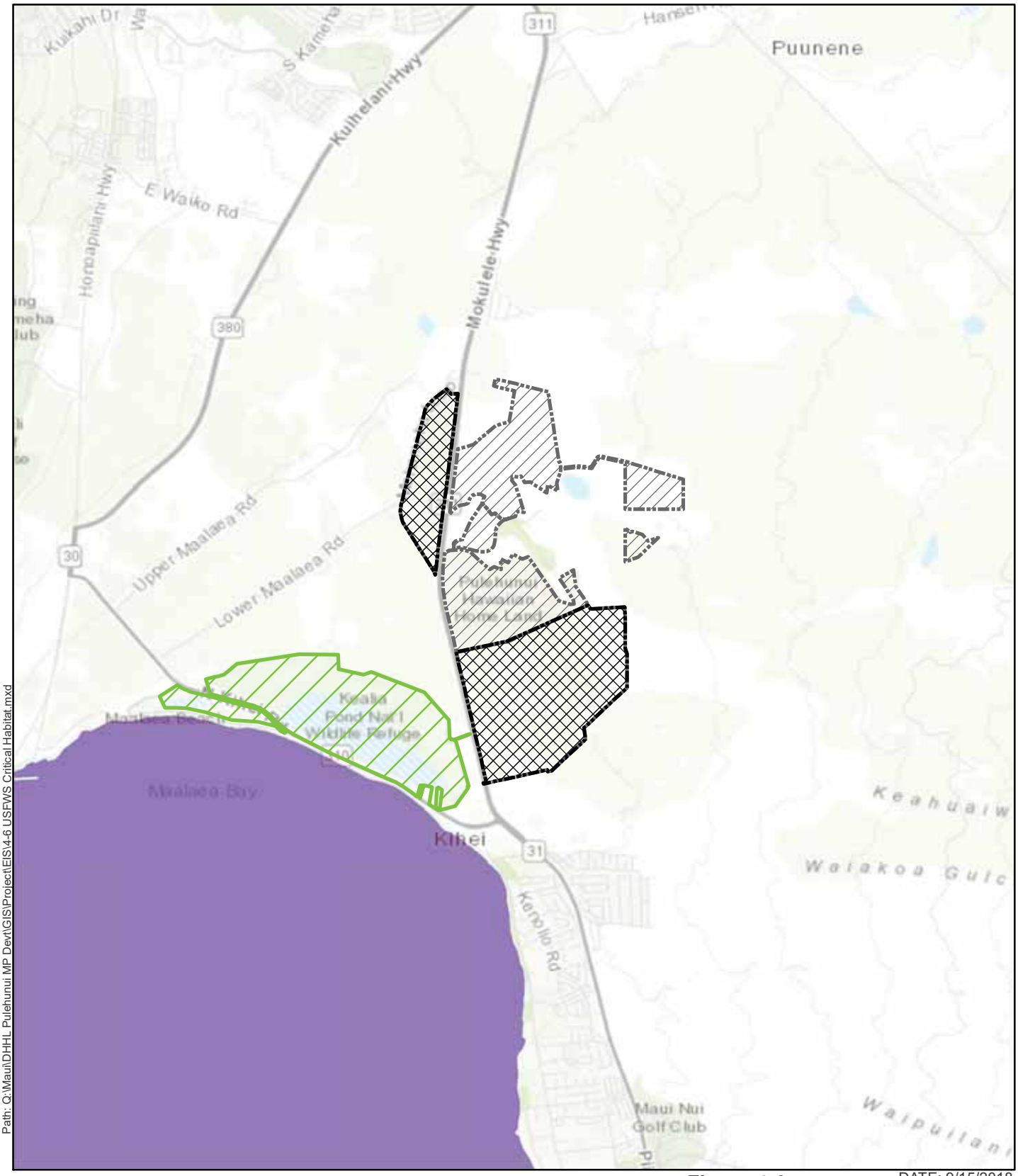
Walk-through fauna surveys were conducted by Robert Hobdy in conjunction with the biological surveys conducted in 2011 (Pūlehunui North) and 2017 (Pūlehunui South). All parts of each property were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition, evening visits were made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

U.S. Fish and Wildlife Service Critical Habitat

There are no U.S. Fish and Wildlife Service Critical Habitat areas in the DHHL Project Areas (see Figure 4-6).

Pūlehunui North Mammals

Three species of non-native mammals or their signs were observed during two site visits. Taxonomy and nomenclature follow Tomich (1986). These include signs of domestic dog (*Canis familiaris*), feral cart (*Felis catus*) and rat (*Rattus* sp.)



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LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area
- Critical Habitat-Animal (Hawaiian Monk Seal)
- Critical Habitat-Plant (none shown)
- Keālia Pond National Wildlife Refuge

DATE: 9/15/2018

Figure 4-6:
USFWS Critical Habitat and Keālia Pond

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (miles)

0 0.25 0.5 1

Source: ESRI online basemap. DLNR DOFAW, 2016. CritHab: USFWS, 2018.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Other non-native mammals one would expect to see in this habitat include mice (*Mus domesticus*) and mongoose (*Herpestes auropunctatus*). These rodents feed on seeds, fruits, insects, eggs and herbaceous vegetation and are prey for the cats and mongoose.

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey at two sites in Pūlehunui North. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and plenty of flying insects were seen. In addition, a bat-detecting device (Batbox IIID) was employed after dusk, set to the frequency of 27,000 Hertz which these bats are known to use for echolocation. No bats were detected at either site using this device.

Pūlehunui South Mammals

Tracks of four mammal species were seen during three site visits in the Pūlehunui South. Recent rains left much muddy ground that facilitated track identification. Most common were feral pigs (*Sus scrofa*) whose tracks were everywhere, and some were seen. Axis deer (*Axis axis*) tracks were also widespread and one small herd was seen after dark. Also common were mongoose (Herpestes auropunctatus) tracks and scat. Tracks of one domestic dog (*Canis familiaris*) were seen.

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey of the Pūlehunui South at four locations. A bat detecting device (Batbox IIID) was employed that steps-down the ultra-sonic echo-location call they emit from 27,000 hertz into the audial range of humans. A single bat was detected at close range at one location in the northwest corner of the Pūlehunui South adjacent to Kolaloa Stream channel just above Maui Veterans Highway.

A few other non-native mammal species that could be expected to occur in the Pūlehunui South include mice (Mus domesticus), rats (Rattus spp.) and feral cats (Felis catus).

Pūlehunui North Birds

There were moderate levels of both bird species and total numbers observed across Pūlehunui North during two site visits. When sugar cane was in cultivation, temporary puddles from agricultural drip irrigation drew in a number of these species to the area. Fourteen bird species were recorded, including 12 non-native species, 1 migratory species, the Pacific golden plover or kōlea (*Pluvialis fulva*), and 1 indigenous waterbird, the black-crowned night-heron or ʻaukuʻu (*Nycticorax hoactli*). Taxonomy and nomenclature follow American Ornithologists' Union (2011).

Two bird species were common around the sugar cane fields: zebra dove (*Geopelia striata*) and spotted dove (*Streptopelia chinensis*). Less common were the rock dove (*Columba livia*) and the migratory kōlea. One ʻaukuʻu was seen at dusk flying over the area towards a plantation reservoir where it would roost for the night. A few other non-native bird species such as the northern cardinal (*Cardinalis cardinalis*), house finch (*Carpodacus mexicanus*) and the nutmeg mannikin (*Lonchura punctulata*) might also be expected to occur here, but the habitat is not suitable for Hawaiʻi's native forest birds that are presently restricted to higher elevations beyond the range of mosquitoes and the deadly avian diseases they transmit. None of the endangered nēnē goose (*Branta sandvicensis*) were seen in the habitat.

Hawaiian Biodiversity and Mapping records indicated that several of the Endangered Hawaiian stilt (*Himantopus mexicanus knudseni*) and Hawaiian coot (*Fulica alai*) have been seen at Keālia National Wildlife Refuge a mile to the south and at small plantation reservoirs over a mile to the north of the area. These water birds are attracted to such aquatic features. No such aquatic features occur in the area and these birds are not likely to utilize this dry habitat.

Pūlehunui South Birds

Birdlife was fairly diverse with 14 species being recorded during three site visits to the Pūlehunui South. Taxonomy and nomenclature follow American Ornithologists' Union (2017). Three species were common throughout the Pūlehunui South, including the zebra dove (*Geopelia striata*), the spotted dove (*Streptopelia chinensis*) and the gray francolin (*Francolinus pondicerianus*). Uncommon were the black francolin (*Francolinus francolinus*), mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), African silverbill *(Lonchura cantans*) and the ʻakekeke or ruddy turnstone (*Arenaria interpres*). An additional six species were of rare occurrence.

Two species were indigenous, migratory birds that breed and raise their young in the arctic during the summer but spend their winter months in Hawaii: the ʻakekeke and the kōlea or Pacific golden-plover (*Pluvialis fulva*).

A few other non-native birds might occasionally be seen here, but the habitat is not suitable for Hawaiʻi's native forest birds and seabirds that nest high in the mountains beyond the range of mosquitoes and the avian diseases they carry and transmit.

Pūlehunui North Insects

There were moderate numbers of insect species encountered in this area. A total of 10 non-native species were identified within 6 insect Orders (See Fauna Inventory). Taxonomy and nomenclature follow Nishida et al (1992). No native species were seen. Two species were of common occurrence in the area: the common honey bee (*Apis mellifera*) and the long-tailed blue butterfly (*Lamipides boeticus*).

A special effort was made to look for the Endangered Blackburn's sphinx moth (*Manduca blackburni*) (USFWS 2008) by carefully examining the approximately 30 specimens of its non-native alternate host plant, the tree tobacco (*Nicotiana glauca*), that were found in the area. No adult moths, their larvae or their eggs were found on these plants. These moths are closely linked to certain plants in the nightshade family, which have toxins to which the moths and larvae have adapted that provide protection from potential predators. (Adult moths can also feed on nectar from native plants including beach morning glory (*Ipomoea pes-caprae*), ʻilieʻe (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*).) The native species of ʻaiea (Nothocestrum spp.) used to provide these protections, but has now become rare, and the Blackburn's sphinx moth subsequently became rare as well. Fortunately for the moth, the non-native tree tobacco shrub provides a source of similar toxins, and moth numbers are starting to rebound. Tree tobacco thrives in hot, dry climates and had invaded sugar cane fields where it enjoyed irrigation and fertilizer. Historically, tree tobacco populations were held in check during the harvesting process when the fields were burned. However, now that sugarcane agriculture has ceased and these fields are fallow, tree tobacco plants are becoming more abundant.

Also looked for were small native bees of the genus Hylaeus, some of which are Endangered. These bees frequent the flowers of the native shrub ʻilima (*Sida fallax*) a few of which were scattered around the north end of the area. Though some of the ʻilima were in flower careful observation did not turn up any of these native bees.

Pūlehunui South Insects

Insects were rather modest in species diversity and in total numbers in this normally dry habitat. A total of 11 species, representing six insect Orders, were found in the Pūlehunui South during three site visits. Taxonomy and nomenclature follow Nishida et al (1992). Just one species was of common occurrence, the graybird grasshopper (*Schistocera nitens*). Seven species were uncommon and three species were rare (see the Animal Species List on page 10 of Appendix E-2). Just one native dragonfly, the indigenous globe skimmer (*Pantala flavescens*) was recorded in moderate numbers.

No Endangered Blackburn's sphinx moth (Manduca blackburni) adults, larvae or eggs were observed at Pūlehunui South during the biological survey. As noted above, the non-native weedy shrub known as tree tobacco (*Nicotiana glauca*) provides a source of similar toxins, and moth numbers are starting to rebound. Tree tobacco thrives in hot, dry climates and had invaded sugar cane fields where it enjoyed irrigation and fertilizer. Historically, tree tobacco populations were held in check during the harvesting process when the fields were burned. However, now that sugarcane agriculture has ceased and these fields are fallow, tree tobacco plants are becoming abundant. At Pūlehunui South, this is especially true in the lower half of the property.

Potential Impacts and Mitigation Measures

Pūlehunui South Fauna

The wildlife within the Pūlehunui South are composed mostly of non-native species that are of no special conservation concern. Just one mammal, two birds and one insect were found in this Pūlehunui South that are species native to Hawaii. These species are addressed here along with other species that are either associated with native species or which could possibly utilize this habitat although not found during the survey.

USFWS wrote:

> Hawaiian Hoary Bat.
> The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet (ft) or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 ft to higher than 500 ft above the ground
> and can become entangled in barbed wire used for fencing.
> To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:
>
> - Do not disturb, remove, or trim woody plants greater than 15 ft tall during the bat birthing and pup rearing season (June 1 through September 15).
> - Do not use barbed wire for fencing.

-The DLNR Division of Forestry and Wildlife (DOFAW) wrote:

> The State and Federal listed Hawaiian Hoary Bat {Lasiurus cinereus semotus) has the potential to occur in the vicinity of the project area and may roost in trees. To avoid the potential for impacts to this tree-roosting species, site clearing should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided woody plants greater than 15 feet (4.6 meters) tail should not be disturbed, removed, or trimmed without consulting DOFAW. Barbed wire should be avoided for any construction because bat mortalities have been documented as a result of becoming ensnared by barbed wire during flight.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

~~'Ōpe'ape'a or Hawaiian bat - One of these Endangered bats was positively detected in the northwest corner of the Pūlehunui South. Their Endangered status provides special protections and some habitat considerations that ensure that they are not harmed or killed. The U.S. Fish and Wildlife Services (USFWS) has jurisdiction over Endangered species under the authority of the Endangered Species Act (1973). These bats are wide ranging and may temporarily use this habitat in response to spikes in populations of nocturnal flying insects which they prey upon. These bats breed and raise their young between April and September. They place their immature young in trees during the night when the adults are out feeding on insects, and tend to them during the day. The USFWS recommends not removing trees during the breeding season. In this Pūlehunui South the vast majority of the land is recently harvested sugar cane fields that have no trees on them. Large kiawe and other trees are presently restricted to intermittent stream channels that pass through the area and along some of the boundaries.~~

'Ōpe'ape'a or Hawaiian bat. One bat was positively detected in the northwest corner of the Pūlehunui South. Their Endangered status provides special protections and some habitat considerations that ensure that they are not harmed or killed. The U.S. Fish and Wildlife Services (USFWS) has jurisdiction over Endangered species under the authority of the Endangered Species Act (1973). These bats are wide ranging and may temporarily use this habitat in response to spikes in populations of nocturnal flying insects which they prey upon. These bats breed and raise their young between June 1 and September 15. Adults place their immature young in woody vegetation during the night when they forage, and tend to them during the day. To mitigate potential impacts to the 'ōpe'ape'a, contractors at the DHHL Project Areas will be instructed to avoid site clearing activities between June 1 through September 15. If site clearing must occur during this time, the DLNR Division of Forestry and Wildlife will be consulted before disturbance, removal or trimming of woody vegetation taller than 15 feet. Furthermore, the bats forage for insects as low as three feet to higher than 500 feet above the ground, and therefore barbed wire will not be used for fencing to mitigate harm to the bats caused by entanglement.

'Akekeke and Kōlea. Both of these migratory bird species are common winter visitors in Hawaii. They also occur in many other parts of the world as winter migrants. They are widespread and common and neither has any heightened conservation status. No recommendations are offered with regard to either of these bird species.

Globe skimmer dragonfly. This indigenous dragonfly is one of the most widespread insect species in Hawaii, and as its name implies, it is found in many other places around the globe. It is a species of least conservation concern and no recommendations are made.
USFWS wrote:

> Blackburn's sphinx moth
> The Blackburn's sphinx moth may be in the vicinity of the proposed project area. Adult moths feed on nectar from native plants, including beach morning glory (Ipomoea pes-caprae), iliee (Plumbago zeylanica), and maiapilo (Capparis sandwichiana); larvae feed upon non-native tree tobacco (Nicotiana glauca) and native aiea (Nothocestrum sp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for up to a year (or more) before emerging from the
> soil. Soil disturbance can result in death of the pupae.
> We offer the following survey recommendations to assess whether the Blackburn's sphinx moth is within the project area:
>
> - A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plants prior to work initiation.
>   - o Surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
>
> Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).
> o If moths or the native aiea or tree tobacco over 3 ft tall are found during the survey, please contact the Service for additional guidance to avoid take.
> If no Blackburn's sphinx moth, aiea, or tree tobacco are found during surveys, it is imperative that measures be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than 3 ft tall in approximately 6 weeks. If it grows over 3 ft, the plants may become a host plant for Blackburn's sphinx moth. We therefore recommend that you:
>
> - Remove any tree tobacco less than 3 ft tall.
> - Monitor the site every 4-6 weeks for new tree tobacco growth before, during and after the proposed ground-disturbing activity.
>   - o Monitoring for tree tobacco can be completed by any staff, such as groundskeeper or regular maintenance crew, provided with picture placards of tree tobacco at different life stages.

The County of Maui Planning Department wrote:

> 11. In the Biological Resources Survey, it said that Blackburn sphinx moths eggs or larvae were found in the area and that the tobacco plants should be examined during the wet season to determine their presence or absence. We encourage you to have the area re-examined during the rainy season. Also, the study noted that native seabird may fly over the area. Because the birds are attracted to bright lights and become disoriented by them, we encourage the shielding of outdoor lighting throughout the project area.

DOFAW wrote:

> The State and Federal listed Blackburn's Sphinx Moth (BSM; Manduca blackburni) has a historic range that encompasses the project area. Larvae of BSM feed on many normative hostplants that include tree tobacco {Nicotiana glauca) which grows in disturbed soil. We recommend contacting our Maui 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.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

~~Blackburn's sphinx moth – No Endangered Blackburn's sphinx moth (*Manduca blackburni*) adults, larvae or eggs were seen in Pūlehunui South during the survey. This may have been due to the fact that the survey was conducted at the time of year when all three of the above life stages are in a dormant state. These moths are closely linked to certain plants in the nightshade family, which have toxins to which the moths and larvae have adapted that provide protection from potential predators. The native species of 'aiea (*Nothocestrum spp.*) used to provide these protections, but have now become rare, and the Blackburn's sphinx moth has subsequently become rare as well. Fortunately for this moth it has found a source of similar toxins in a related non-native weedy shrub known as tree tobacco (*Nicotiana glauca*) and its numbers are starting to rebound. Tree tobacco thrives in hot dry climates and had invaded sugar cane fields where it enjoyed irrigation and fertilizer. It was held in check, however, during the harvesting process when the fields were burned. However, now that sugarcane agriculture has ceased and these fields have become fallow, tree tobacco plants are becoming abundant, especially in the lower half of Pūlehunui South, which have been shown to support recent population growth of these moths.~~

Blackburn's sphinx moth. No Endangered Blackburn's sphinx moth (Manduca blackburni) adults, larvae or eggs were observed at Pūlehunui South during the biological survey. This may have been because the survey was conducted at the time of year when all three of the above life stages are in a dormant state. Now that sugarcane agriculture has ceased and former sugar fields are fallow, tree tobacco plants are becoming abundant. At Pūlehunui South, this is especially true in the lower half of the property.

While tree tobacco plants are considered to be weeds in Hawai'i, they have been given federal protections when they are in association with the Endangered Blackburn's sphinx moth eggs and larvae. It is possible that the moths are present but dormant in chrysalis form in the soil beneath the potential tree tobacco host plants. These plants should be examined again ~~during~~ between November and April (the latter part of the wet season) to get a more definitive reading of their presence or absence. ~~Consultation~~ USFWS guidance will be followed and, if necessary, consultation with the USFWS will be sought prior to site clearing to address an appropriate plan for removal of existing tobacco plants on the Pūlehunui South property. (The USFWS will be contacted for additional guidance, should moths or host plants over three feet in height be identified. DHHL notes that should no moths or host plants be identified, USFWS has indicated that measures should be taken to avoid attracting moths and prohibit tree tobacco from entering the property.)

Nēnē. The nēnē goose is listed as an Endangered species and is endemic to the Hawaiian Islands. Nēnē feed on succulent young grasses and herbaceous vegetation and are often found near water features on golf courses and parks. No nēnē were seen during the survey but they could be attracted to the rain puddles. Their use of the Pūlehunui South will be greatly lessened by the cessation of field irrigation. If nēnē show up they should not be bothered or harassed and should be allowed to leave at their own convenience.

USFWS wrote:

> Seabirds:
> Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators.
> Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.
> To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:
> - Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
> - Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
> - Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

DOFAW wrote:

> We note that artificial lighting can adversely impact seabirds that may pass through the area at night causing disorientation that could result in collision with manmade artifacts or grounding of birds. For nighttime lighting that might be required at the facility, DOFAW recommends that any lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

~~Seabirds While no seabirds were found in the Pūlehunui South, two federally protected species, the Endangered 'ua'u or Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*) and the Threatened 'a'o or Newell's shearwater (*Puffinus newelli*) are known to fly from the ocean at dusk to their nesting burrows high in the mountains and return to the ocean at dawn during the breeding season between March and November. They fly over the lowlands during these flights. These birds are~~

~~known to be disoriented by bright lights and strike tall structures and be injured and grounded where they become vulnerable to vehicle strikes and predators. During October and November fledging young birds are particularly vulnerable to these threats. To mitigate these impacts, Pūlehunui South will utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting.~~

General Impacts to Seabirds. No seabirds were identified at Pulehunui South. However, seabirds that in the general vicinity may traverse the DHHL Project Areas at night during the breeding, nesting and fledging seasons (March 1 to December 15). Species of such seabirds may include the Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm-petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus newelli*) These birds are known to be disoriented by bright lights and strike tall structures and be injured and grounded where they become vulnerable to vehicle strikes and predators. Between September 15 and December 15, fledging young birds are particularly vulnerable to these threats. To mitigate impacts to seabirds, Pulehunui South will utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting. Where feasible, outdoor lights at Pulehunui South will be fully shielded so the bulb can only be seen from below bulb height, and only used when necessary. Nighttime construction will not occur between September 15 and December 15.

DOFAW wrote:

> Finally, DOFAW is concerned about attracting vulnerable birds to areas that may host non-native predators such as cats, rodents, and mongoose. We recommend taking action to minimize predator presence; remove cats, place bait stations for rodents and mongoose, and provide covered trash receptacles.
>
> We appreciate your efforts to work with our office for the conservation of our native species. 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.

The State of Hawai'i Department of Transportation Airports Division (DOT-AIR) wrote:

> Section 5.8.4 of the DEIS, pages 131-136, discusses new retention basins for mitigation to retain storm water at both sites (Pulehunui North and Pulehunui South), independent of outside flows from other properties. Standing water creates a potential wildlife attractant and therefore creates a bird-strike risk to aircrafts flying over the property.
>
> DOT-AIR requests that design and landscaping for the Pulehunui project do not create conditions to attract wildlife. lf wildlife is attracted to the project site and poses a potential hazard to aircrafts, the DHHL is requested to take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

Attraction of birds and other wildlife. DHHL acknowledges that standing water may create a potential wildlife attractant thereby presenting a bird-strike risk to aircraft flying in the region, as well as potentially attracting vulnerable birds to areas inhabited by non-native predators. As noted in Section 4.1, a high proportion of the rainfall that Maui receives each year falls on the northeast facing shores, leaving the central isthmus and southern coastal areas relatively dry. The annual average rainfall in the vicinity of the Infrastructure Regional Study Area (based on readings taken at Kahului Airport) amounts to approximately 11 to 13 inches. Therefore, the occasions that detention basins will contain standing water for long periods of time are anticipated to be minimal. At the request of DOT-AIR, DHHL will specify to prospective developers and other site users that design and landscaping at the DHHL Project Areas should not attract wildlife. Should wildlife be determined to present a potential hazard to aircraft, DHHL will take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. DHHL notes FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports.

Proper eradication will occur in compliance with HAR Chapter 11-26 prior to site clearing at the DHHL Project Areas.

Pūlehunui North Fauna

The fauna in this area is strongly dominated by non-native species. Of 3 mammals, 14 birds, and 10 insects observed, only one common indigenous bird, the ʻaukuʻu, was seen flying across the area at dusk toward an off-site destination. None of these species are of any special protected status or heightened conservation concern.

During the Draft EIS public review period, comments regarding the Hawaiian hoary bat were received from USFWS and DOFAW. These comments are noted above under **Pūlehunui South Fauna**. Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

ʻŌpeʻapeʻa or Hawaiian hoary bat. No Endangered Hawaiian hoary bats were detected during the survey of Pūlehunui North, and the nearly complete lack of trees or large shrubs in Pūlehunui North makes this area unlikely habitat for them. Nevertheless, to mitigate potential impacts to the ʻōpeʻapeʻa, contractors at the DHHL Project Areas will be instructed to avoid site clearing activities between June 1 through September 15. If site clearing must occur during this time, the DLNR Division of Forestry and Wildlife will be consulted before disturbance, removal or trimming of woody vegetation taller than 15 feet. Furthermore, the bats forage for insects as low as three feet to higher than 500 feet above the ground, and therefore barbed wire will not be used for fencing to mitigate harm to the bats caused by entanglement.

During the EISPN Public Review period, the DOH EPO wrote:

> The property may harbor vectors which may disperse to the surrounding areas when the site is cleared. In accordance with Title 11, HAR, Chapter 11-26, "Vector Control", the applicant shall ascertain the presence or absence of rodents on the property. Should the

presence of vectors be determined, the applicant shall eradicate the vectors prior to clearing the site.

Since the biological survey found signs indicating the presence of rodents on the property, proper eradication will occur in compliance with HAR Chapter 11-26 prior to site clearing.

~~The habitat in this area is not suitable for any of Hawai'i's native forest birds, water birds or seabirds. Nonetheless, there are native seabirds, the Endangered Hawaiian petrel (Pterodroma sandwichensis) and the Threatened Newell's shearwater (Puffinus newelli) that fly over these lowlands on the way to their burrows high in the mountains. These seabirds, and especially the fledglings, are attracted to bright lights in the evenings and early dawn hours and can become disoriented and crash. They are then vulnerable to injury, vehicle strikes and predators. To mitigate these impacts, prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting.~~

During the Draft EIS public review period, comments regarding the Blackburn's Sphinx moth were received from USFWS, the County of Maui Planning Department, and DOFAW. These comments are noted above under **Pūlehunui South Fauna**. Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

Blackburn's sphinx moth. While no Blackburn's sphinx moths, their eggs or larvae were found in Pūlehunui North, they are known from similar habitat about two miles northwest of this site. It is possible that they are present but dormant in chrysalis form in the soil beneath the potential tree tobacco host plants. These plants should be examined again ~~during~~ between November and April (the latter part of the wet season) to get a more definitive reading of their presence or absence. USFWS guidance will be followed and, if necessary, consultation with the USFWS will be sought prior to site clearing to address an appropriate plan for removal of existing tobacco plants. (The USFWS will be contacted for additional guidance, should moths or host plants over three feet in height be identified. DHHL notes that should no moths or host plants be identified, USFWS has indicated that measures should be taken to avoid attracting moths and prohibit tree tobacco from entering the property.)

During the Draft EIS public review period, comments regarding seabirds were received from USFWS and DOFAW. These comments are noted above under **Pūlehunui South Fauna**. Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

General Impacts to Seabirds. The biological survey noted that the habitat in this area is not suitable for any of Hawai'i's native forest birds, water birds or seabirds No seabirds were identified at Pulehunui South. However, seabirds that in the general vicinity may traverse the DHHL Project Areas at night during the breeding, nesting and fledging seasons (March 1 to December 15). Species of such seabirds may include the Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm-petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus newelli*) These birds are known to be disoriented by bright lights and strike tall structures and be injured and grounded where they become vulnerable to vehicle strikes and predators. Between September 15 and December 15, fledging young birds are particularly vulnerable to these threats. To mitigate

impacts to seabirds, prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting. DHHL will encourage prospective developer(s) to use outdoor lights that are fully shielded so the bulb can only be seen from below bulb height, and only used when necessary. DHHL will advise against nighttime construction between September 15 and December 15.

During the Draft EIS public review period, comments regarding wildlife attraction were received from DOFAW and DOT-AIR. These comments are noted above under Pūlehunui South Fauna. Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

Attraction of birds and other wildlife. DHHL acknowledges that standing water may create a potential wildlife attractant thereby presenting a bird-strike risk to aircraft flying in the region, as well as potentially attracting vulnerable birds to areas inhabited by non-native predators. As noted in Section 4.1, a high proportion of the rainfall that Maui receives each year falls on the northeast facing shores, leaving the central isthmus and southern coastal areas relatively dry. The annual average rainfall in the vicinity of the Infrastructure Regional Study Area (based on readings taken at Kahului Airport) amounts to approximately 11 to 13 inches, and as noted in Section 4.3.1 soils in the region are generally well-drained. Therefore, it is highly unlikely that detention basins will contain standing water in the event of a storm, and any standing water are anticipated to be minimal. At the request of DOT-AIR, DHHL will specify to prospective developers and other site users that design and landscaping at the DHHL Project Areas should not attract wildlife. Should wildlife be determined to present a potential hazard to aircraft, DHHL will take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. DHHL notes FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports.

As a result of these findings, and with consideration for the above guidance and recommendations, the Proposed Action is not expected to have a significant negative impact on the wildlife resources in this part of Maui.

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5.0 ASSESSMENT OF EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, preliminary potential impacts of Pūlehunui, and preliminary mitigation measures to minimize any impacts.

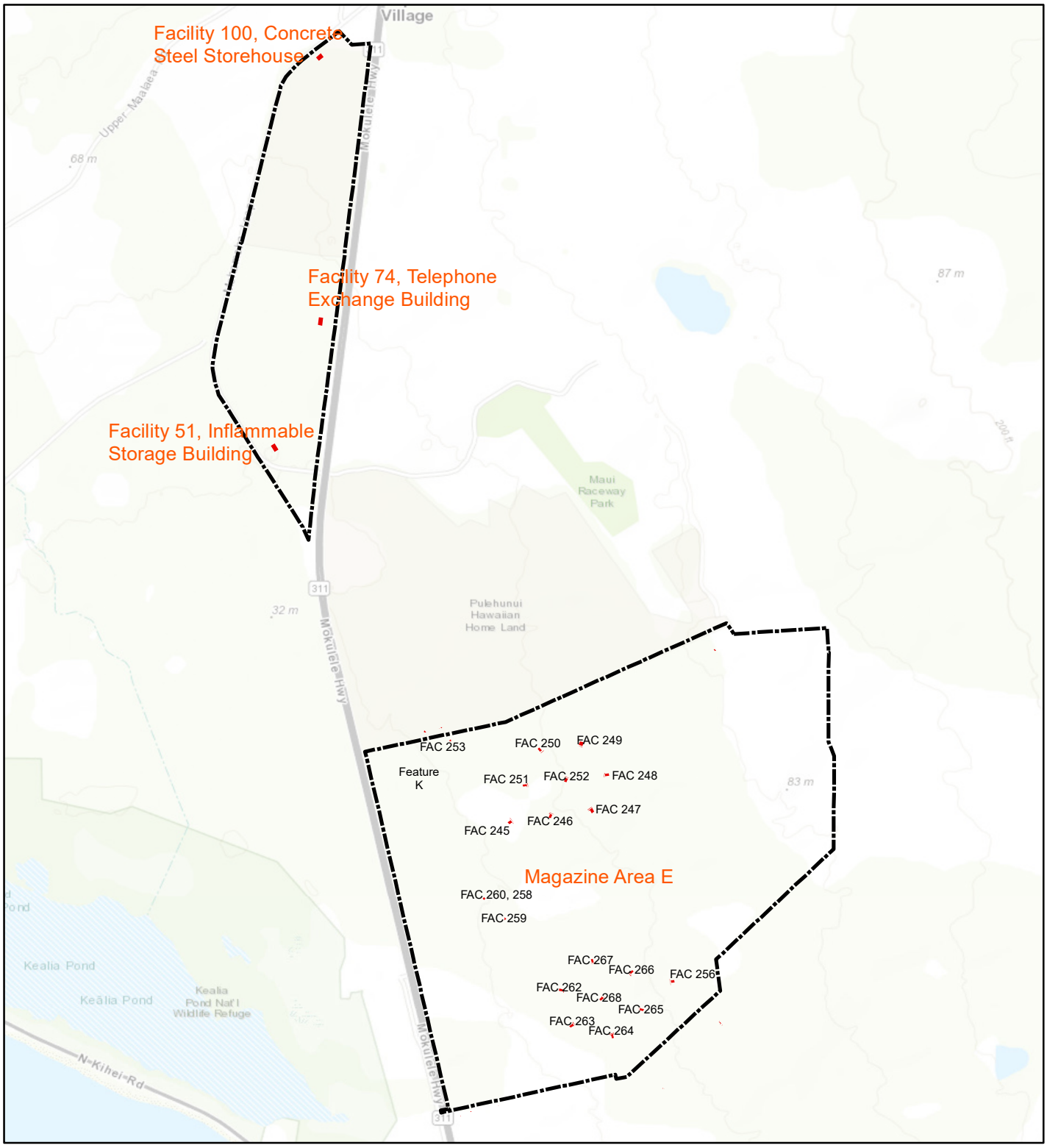
5.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

International Archaeological Research Institute Inc. conducted an Archaeological Inventory Survey of the former Naval Air Station (NAS) located in Puʻunēnē, Pūlehunui Ahupuaʻa, State Site 50-50-09-4164 (Tomonari-Tuggle et al. 2001). During the 2001 survey 3 sites were identified (State Site 50-50-09-4800 through State Site 50-80-09-4802). State Site 50-50-09-4800 consisted of seven features associated with the Plantation-Era and two complexes of corrals, fences, troughs associated with Post-World War II ranching. State Site 50-50-09-4801 consisted of a post-World War II cattle ranching site. State Site 50-50-09-4802 consisted of the Old Kīhei Railroad Bed (State Site 50-50-09-4802 and 5 features associated with the Haiku Ditch and Reservoir. The DHHL Project Areas included in this survey area. Figure 5-1 includes existing structures located within the DHHL Project Areas—all of which are associated with State Site 50-50-09-4164.

The NAS Puunene was given State (historic) Site number 4164 and was recorded in detail. Between 1940 and 1945, the NAS Puunene took shape. At its peak in 1945 there were over 300 permanent buildings and structures as well as 137 temporary buildings. There were six main areas: Main Base Area; the Bunker Area; Areas A and B; and Magazine Areas B, C, and E. NAS Puunene remained intact until mid-1947. In 2000, Tomonari-Tuggle et. al. conducted a large scale history of the former NAS Puunene.

The Main Base Area sat in between the runways and the western edge of the station. The main road was Central Avenue (presently Mokulele Highway) which ran from the sentry gates on the north and south ends of the station. County Boulevard (presently Mehameha Loop) shared the western boundary with a plantation rail line. The Main Base Area was the first to be developed between 1940 and 1941. This area included the buildings used for flight operations by VJ-3 and the Operations Department. Behind this complex was the permanent primary residential area. Near this area were the Operations Building and the main administrative area for the station. In 1940 the Inter-Islands Airways terminal building was constructed, including a civilian passenger terminal (Tomonari-Tuggle et. al. 2000).

The heart of the station was the Bunker Area which included the two main runways, control tower, taxiways and hangar complexes. This is also where the revetment complexes sat, which were the most prominent features of the Bunker Area. The revetment complexes housed everything from offices to shops to squadron ready rooms and washroom facilities.



DATE: 10/25/2018

LEGEND

DHHL Project Areas

Existing Buildings, SIHP 50-50-09-4164 (NAS Pu'unene)

Figure 5-1:
Existing Buildings

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)

0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Former uses:
Facility 100: Provision storage, and assigned to the Naval Air Station (NAS) Commissary Department, ca. 1945.
Facility 74: Bombproof telephone exchange building assigned to the Communications Department, constructed 1942.
Facility 51: Paint and oil storage, assigned to the Supply Department, constructed 1942.
Magazine Area E: Contained high explosive magazines, warhead magazines, and detonator and rocket magazines, constructed 1942.

Source: Department of Hawaiian Home Lands, 2018. Tomonari-Tuggle, 2000.

The Bunker Area also included three magazine areas, a CASU 4 hangar complex and the Hawaiian Airways depot (c. 1942) which replaced the original Inter-Island Airways terminal that the Navy eventually took over for their Operations Building. Housing Area A was mostly constructed in 1942 and in 1944, where 25 additional Quonset huts were built for housing. The housing area consisted of barracks, recreation buildings, BOQs and CPO quarters and mess facilities. There were also offices, storehouses and a complex with a swimming pool, softball field and an open recreation area.

Housing Area B was mostly assigned to CASU 4 and included housing, offices, mess facilities, storehouses, recreation buildings, shops and a fire station. On the western end of the area is where the VJ-3 were assigned.

Magazine Areas C and E were large complexes while Magazine Area B was smaller and contained small arms magazine and a pyrotechnic magazine. Magazine Area E was built in 1942 and Magazine Area C was built in 1944. Area E and C contained high-explosive magazines, warhead magazines, and detonator and rocket magazines. These areas were fenced in and manned by the Marines. NAS Puunene was the first Navy facility on Maui and continued to be the main facility on the island throughout the war. The facilities main mission was training pilots, deck crews and maintenance personnel for the war. Between 1941 and 1945, approximately 108 Navy squadrons rotated through NAS Puunene for training during the war. At any given time there were over 250 aircraft on station (Maui Military Museum 1996).

On March 15, 1943, NAS Maui was renamed NAS Puunene to avoid confusion with NAS Kahului (NASKA). It remained open until late 1946 when it was reduced to a skeletal crew at which point operations were transferred to NASKA. On December 1, 1946 NAS Puunene was disestablished but remained an outlying facility for NASKA. By mid-1947, NASKA was also closed and Maui Naval operations ended. Presumably, it was around the closure of Naval operations that the DHHL Project Areas began once more to be used for agricultural purposes.

Pūlehunui North

There are three buildings at Pūlehunui North which are associated with the NAS Puunene. As discussed above, NAS, the first Navy facility on Maui, was created between 1940 and 1945. In 1945, NAS contained over 300 permanent buildings and structures. The buildings at Pūlehunui North are from that time in history and are significant under State and Federal preservation guidelines. The buildings' locations are shown in Figure 5-1. In 2008 and 2011 Xamanek Researches, Inc. conducted a survey of the existing buildings to document their conditions. Findings of the survey are summarized below.

Facility 74 (Telephone Exchange Building) is located on Parcel 35. The bombproof concrete structure was built in 1942 and was assigned to the Communications Department of the NAS. The building measures 87 feet long x 29 feet wide x 40 feet high and is a two-story structure with four-inch thick walls. Its steel doors are gas-tight, one-quarter-inch thick and reinforced with

welded steel bracing. In a 2011 visit to Parcels 38 and 8, Facility 74 exhibited signs of vandalism but was in fair to good condition.

Facility 51 (Inflammable Storage Building) is also located on Parcel 35, at the south end of the parcel about one third of a mile from Facility 74. The concrete structure was built in 1942 and was used for paint and oil storage by the NAS Supply Department. The building measures 100 feet long x 40 feet wide x 13 feet high. A nine-foot wide loading dock runs along the front wall, and doors and windows are surrounded with steel frame. The walls are ventilated, and the roof is supported with concrete beams. In 2011, Facility 51 exhibited signs of vandalism but was in fair condition.

Facility 100 (Concrete Steel Storehouse) is located on Parcel 36. The concrete structure was built in the 1940s and was used as a military storehouse. The building measures 65 feet long x 50 feet wide x 20 feet high and has a flat roof with eight-inch thick walls. The interior is supported with concrete pillars, and the steel doors (measuring over 10 feet wide) are covered with steel lattice. There are rectangular slits in the doors. The back door connects to a concrete ramp. During a 2008 visit, Parcel 36 was in fair condition.

Pūlehunui South

There are 19 full or partial structures remaining at Pūlehunui South which are associated with the NAS Puunene, and one historical earthen depression. As discussed above, NAS contained over 300 permanent buildings and structures in 1945. The buildings at Pūlehunui South are from that time in history and may be significant under State and Federal preservation guidelines. The buildings' locations are shown in Figure 5-1. In 2018 'Āina Archaeology conducted a survey of the existing buildings at Pūlehunui South to document their conditions and also conducted a review of other AISs conducted in the area. Findings of the survey pertaining to Pūlehunui South are summarized below.

Features 262-268, located the farthest south within the parcel, are concrete bunkers that were used for high-explosive storage and are placed in a circular arrangement with Feature 268 at the center and the other six structures equidistant around it. The design of these bunkers is a concrete, arch-type Earth Covered Magazine with steel doors that are either rusted or have fallen off. All of these features are missing a majority of the former earth cover and the barrier walls at the entrance of each bunker have degraded such that they are beginning to or have already fallen. These features range from poor to excellent condition. Slightly east of these features, Feature 256 has the same bunker design, was used for a similar purpose, and remains in slightly better condition than the others. Signs of graffiti are present on the interior walls of some of these features.

Features 258-260 are a cluster of three bunkers previously used for fuze storage. Features 258 and 260 are a box-type Earth Covered Magazine and Feature 259 is an arch-type Earth Covered Magazine, all of which have retained partial or full earth cover over the bunkers. These features remain in fair to excellent condition.

Features 246-252, located near the center of the property's northern boundary, were previously used for high-explosive storage. These seven structures were also built in a circular arrangement with six bunkers equidistant from Feature 252 in the center. The design of the bunkers is an arch-type Earth Covered Magazine and most have retained full or partial earth cover. To the south west of these features, Feature 245 has the same bunker design and was used for a similar purpose. The condition of these bunkers ranges from fair to excellent.

In the northwest portion of the property near the intersection of Firebreak Road and Maui Veterans Highway are Feature 253 and Feature K. Feature 253 is a box-type Earth Covered Magazine formerly used as a fuze magazine. The feature has retained little earth cover but is in good to fair condition. Slightly to the west is Feature K, an earthen depression and the only feature which is not a structure. Conditions at Feature K are considered to be "remnant" and it was formerly used as an ordnance dump, and later as a sump when the property was cultivated with sugar.

Potential Impacts and Mitigation Measures

Department of Hawaiian Home Lands and its archaeological contractors will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be inadvertently encountered during the construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The archaeological contractor shall immediately contact SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Pūlehunui North

SHPD will be consulted regarding the existing AISs for Pūlehunui North, prior to the developer(s) applying for any permits for that property. For both Facility 51 and Facility 74, Xamanek recommended a preservation plan or, in the event that the buildings cannot be preserved, consultation with DLNR State Historic Preservation Division (SHPD). Precautionary monitoring for earthmoving activities was also recommended for excavation deeper than 1.5 feet, since some portions of the property were untested due to sugar cane occupying the area. For Facility 100, Xamanek recommended a preservation plan. In the event that the building cannot be preserved, Xamanek recommended Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER)-level data recovery. In the event that the building will be demolished, Xamanek recommended prior consultation with SHPD. Precautionary monitoring for excavation deeper than two feet was also recommended; while no intact cultural deposits were encountered, shellfish and coral were observed at the ground surface in some portions of Parcel 36. Therefore, cultural materials may be located below the plow zone. The buildings are associated with events that have made an important contribution to the broad patterns of our history (Criterion A) and have yielded or are likely to yield important information for research on prehistory or history (Criterion D). The buildings are eligible for the National Historic Places because they embody the distinctive characteristics of a type, period, or method of construction;

represent the work of a master; or possess high artistic value (Criterion C). All three buildings are constructed of concrete and are in fair or better condition, and therefore should be considered for future use. Previous challenges to these historical resources include trespassing, vandalism such as graffiti, and illegal occupancy. However, structurally-speaking, all three Facilities were in fair condition or better at the time of the survey. If secured and maintained, the buildings are an asset to the property and may be re-purposed and integrated into future Site uses, potentially as a hurricane shelter or other emergency use, due to the high quality of construction and low flooding concern.

Pūlehunui South

ʻĀina Archaeology is assisting DHHL in initiating HRS Chapter 6E consultation for Pūlehunui South. Recommended mitigations will be provided for each feature at Pūlehunui South, based on significance criteria, building condition, and integrity. Former uses will be taken into consideration as plans for the DHHL Project Areas progress. DHHL's environmental consultant is aware of the former uses at Feature K and the Department of Health will be consulted prior to any ground disturbance in the vicinity of Feature K. Refer to Section 5.6.

Prior to development of each phase of the Proposed Action, additional historical research, consultation, and/or archaeological inventory surveys may need to be conducted in order process grading and building permits.

5.2 CULTURAL RESOURCES

ʻĀina Archaeology prepared a Cultural Impact Assessment (CIA) to identify cultural resources and history at the DHHL Project Areas, identify potential impacts, and recommend mitigation measures. In addition to historical sources and research, the CIA was informed by in-depth consultation (Mr. Vernon Kalanikau, Poʻo for Kula Makai for Aha Moku o Maui, Inc.) and the results of an online DHHL Beneficiary survey, for which 21 Beneficiaries provided manaʻo about the ahupuaʻa. Appendix M includes the revised CIA.

Traditional moʻolelo (stories), wahi inoa (place names), historic maps, and accounts given to the boundary commission suggest that while inland Pūlehunui appears to have been fairly dry and barren with regard to traditional agriculture and agricultural practices, the lands of Pūlehunui along the central Maui isthmus were well traveled. The position of these lands between the agriculturally prosperous areas of Na Wai ʻEhā and upland Kula likely encouraged its use as a transit area, both between the two agricultural areas and as a route to coastal resources.

The central isthmus in general is also said to be an area inhabited by ʻaumakua (guardian spirits) and traversed by huakaʻi pō (nightmarchers) on the nights that honor Kane, Ku, Lono, or Kanaloa. This general area has also specifically been noted as the place in which the souls of those who lost their lives in the Battle of Kakanilua would dwell.

While small-scale traditional cultivation of sweet potato and other dryland crops may have been possible within the central isthmus, no known traditional recollection or archaeological site remains confirm the practice prior to the arrival of Western vessels in the archipelago.

5.2.1 *Pūlehunui Ahupuaʻa and Moʻolelo*

Pūlehunui Ahupuaʻa is a traditional land division on the west flank of Haleakalā, and includes a portion of the southwest facing shoreline that is located within the traditional moku of Kula. Geographically, Pūlehunui Ahupuaʻa extends from the puʻu of Kilohana at approximately 9,520 feet amsl to the shoreline boundary that extends from Kīhei to the north and Kalae Pohaku to the south. While the mauka (mountain region) boundaries were undisputed and clearly defined by sections of Kolaloa Gulch, ~~Hapapa~~ Hāpapa Gulch, and Waiakoa Gulch to the south, along with Pūlehu Gulch to the north, the boundary between the ahupuaʻa Waikapū and Pūlehunui on the central isthmus have been disputed in the past. Refer to Appendix M for a detailed history of this boundary.

While some of the meanings of the place names of Pūlehunui appear to have been lost to antiquity, regional place names that are known make references to plant resources such as the hame tree in Kamehameiki and Kamehamenui, the castor oil plan of kāliāli in the name of the kahawai of Kalialinui, along with once possible reference to cultivation in the name of Kaaoaoiki, which has been noted as a garden patch are also present in the wahi inoa of the waena and mauka regions. In the mid-elevations, or waena area, we see possible references to birds and bird catching near the bordering gulches in names such as Hāpapa and Ōmaʻopio. The pūʻali region is noted as the place in which the waters of Haleakalā and the West Maui Mountains converge with names like Kailinawai, Kaʻōpala, and Waiahono, as well as an area of transit between the two lands where travelers came to rest at Pohakiʻikiʻi and could possibly find water at Kahuakapiele. Along the coastline we see names like Keālia where salt is known to have been plentiful and a reference to the fishery of Kumuahane. Finally, the plain of Kamaʻomaʻo is a wahi pana that is spoken of in stories of ʻaumakua (ancestral animal spirits) and recollections of battles between Maui and Hawaiʻi Island chiefs. Some of the names of the waterways and land areas within and adjacent to Pūlehunui Ahupuaʻa may speak to the battles between the warrior of the two island chiefs as well as that of the ʻaumakua in such names as Waiakoa, Alakoa, Kealiʻi, and Puʻu Pahu. The moʻolelo (traditional knowledge) of Pūlehunui revolves around the elemental characteristics of the ʻāina (land) where the places of this ʻāina are noted in name chants and the winds and rains of the region are recounted in legends and poems. The winds of Maui are recounted in the Legend of Kuapakaa of Molokaʻi as retold by Fornander, where Kuapakaa prepares to meet Keawenuiaumi in search of his father Pakaa, the kahili bearer and backbone of Keaweaumi. The chiefs accompanying Keawenuiaumi and Keawenuiaumi himself turn away from Pakaa upon finding him and Pakaa tells Kuapakaa to call out for the winds of Maui and Molokaʻi to prevent them from leaving, ultimately releasing the winds from the wind calabash Laamaomao. Included in the winds recited in the oli (chant) is the wind name of moku of Kula which includes Pūlehunui.

Along with the winds, the kūpuna (ancestors and elders) also had a highly nuanced understanding of the different rains of their onehānau (native-born place). While there rains names specific to Pūlehunui are yet to be found, through extensive research of Hawaiian language sources have compiled the moʻolelo which speaks of the rains of Kula Moku and identified a rain of Waiheʻe that travels through Pūlehu. The smoke of Kula is also referenced in an ʻōlelo noʻeau (Hawaiian proverb). ʻŌlelo noʻeau, were initially passed down through oral tradition and later collected and published in Hawaiian language newspapers and other scholarly sources. These proverbs often have both a literal and metaphorical meaning (called kaona), which is given where applicable. ʻŌlelo noʻeau about geography can help us to understand natural phenomenon, land use, and the history of a place. References to smoke at Kula might suggest that fire was a common occurrence on the plains of Kula. Alternatively, the references to smoke could also metaphorically refer to low clouds or clouds of dust that may be thrown up by harsh winds (kōkōloliʻi [a thick black cloud], kokololio [sharp, swift wind gust], kokolowini [sharp, penetrating, of wind, gust]. Refer to Appendix M for a more detailed discussion and passages from original cultural works.

5.2.2 *Nineteenth Century Changes, Māhele, and Kuleana Lands*

The nineteenth century brought commercial, demographic, social, and religious changes to the region. In 1819, the first whaling ships arrived in Hawaiian waters and the bays of Maui would soon become popular ports of call. Following the establishment of the Kalepolepo Store around 1849 on the shores of the fishpond of Kaonoulu-kai, now known by its ancient name of Kōʻieʻie, nearby Kalepolepo became a center of commerce for the district of Kula during the heyday of the whaling trade and Irish Potato boom. The new arrivals and concepts of commercial enterprise would begin an economic shift from traditional subsistence to commerce and fee simple land tenure.

In The Great Māhele of 1848, King Kamehameha III and 245 aliʻi (royalty) and konohiki (landlord) came together to divide the lands of the kingdom into three classifications. The Crown and the aliʻi received land titles and awards for both whole ahupuaʻa and individual parcels within ahupuaʻa which were formally granted in 1850. Lands given to aliʻi and konohiki were referred to as Konohiki Lands. Lands retained by the King as Crown Lands. The death of Kamehameha IV created confusion regarding inheritance of Crown lands and whether or not it followed the family line or the throne. Under the confirmatory Act of June 7th, 1848, the Supreme Court determined inheritance to be limited to the successors to the throne, wearers of the crown, and that each successive possessor may regulate and dispose of the same according to his will and pleasure as private property, in the manner as was done by Kamehameha III. The third classification of lands was Government lands. Refer to Appendix M. In 1850, most chiefs ceded a third of their lands to Kamehameha III to obtain an allodial title for the remainder. The majority of these lands became Government lands and paved the way for land sales to foreigners when the legislature granted resident aliens the right to acquire fee simple land rights. The ahupuaʻa of Pūlehunui was received by aliʻi Emelia Keaweamahi and later formalized through Land Commission Award (LCA) 5230. By 1865, the lands had passed to W.L. Moehonua who served as Minister of the Interior for the Kingdom of Hawaiʻi and governor of Maui, Molokaʻi, and Lānaʻi at that time. Upon his passing in 1878, the LCA of Keaweamahi was split into two parcels, mauka (sold to Charles Alexander) and

makai (sold to Henry Cornwell). Sugar cane would become the base for commercial agriculture ventures in lower Pūlehunui, while cattle ranching would take hold in the mid-elevations and mauka regions. Water resource development and the construction of irrigation infrastructure would ultimately reshape the landscape of the central isthmus including the DHHL Project Areas.

5.2.3 *Plantation and Military History*

The Kihei Plantation Company was established in 1899 and operated for about 10 years, establishing the infrastructure needed for the cultivation and transport of sugar in the areas around Kīhei. In 1908, Hawaiian Commercial and Sugar Company (HC&S) purchased and consolidated those lands and operations into sugar operations across the central isthmus. Following the end of World War I, the growing industry on the central isthmus led to an airport at Puʻunēnē to accommodate the growth of commercial services. In the 1930s, the site of a new airport (Maui Airport) within lower Pūlehunui was approved by the U.S. Army. In 1940 the U.S. Navy began to control air traffic at Maui Airport and in 1941, following the attack on Pearl Harbor, the Navy began to use Maui Airport as the base for naval aircraft personnel and equipment, and expand the facility which would become Naval Air Station (NAS) Puunene. By 1945 the station personnel count had grown to 565 officers, 2,795 enlisted personnel, seven Navy nurses, eight officers with Women Accepted for Volunteer Emergency Service (WAVE), and 92 WAVE enlisted personnel along with 271 total onboard aircraft. Following the surrender of Japan in August 1945, facilities deemed essential to the operation of nearby NAS Kahului were removed from NAS Puunene and in 1946, residents of Maui were allowed to rent residential structures in Housing Area "A" closest to Airport Village. By the end of 1948, NAS at Kahului had been chosen to replace NAS Puunene for future civilian flight operations and in December of that same year, the lands NAS Puunene were transferred from the United States back to the Territory of Hawaiʻi by quitclaim deed. Shortly after the transfer of lands back to the Territory of Hawaiʻi, the County of Maui established a network of Civil Defense fallout shelters, with six (MO5 A-F) located at the former site of NAS Puunene. By the mid-1970, commercial sugar cultivation had resumed to full capacity and, with the exception of the immediate area of the landing strip which was sanctioned for drag racing, would reclaim the formerly built out lands surrounding the airstrip for cultivation and either demolish or plant around the former Navy facilities. The lands of the current project area would remain under commercial sugar cultivation until December 2016 when, after 146 years of operation, HC&S ended sugar operations on Maui and closed the sugar mill. The lands of the current project area currently consist of the former sugar cane fields of the HC&S sugar plantation and the remaining facilities of NAS Puunene.

The Maui Humane Society animal shelter is now situated on the northernmost portion of the old air station. See Section 5.1 for a summary of existing buildings in the DHHL Project Areas. The former airport runways and surrounding areas are now part of the 220-acre Pulehunui Motorsports Park which is under the management of the County of Maui.

Potential Impacts and Mitigation Measures

To assess potential cultural impacts, the CIA considered traditional use and access to resources from the mountains to ocean, or mauka (mountain region) to makai (coastal region). The area of potential effect was considered to be the DHHL Project Areas. For the purposes of the CIA, the region of influence and study was the geographic area encompassed by the known traditional boundaries of the ahupua'a of Pūlehunui.

No physical alteration of cultural resources, practices or beliefs are anticipated within the DHHL Project Areas. The CIA (Appendix M) identified potential concerns regarding dust, runoff, and sedimentation of the southern shorelines of Kīhei, or Kīheipuko'a. The CIA determined that these shores have provided for the families of Kihei for generations, and concerns regarding nearshore reef and marine resources were expressed. Two drainage features at Pūlehunui South may be of concern—Keahuaiwi Gulch is located to the south of Pūlehunui South and drains into the Keālia wetland and Kīhei, and an unnamed gulch runs through the center of Pūlehunui South and drains into Keālia wetland. Concerns regarding maintenance of the gulches in terms of ensuring that the gulch bottoms are free of both naturally deposited debris (tree limbs) and man-made debris (refuse and green waste) were also raised as this type of debris have been known to end up in the near shore waters following a major flood event. Finally, concerns regarding the potential use of off-site water sources were raised by two reviewers during the public comment period for the EIS Preparation Notice (EISPN). The lands of the central isthmus were likely primarily grasslands; general aridity and seasonality of water availability appears to have precluded intensive traditional settlement and continuous traditional agriculture. The transformation of the central isthmus into arable lands for large scale agriculture was dependent on the development of both the East Maui Irrigation system, which diverted surface water from the east Maui watershed, and the Wailuku Agribusiness system, which diverted surface water from the Na Wai 'Ehā watershed. A couple of EISPN comments included questions with regard to pulling water resources from the 'Iao Aquifer and surface water sources from the other streams of Na Wai 'Ehā, along with reservations about water allocation for the Proposed Action of the EIS, and how that may affect South Maui.

During the Draft EIS public review period, PSD wrote that the Draft EIS was "missing discussion on potential Gathering Rights Concerns at the affected property."

The State Office of Planning wrote:

> I. […] The LUC is obligated under Article XII, Section 7 of the Hawaii State Constitution to protect the reasonable exercise of customarily and traditionally exercised native Hawaiian rights. To fulfill its duty to preserve and protect customary and traditional native Hawaiian rights to the extent feasible, pursuant to the Hawaii Supreme Court's holding in Ka Paakai O Ka Aina v. Land Use Commission, State of Hawaii, specific findings are required as to the following:

a. The identity and scope of valued cultural, historical, or natural resources in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area.
b. The extent to which those resources - including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action; and
c. The feasible action, if any, to be taken by the petitioner to reasonably protect native Hawaiian rights if they are found to exist.

Section 5.1 of the Draft EIS identifies several historic sites on DHHL's lands in Pulehunui, discusses potential impacts, and proposes mitigation measures; this is consistent with the Ka Paakai requirements. The Draft EIS also discusses the cultural resources and history in the DHHL project areas in Section 5.2. However, the Draft EIS fails to make specific findings regarding the exercise of traditional and customary native Hawaiian rights in these areas as required under the Ka Paakai decision. Section 6.0 and Section 7 .0 in the Cultural Impact Assessment (Appendix M) provide more detail, but still does constitute a specific statement identifying any traditional and customary native Hawaiian rights and their scope in the area, assessing the potential impact of the project, and proposing mitigation measures.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

In response to PSD's and the State Office of Planning's comments, several revisions were made to Sections 6.0 and 7.0 of the revised Cultural Impact Assessment (Appendix M) including the following language:

While the biological resources survey completed for the proposed project identified two indigenous native plants, ʻuhaloa (Waltheria indica) and ʻilima, within the project footprint (Hobdy 2011:4), there were no on-going traditional and customary practices within the current project area that are reliant on gathering these plants from within the proposed project footprint. Additionally, while the central isthmus, including the section of Pūlehunui Ahupuaʻa where the proposed project is located, was once known for trails between the mauka reaches and the shoreline, as well as, transit between Waikapū and upland Kula, contemporary pedestrian access across the central isthmus via foot trails were not mentioned by respondents to the DHHL beneficiary survey, participants in Cultural Impact Assessment studies completed for projects directly adjacent to the current project area, or during consultation with Kula Makai Moku representative Mr. Vernon Kalinikau. Given the above, there are no anticipated impacts or adverse effects to either specific traditional cultural resources that are related to on-going traditional and customary practices within the proposed footprint of the current project area, or the ability to carry-out traditional and customary practices via access through the current project area.

The CIA recommended cultural mitigations with the goal of honoring the traditional landscape while protecting cultural resources. These recommendations are summarized below and DHHL will employ these strategies to the extent practicable:

- Use traditional place names when possible in DHHL Project Area design, signage, and related materials.
- Minimize coastal resource degradation that may result from flooding (the PER will assist greatly in this effort). Monitor and record rain and weather patterns which may assist with future land use decisions.
- Increase awareness of the connectivity between the mauka and makai weather patterns of Kula Moku.
- As a part of farm planning, the use of appropriate native ground cover in non-cultivated areas should be considered to minimize dust pollution that may result from modern agricultural practices and carried by the winds through the central valley.
- Foster and encourage a mālama ʻāina land stewardship ethic that extends beyond the physical boundaries of DHHL's lands. Strategies to accomplish this could include BMP monitoring/enforcement, continued agency consultation, and environmental outreach/education programs where possible. Prospective developers or tenants at Pūlehunui North who embrace this land ethic should be favorably considered from a cultural standpoint.
- Prior to the initiation of land development, whether residential, business, or agriculture, appropriate blessings should be carried out as the central isthmus and lower region of Pūlehunui is known as a place in which the spirits reside. As water from off-site resources continues to be investigated as a possible water source, the CIA recommended continued consultation with Native Hawaiian communities and other stakeholders that may hold appurtenant and riparian rights within the originating watershed(s).

In response to the aforementioned CIA revisions, two cultural mitigations were added and are summarized below.

- Embrace the re-introduction and cultivation of suitable native plants, in support of laʻau lapaʻau (traditional Hawaiian medicine) practices and traditional crafts.
- Consider traditional trail systems during lot design. The DHHL Project Areas have not been used for traditional trail access within the last century; this mitigation embraces a revival of trail system access to the shoreline, as well as between Waikapū and upland Kula.

To address potential concerns related to drainage, it is noted that with the proposed drainage improvements for Pūlehunui South the total onsite runoff from that property will be reduced by 96 percent compared to existing conditions . The remaining flow in the unnamed gulch (which is generated from almost 2,000 acres outside the Infrastructure Regional Study Area) will flow

through the existing gulch and directed to existing culverts at Maui Veterans Highway. Refer to Section 5.8.4 for a full discussion of existing and proposed drainage conditions.

5.3 ROADWAYS AND TRAFFIC

Austin, Tsutsumi & Associates, Inc. (ATA) prepared a Traffic Impact Analysis Report (TIAR) to evaluate the potential traffic impacts resulting from key regional developments at Pūlehunui. The TIAR includes an analysis of existing regional traffic conditions and projected future conditions both without and with the development of the DHHL Project Areas. Key conclusions of the TIAR are summarized below. Appendix H contains the complete TIAR.

Existing Conditions –
The following are brief descriptions of the existing roadways studied within the vicinity of the DHHL Project Areas (see also Figure 5-2):

Maui Veterans Highway (formerly Mokulele Highway) is a regional, four-lane, two-way divided State highway facility that runs in the north-south direction. This roadway begins to the north transitioning from Puʻunēnē Avenue into Maui Veterans Highway at its intersection with Hoʻokele Street and terminates to the south at its intersection with North Kīhei Road, where it continues further south as Piʻilani Highway. The posted speed limit in the vicinity of the DHHL Project Areas is 45 miles per hour (mph).

Nākiʻi Road is a two-lane, two-way roadway that provides access to the Central Maui Baseyard from Maui Veterans Highway. The posted speed limit along this roadway is 15 mph.

Kamaʻāina Road is a roadway that runs in the east-west direction. Kamaʻāina Road begins to the west at its intersection with Maui Veterans Highway and terminates to the east at an intersection with South Firebreak Road. Kamaʻāina Road primarily services traffic generated by the Hawaiian Cement Baseyard located further south of the roadway. Kamaʻāina Road is currently unstriped but was observed to provide enough width to service two-way traffic.

Mehameha Loop is a two-lane, two-way private roadway that generally runs parallel and to the west of Maui Veterans Highway. This roadway intersects with Maui Veterans Highway across from Kamaʻāina Road, forming the west leg of the signalized intersection (Mehameha Loop North) at the northern end. This roadway traverses south, providing access to the Maui Humane Society and is gated further south for private use. Mehameha Loop ultimately terminates across from the Pulehunui Motorsports Park Access Road forming the west leg of the unsignalized intersection (Mehameha Loop South) at the southern end. The roadway is gated just west of the unsignalized intersection across Mehameha Loop South. The posted speed limit along this roadway is 15 mph.

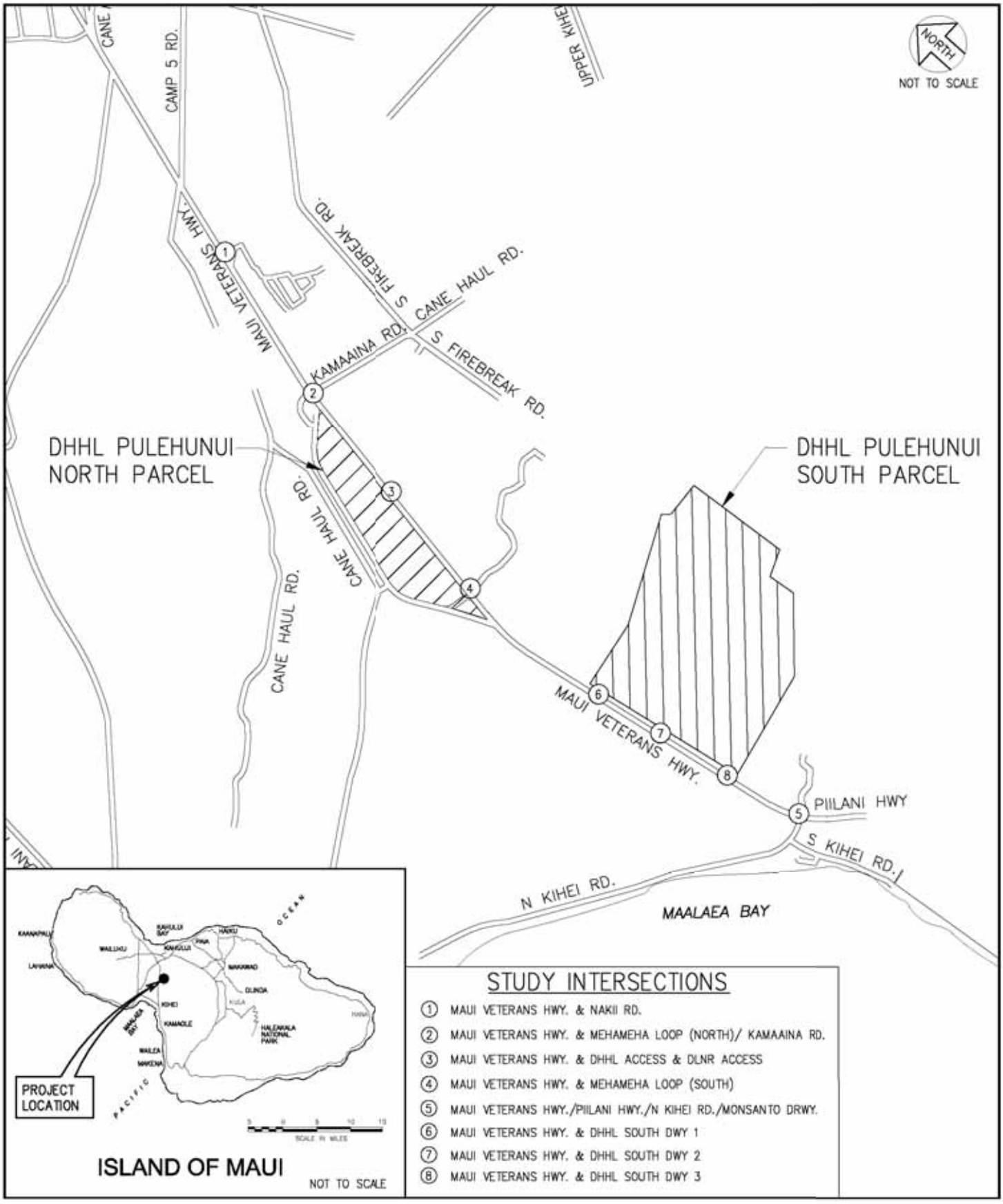


Figure 5-2:
Regional Roadways

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Homelands — Island of Maui

North

NOT TO SCALE

PBR HAWAII & ASSOCIATES, INC.

Source: Austin, Tsutsumi & Associates, Inc., 2018.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Pi'ilani Highway is generally a four-lane, two-way State highway facility that runs in the north-south direction. This roadway begins to the north transitioning from Maui Veterans Highway at its intersection with North Kīhei Road and terminates to the south in Wailea, where it transitions into Wailea Ike Drive. The posted speed limit along this roadway is 45 mph.

North Kīhei Road is a two-lane, two-way State roadway that connects Honoapi'ilani Highway in Mā'alaea to Maui Veterans Highway/Pi'ilani Highway in Kīhei. The posted speed limit along this roadway is 30 mph.

South Firebreak Road is a local road that facilitates transport for Hawaiian Cement trucks in the north-south direction. South Firebreak Road begins to the south near the Hawaiian Cement Baseyard and travels north to Pūlehu Road where it transitions into North Firebreak Road before it terminates about 1.25 miles north of Haleakalā Highway. Various intersection approaches along South Firebreak Road are gated and previously provided access to HC&S sugar cane fields. In the vicinity of the DHHL Project Areas, the roadway is currently unstriped but was observed to provide enough width to service two-way traffic.

Pulehunui Motorsports Park Access Road is an unstriped roadway that provides access to the Pulehunui Motorsports Park and Army National Guard Armory. The roadway begins to the west at its connection with Mehameha Loop (South) near the Maui Veterans Highway/Mehameha Loop (South) intersection and terminates as a dead end at the Pulehunui Motorsports Park. There is no posted speed limit along this roadway.

Table 5-1: LOS Summary of Existing Intersection Conditions

	Existing Overall LOS[2] Conditions		
Intersection	Morning Peak Hour (AM)	Afternoon Peak Hour (PM)	Weekend Peak Hour (WE)
Maui Veterans Hwy & Nāki'i Rd	A	A	A
Maui Veterans Hwy & Mehameha Lp North/ Kama'āina Rd	A	A	A
Maui Veterans Hwy & Mehameha Lp South[3]	-	-	-
Pi'ilani Hwy/Maui Veterans Hwy & N Kīhei Rd/Monsanto Drwy	C	C	B

Source: Austin, Tsutsumi & Associates, Inc. *Revised Traffic Impact Analysis Report DHHL North and South Parcels.* ~~August 2018~~ March 2019a.

The weekday hourly traffic volume data utilized in the TIAR were collected on Thursday, September 10 and Tuesday, September 15, 2015 as well as Thursday, January 19, 2017. The

[2] Level of Service [LOS] is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual (HCM), 6th Edition, methods for calculating volume to capacity ratios, delays and corresponding Levels of Service were utilized in this study.

[3] Access to the intersection of Maui Veterans Highway and Mehameha Loop is restricted by A&B and, therefore, experiences little to no traffic under existing conditions

weekend hourly traffic volume data was collected on Saturday, August 12, 2017. Weekday PM traffic volumes taken in 2015 were adjusted to generally meet 2017 conditions.

Based on the traffic count data, the AM, PM and WE peak hours of traffic were determined to occur between 7:15 AM to 8:15 AM, 3:30 PM to 4:30 PM and 12:00 PM to 1:00 PM, respectively.

No significant delays or queuing were observed at the study intersections. All intersection movements generally operated adequately at Level of Service (LOS) D or better. However, various left-turn and minor street movements operated at LOS E/F during the peak hours of traffic due to low movement volumes of 10 or fewer vehicles per peak hour.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the County of Maui Department of Public Works wrote: "We reviewed the subject application and have no comments at this time."

The County of Maui Department of Transportation wrote: "Thank you for the opportunity to comment on this project. We have no comments to make regarding this project at this time."

The County of Maui Planning Department wrote:

> 8. We note there was a 'no comment' letter from the Maui Department of Transportation. Please continue to coordinate with them on the possible creation of a bus stop(s) near the project site to serve area employees, as well as potential lessees, their customers and homesteaders.
>
> 9. We note that ATA is also the traffic engineer for the DLNR project. This project's Traffic Impact Assessment Report includes discussion of two (2) new traffic signals to be located at; 1) Maui Veteran's Highway/DHHL access/DLNR area, 2) Maui Veteran's Highway/Mehameha Loop and 3) Maui Veteran's Highway/Mehameha Loop/Maui Raceway Park. This would make for many stops within this area, along a State Highway. Has this been discussed with the State Department of Transportation? We highly encourage the traffic engineer and the Applicant to consider other options, perhaps with less stop-and-go. We note that on page 46, it says that roundabouts and two-way stops were not considered because it would create lengthy delays and capacity issues; however, we believe that it should be studied and considered as an alternative to new traffic signals.
>
> 10. We did not see that the Maui Metropolitan Planning Organization (MPO) was consulted with regarding the long-term transportation plan for the region and we highly encourage that you consult with them prior to publication of the Final EIS.

Refer to Appendix B-2 for a copy of these comments and DHHL's response.

Refer to Appendix **H** for the TIAR which has been revised to address traffic-related comments, including two new appendices (TIAR Appendices G and H). TIAR Appendix H includes a LOS and capacity analysis for double-lane roundabouts under the Base Year 2038 scenario.

The State of Hawai'i Department of Transportation Highways Division wrote:

> The Transportation Impact Analysis Report (TIAR) dated October 24, 2018 is not acceptable for the following reasons:
>
> 1. A preliminary meeting on October 18, 2018 was coordinated between the DHHL, Austin, Tsutsumi & Associates, Inc. and the DOT staff. It was explained to the DHHL that the DOT's Federal Aid Highways 2035 Transportation Plan for the District of Maui dated July 2014 (hereinafter referred to as "HDOT 2035 Transportation Plan") to widen Maui Veterans Highway from a 4-lane into a 6-lane configuration as mentioned in the TIAR, is not programmed nor funded to date; therefore, the TIAR should be revised to delete this assumption. Additionally:
>
>   i. The Figure 5.3 and 5.5 in the TIAR should be revised to depict future configuration to remain as four-lanes; Without Background Mitigation and to include as a four-lane configuration; With Project/With Mitigation.
>
>   ii. Table 5.8 of the TIAR should be revised to reflect Base Year Conditions "Without" Background Mitigation Conditions and Future Year 2038 Conditions to be consistent with the change.
>
>   iii. Should the HDOT 2035 Transportation Plan on Maui Veterans Highway as mentioned in the DEIS and the TIAR be deferred or not implemented, all necessary mitigations may be the responsibility of the Master Plan project.
>
>   iv. The revised TIAR should consider pro-rata shares identified for each of the four agencies and its proposed land uses.
>
> 2. We note that an earlier pre-consultation joint meeting with emphasis on the DLNR Business Park was also held on June 5, 2017 with DHHL and the three agencies. Three proposed access points on Maui Veterans Highway were presented and agreed upon for the DLNR Business Park and DHHL Pulehunui North, which was consistent with the DLNR's DEIS and its TIAR dated March 20 I 8 (reference attached letter STP 8.2468).
>
> 3. Petitioner shall fund and implement transportation improvements, mitigation measures, and pro-rata contributions that will alleviate the impacts generated by the project as recommended by the revised TIAR and by any required updates; and as accepted by the DOT.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

Discussion regarding the HDOT 2035 Transportation Plan is has been revised to clarify that the TIAR does not assume its implementation by 2038. Refer to Appendix H for the TIAR which has been revised to address traffic-related comments, including two new appendices (TIAR Appendices G and H). TIAR Appendix G analyzes a Base Year 2038 Without Widening scenario as requested by DOT. As noted below, DHHL will coordinate with HDOT on its fair share of improvements.

Pūlehunui North is approximately 184.4 acres of vacant land. For the purposes of the traffic analysis, the property was assumed to include:

- 80 acres of industrial space
- 16 acres of commercial space
- 5 acres for a possible hotel
- 40 acres for a cultural center/visitor attraction space
- 43.4 acres for roads, easements and open space.

There are two existing accesses to Pūlehunui North via Mehameha Loop (North)/ Kamaʻāina Road and Mehameha Loop (South)/Pulehunui Motorsports Park Access. A new third access is proposed along Maui Veterans Highway, via a new signalized 4-legged intersection between Mehameha Loop (North)/ Kamaʻāina Road and Mehameha Loop (South)/Pulehunui Motorsports Park Access. This new third access will provide direct access to both Pūlehunui North and the future DLNR Industrial and Business Park development across Maui Veterans Highway.

Pūlehunui South is approximately 646 acres of vacant land. For the purposes of the traffic analysis, uses at Pūlehunui South were assumed to include the following:

- 173 acres maintained for agricultural use
- 238 acres for Agricultural homesteads, with an estimated 110 homesteads for DHHL beneficiaries
- 33 acres for an education facility
- 18 acres for a cultural and arts center
- 105 acres for industrial/agriculture processing space
- 79 acres for roads, easements and open space

Access to this development would occur via three existing accesses from Maui Veterans Highway fronting the DHHL South Parcel site. Buildout of the DHHL Project Areas is anticipated to occur by Year 2035, but for purposes of the traffic analysis, a forecast Year 2038 was used to analyze the full impacts of Pūlehunui Regional Subdivision, which includes the DHHL Project Areas, DLNR Industrial and Business Park, Maui Regional Public Safety Complex (MRPSC) and Puunene Heavy Industrial Subdivision.

Base Year 2038

Projections for Base Year 2038 traffic included increases generated by a 2.1 percent annual growth rate along Maui Veterans Highway and numerous developments forecast to be completed within the vicinity of the DHHL Project Areas. These nearby developments include the DLNR Industrial and Business Park, Puunene Heavy Industrial Subdivision, Maui Regional Public Safety Complex (MRPSC), Central Maui Baseyard Expansion, Piilani Promenade, Maui Bay Villas (formerly Maui Lu), Kihei High School, Maui Business Park Phase II, Kihei Residential, Kaiwahine Village, Kenolio Apartments, Maui Research & Technology Park, Krausz Downtown Kihei, Liloa Village, South Maui Community Park, Alahele Subdivision.

Various widening improvements are proposed at the Maui Veterans Highway/Mehameha Loop (North)/ Kamaʻāina Road intersection as part of the development of the Puunene Heavy Industrial Subdivision. The State of Hawaii Department of Transportation's (HDOT DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) dated July 2014 (hereinafter referred to as "HDOT DOT 2035 Transportation Plan") estimated that by the year 2035, traffic volumes on Maui Veterans Highway will increase by over 80 percent due to nearby population and land development growth in the area. To increase highway capacity and accommodate this traffic growth, the HDOT DOT 2035 Transportation Plan conceptually identified the widening of Maui Veterans Highway to construct two additional travel lanes on Maui Veterans Highway from Kuihelani Highway in Kahului to Piʻilani Highway in Kīhei as a potential need by Year 2035. It should be noted that this Maui Veterans Highway Widening improvement is currently not a DOT-funded or ~~approved project.~~ programmed project. ~~and is only an identified roadway capacity solution for long range planning purposes.~~ Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038.

~~The traffic analysis does not assume the Maui Veterans Highway Widening improvement project will be implemented by Year 2038.~~ For purposes of the traffic analysis, widening improvements along Maui Veterans Highway were recommended at each study intersection based on LOS analysis for both Base Year and Future Year scenarios.

By Base Year 2038 without the DHHL Project Areas, traffic in the study area is expected to increase due to trips generated by nearby developments and growth along Maui Veterans Highway. As a result of the increase in traffic volumes, several roadway improvements are recommended to be completed by Base Year 2038.

The signalization of the new Maui Veterans Highway/DLNR Access intersection and Maui Veterans Highway/Mehameha Loop South intersection is recommended as the most feasible alternative at these intersections. Based on the mainline through volume along Maui Veterans Highway and turning movement traffic accessing the side streets, a signal would be warranted at each of these intersections. Traffic control that includes roundabouts, ~~and~~ full movement two-

way stop control, and right-in, right-out access was not considered feasible at these intersections since it would create lengthy delays and capacity issues. Refer to Appendix H for the revised TIAR.

The coordination of traffic signals at Maui Veterans Highway/Mehameha Loop (North)/ Kamaʻāina Road and Maui Veterans Highway/DHHL North Access/DLNR Access intersections should be considered if feasible, and the signal timing plans should be optimized to improve throughput progression along Maui Veterans Highway.

Table 5-2: LOS Summary of Existing Conditions and Base Year 2038 with Mitigation Conditions

	Existing Overall LOS Conditions			**Base Year 2038 with Mitigation Conditions (without DHHL Parcels)**		
Intersection	AM	PM	WE	AM	PM	WE
Maui Veterans Hwy & Nāki'i Rd	A	A	A	B	B	A
Maui Veterans Hwy & Mehameha Lp North/ Kamaʻāina Rd	A	A	A	B	C	C
Maui Veterans Hwy & DLNR Access	-	-	-	B	C	D
Maui Veterans Hwy & Mehameha Lp South	-	-	-	A	C	B
Piʻilani Hwy/Maui Veterans Hwy & N Kīhei Rd/Monsanto Drwy	C	C	B	C	D	C

Source: Austin, Tsutsumi & Associates, Inc. *Revised Traffic Impact Analysis Report DHHL North and South Parcels.* ~~August 2018~~ March 2019a.

With the recommended improvements at the study intersections, all intersections are forecast to operate at overall LOS D or better. All movements will also operate under capacity, with vehicle to capacity (v/c) ratios below 1.0. Additionally, all mainline through movements along the highway are expected to operate at LOS D or better during all peak hours. The majority of left-turn and minor street movements are expected to operate at LOS E/F due to the long cycle lengths favoring the through movements along Maui Veterans Highway.

Future Year 2038

Pūlehunui North is anticipated to contain a mix of industrial space, commercial space, a possible hotel and a cultural center/visitor attraction on approximately 184.4 acres of vacant land. Pūlehunui South is anticipated to contain a mix of agricultural use, agricultural homesteads, educational facilities, recreational community facility and industrial/agricultural processing space on approximately 646 acres of currently-vacant land. Buildout of both DHHL Project Areas is anticipated to occur by Year 2035, but for purposes of this TIAR, a forecast Year 2038 was used to analyze the full impacts of the Pūlehunui Regional Subdivision, which includes the DHHL

Project Areas, DLNR Industrial and Business Park, Maui Regional Public Safety Complex (MRPSC) and Puunene Heavy Industrial Subdivision.

Upon completion of the DHHL Project Areas, traffic in the study area is expected to increase over Base Year 2038 conditions. The DHHL Project Areas are anticipated to generate approximately 1,623(1,733)[1,969] trips during the AM(PM)[WE] peak hours of traffic, respectively. As discussed previously, for purposes of the traffic analysis, widening improvements along Maui Veterans Highway were recommended at each study intersection based on LOS analysis for Future Year 2038. As a result of the increase in traffic volumes, several roadway improvements are recommended with the DHHL Project Areas and described in greater detail in Section 7 and Appendix D of the TIAR (see Appendix H of this ~~DEIS~~ FEIS). Left-turn storage lane lengths for the Pūlehunui North and South accesses are also shown in Tables 5.3 to 5.6 of the TIAR.

The signal timing plans at Maui Veterans Highway/Mehameha Loop (North)/ Kamaʻāina Road, Maui Veterans Highway/DHHL North Access/DLNR Access and Maui Veterans Highway/Mehameha Loop (South)/Pulehunui Motorsports Park Access Road intersections should be optimized to provide favorable throughput progression along Maui Veterans Highway.

Based on national guidance, the vehicular capacity for a single-lane roundabout is generally up to 25,000 vehicles per day. The vehicular capacity for a double-lane roundabout is generally up to 45,000 vehicles per day. Forecasted traffic for Year 2038 predicts between 60,000-75,000 vehicles per day on Maui Veterans Highway in the area, therefore double-lane roundabouts would likely provide insufficient capacity. Furthermore there are currently no double-lane roundabouts operational in Hawaiʻi, resulting in a potentially steep learning curve for drivers in a relatively high-volume area upon implementation. There are few triple-lane roundabouts operational throughout the United States due to notable challenges documented by the FHWA including an increased risk of sideswipe crashes due to drivers crossing lanes within the roundabout, and driver confusion in interpreting signage and lane arrows. In addition to these safety concerns, as noted above double-lane roundabouts are already likely to have a steep learning curve for Hawaiʻi drivers. Triple-lane roundabouts are therefore are not recommended.

~~Full buildout of the entire Pūlehunui Regional Subdivision is anticipated to occur after the 2035 estimated need for HDOT's Maui Veterans Highway widening improvement. HDOT's~~ DOT's Maui Veterans Highway widening improvement is currently not a funded improvement and is not identified on the latest Statewide Transportation Improvement Program (STIP). Due to the uncertainty of ~~HDOT's~~ DOT's Maui Veterans Highway widening improvement, DHHL will coordinate with HDOT on its fair share of improvements. Based on a comparison of DHHL Project Area traffic increase to total Future Year 2038 forecast traffic, the DHHL Project Areas will constitute approximately 14 percent of all traffic, based on its composite average increase for ~~the AM, PM and Saturday MD~~ all peak hours of traffic.

Traffic generated by the DHHL Project Areas will not contribute significantly to regional traffic nor cause unacceptable delay time at the studied intersections by the completion of the

Proposed Action (Future Year 2038). While vehicle delays at the studied intersections are expected to increase as a result of the Proposed Action, the anticipated vehicle wait time does not vary significantly from future year conditions without the Proposed Action (Base Year 2038) and the study intersections will continue to operate within reasonable wait times (LOS D or better).

In addition to the improvements described above the County of Maui's *Maui Island Plan* conceptually identifies two future regional roadways that may further alleviate traffic conditions in the region: the Upcountry-Kīhei Corridor and the Kīhei Mauka Bypass Collector Road. While these two roadways have not yet been funded or designed and therefore are excluded from the TIAR analysis, they are considered qualitatively as a regional roadway solution. The Upcountry-Kīhei Corridor is a new future bypass road that will provide a more direct connection between Kīhei and the upcountry areas of Haleakalā. This bypass could substantially reduce north-south traffic along Maui Veterans Highway. The Kīhei Mauka Bypass Collector Road roadway alignment and termination points are not defined, however the anticipated land uses at Pūlehunui South do not preclude accommodation of the Kīhei Mauka Bypass Collector Road through roadway easements and/or right-of-way acquisition. DHHL is open to coordination with other agencies to further explore accommodating the Kīhei Mauka Bypass Collector Road. Refer to Appendix H.

Table 5-3: LOS Summary of Base Year 2038 and Future Year 2038 with Mitigation

	Base Year 2038 with Mitigation Conditions (without DHHL Parcels)			**Future Year 2038 with Mitigation Conditions (including DHHL Parcels)**		
Intersection	AM	PM	WE	AM	PM	WE
Maui Veterans Hwy & Nāki'i Rd	B	B	A	B	B	A
Maui Veterans Hwy & Mehameha Lp North/ Kama'āina Rd	B	C	C	B	C	C
Maui Veterans Hwy & DLNR Access	B	C	D	B	C	D
Maui Veterans Hwy & Mehameha Lp South	A	C	B	B	C	C
Pi'ilani Hwy/Maui Veterans Hwy & N Kīhei Rd/Monsanto Drwy	C	D	C	C	D	C
Maui Veterans Hwy & DLNR Drwy 2	-	-	-	C	C	C

Source: Austin, Tsutsumi & Associates, Inc. *Revised Traffic Impact Analysis Report DHHL North and South Parcels.* ~~August 2018~~ March 2019a.

5.4 SOUND

Existing background noise in the vicinity of the DHHL Project Areas is principally attributed to vehicular traffic on Maui Veterans Highway. The noise from flight paths of arriving and departing aircraft at Kahului Airport, located to the north of the DHHL Project Areas, represents another occasional source of noise (see Figure 5-3) although the DHHL Project Areas are beyond the bounds of its noise exposure map.

With the cessation of HC&S operations at the end of 2016, intermittent noise from sugar cane agricultural activity no longer exists. Depending on the type of diversified agriculture on Pūlehunui South and adjacent agricultural lands, intermittent noise from agricultural activities may continue.

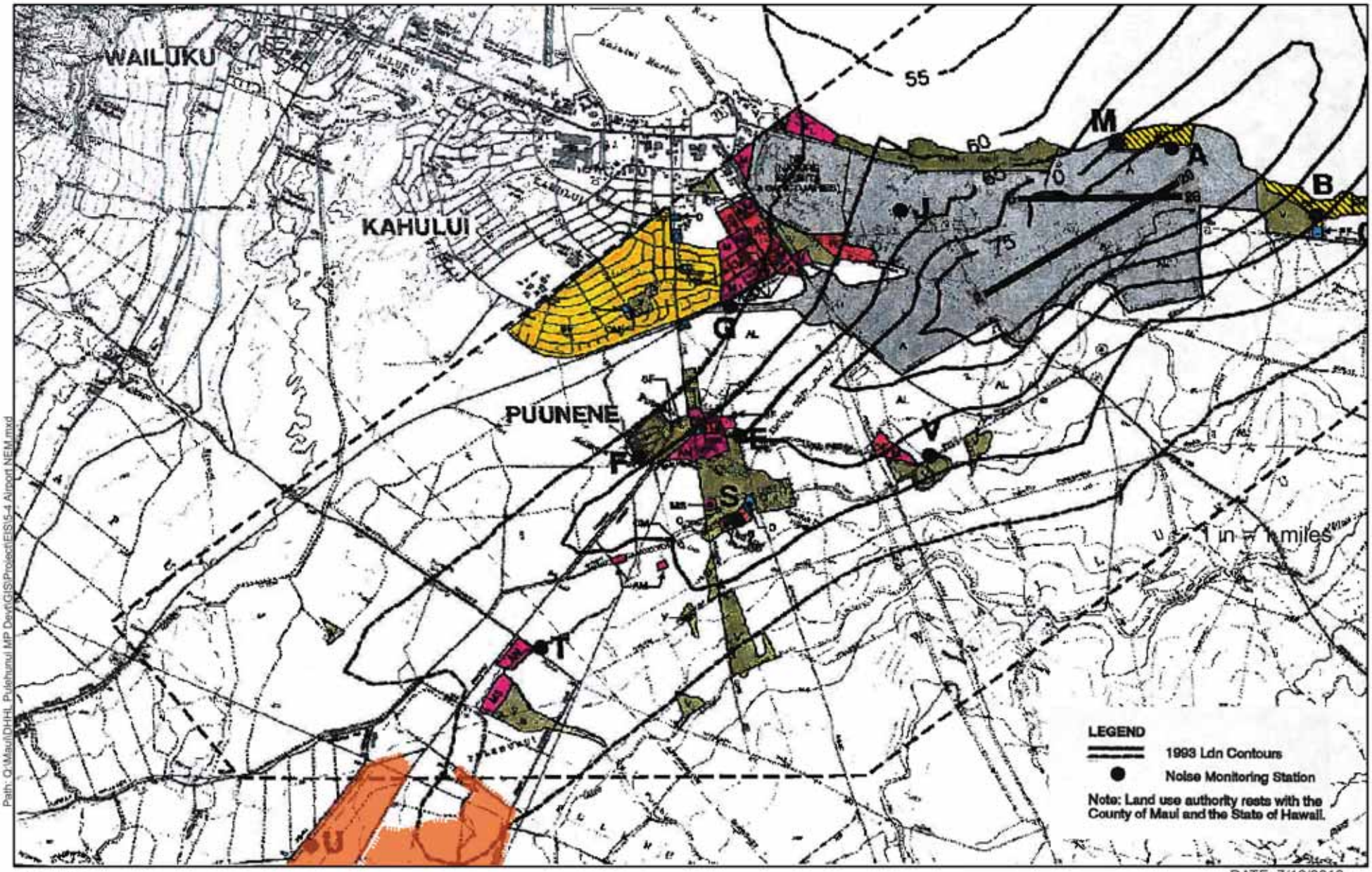
An Acoustic Study for the DHHL Project Areas was prepared by Y. Ebisu and Associates. See Appendix F. The existing background ambient noise levels within the DHHL Project Areas are moderate and less than 55 A-weighted decibels (dBA), except during passbys of heavy motor vehicles on the cane field service roads or during flybys of aircraft operating at Kahului Airport. A-weighted decibels are an expression of loudness of sound in air as perceived by the human ear.

Traffic along Maui Veterans Highway controls the background noise levels within the DHHL Project Areas. The loudest noise sources at the DHHL Project Areas are probably heavy trucks traveling along the roadways closest to each site boundaries. During Saturdays, and occasionally on Fridays, Sundays, and holidays, noise from activities at the Pulehunui Motorsports Park are probably the loudest noise sources at the northern end of Pūlehunui South.

Traffic noise was measured in July 2018 at four locations. Refer to Appendix F. The results of the traffic and background ambient noise measurements and predicted traffic noise levels are summarized in Table 3 of Appendix F.

The existing traffic noise levels in the vicinity along Maui Veterans Highway rights-of-way are slightly less than 65 Day Night Average Sound Level (DNL) on the east side and 65 to 66 DNL on the west side. Existing noise levels at the Maui Humane Society building closest to Maui Veterans Highway (64 to 65 DNL) and at the HIARNG Puʻunēnē Armory (59 to 60 DNL) are considered to be acceptable for office buildings. Existing traffic noise levels at Central Maui Baseyard were less than 65 DNL, which is considered to be acceptable for industrial land uses. Exterior noise level as high as 75 DNL are generally considered acceptable for commercial, industrial, and other non-noise sensitive land uses.

Sound level measurements of noise during drag racing time trials at Pulehunui Motorsports Park (PMP) were obtained at one location (shown in Figure 1 of the Appendix H) to determine if potential noise impacts may possibly affect future uses at the DHHL Project Areas during similar drag racing events. The noise events are recurring of short duration, 90 to 117 dBA bursts of noise. Location F (see Figure 1 of the Acoustic Study) was assumed to also be representative of noise levels occurring at the south end of the dual drag strips during drag racing events, and data



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DATE: 7/12/2018

LEGEND

Infrastructure Regional Study Area

FIGURE 5-3:
Kahului Airport Noise Exposure Map

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North — Not to scale.

PBR HAWAII & ASSOCIATES, INC.

Source: State DOT Airports Division, 1995.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

from Location F was used to predict the sound levels during drag racing events at other locations in the DHHL Project Areas. Refer to Appendix F.

During the Draft EIS public review period, PSD wrote:

"No discussion on impact of background noise from the adjacent Active National Guard Armory."

Refer to Appendix B-2 for a copy of these comments and DHHL's responses. It is acknowledged that aircraft landing at the Pu'unēnē Armory could create temporary noise. In 2002 the Department of Defense published its Final Environmental Assessment for Construction of the Hawaii Army National Guard's Maui Consolidated Readiness Center (the Pu'unēnē Armory). Per the Final EA:

> Helipad use (for HIARNG training exercises) is expected to average two (2) takeoffs and two (2) landings over one weekend period per month . During annual training exercises, which are held over a two-week period at Schofield Barracks on Oahu or the Pohakuloa Training Area on the Big Island, helipad use is expected to involve three (3) to five (5) takeoffs and three (3) landings during the beginning and end of· this period, respectively. (Hawaii Army National Guard, 2002).

The Final EA further notes, "No night flights would be involved."

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, PSD wrote:

> …Additionally, it should be noted in the Draft EIS that the PSD is proposing at the DAGS/PSD MRPSC Site plans to construct an either an Indoor or Outdoor Firing Range for Weapons Qualification Purposes. Anticipated noise levels for Fire Ranges range from 78 decibels which can reach to 122 decibels but according to NIOSH 1998 cannot exceed 140 decibels. Please provide discussion if warrant an impact to the surrounding development.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The details of non-DHHL State projects are outside the purview of DHHL and are not part of the Proposed Action under this EIS. This EIS incorporates by reference project information provided by DLNR and DAGS/PSD, for their respective proposed developments. Due to concerns about noise and safety, DHHL would prefer that PSD construct an indoor firing range as opposed to an outdoor one; DHHL will participate in consultation as PSD proceeds with the planning process for the MRPSC.

Construction-Related Noise

During the EISPN Public Review period, the DOH EPO wrote: "If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work." The Proposed Action will comply with all applicable rules and provisions including those of Chapter 11-46, HAR. If noise created during the construction phase of the proposed action is expected to exceed the maximum allowable levels, then a noise permit will be obtained before the commencement of work.

With respect to construction, audible construction noise will probably be unavoidable during the entire project construction period. The use of properly muffled construction equipment should be required on all job sites. The incorporation of DOH construction noise limits and curfew times, which are applicable throughout the State of Hawai'i is another noise mitigation measure. Noisy construction activities are not allowed on Sundays and holidays, during the early morning, and during the late evening and nighttime periods under the DOH permit procedures.

The closest existing residences to the DHHL Project Areas are well beyond the 1,000 foot separation distance, therefore, risks of adverse noise impacts at existing residences during construction activity are expected to be very low. Construction noise impacts are possible at the Maui Humane Society due to the relatively small (350 ft) buffer distance to Pūlehunui North. Special coordination procedures between the construction contractor and the animal caretakers may be required during close-in site preparation activities. The use of temporary sound barriers (wooden walls, bumper-to-bumper buses with closure panels, etc.) or even portable air conditioning equipment could provide additional sound attenuation during site preparation activities.

Operational Related Noise

By existing DOH regulations, fixed noise machinery on commercial and industrial buildings within DHHL Project Areas may emit sound levels continuously during the day and night, as long as their sound levels do not exceed 70 dBA at or beyond the lots' property boundaries. Risks of adverse noise impacts from onsite noise sources are considered to be minimal. The study recommended that noise mitigation measures which limit the noise from fixed mechanical equipment to those allowed by the DOH should be required of all tenants within the DHHL industrial and commercial areas.

Vehicular Noise

Existing traffic noise levels along Maui Veterans Highway are relatively high and are expected to remain so through 2038. Risks of future traffic noise impacts along the highway should continue to be low due to the absence of noise sensitive receptors (i.e., residences) along the highway in the DHHL Project Areas.

The Acoustic Study predicted future traffic noise levels for 2038. The future projections of the Infrastructure Regional Study Area and DHHL Project Area traffic noise levels on the roadways

which would service the DHHL Project Areas are shown in Table 4 of the Acoustic Study (see Appendix F).

Projected traffic associated with the DHHL Project Areas and anticipated roadway improvements are expected to create small to moderate changes in traffic noise levels along Maui Veterans Highway in the vicinity of the DHHL Project Areas by 2038. With the exception of the proposed DHHL access at Maui Veterans Highway and Pulehunui Motorsports Park Access Road at Maui Veterans Highway, the predicted increases of 0.4 to 0.8 DNL in DHHL Project Area-related traffic noise are small compared to the 2.9 to 3.6 DNL predicted for the Infrastructure Regional Study Area traffic and anticipated roadway improvements. At the new DHHL Access at Maui Veterans Highway, a large increase in traffic noise is expected solely as a result of predicted project traffic from Pūlehunui North. Similarly, there is an expected large increase in traffic noise level at the DLNR Access at Maui Veterans Highway as a result of the proposed DLNR Industrial and Business Park.

The increase in traffic noise levels due to the Infrastructure Regional Study Area and DHHL Project Area traffic at Kamaʻāina Road at Maui Veterans Highway and Maui Raceway Access Road at Maui Veterans Highway are relatively high due to the very low or nonexistent traffic on these two roads during 2017. However, the dominant traffic noise in the DHHL Project Areas will continue to be traffic along Maui Veterans Highway, with the increases in future traffic noise levels from the Pūlehunui North and South project-generated traffic being relatively small along this roadway, and primarily associated with non-project traffic.

Within Pūlehunui South, a planned 1,900 foot buffer distance to the highway's centerline will mitigate future traffic noise levels at the planned agricultural homesteads, which is predicted to not exceed 55 DNL by 2038 and will be controlled by traffic moving within Pūlehunui South and on perimeter roadways. The area designated for Education within Pūlehunui South is planned to be located with minimum 750 foot buffer distance from the centerline of Maui Veterans Highway. The lots adjacent to the highway right-of-way designated for Culture and Arts within Pūlehunui South are expected to be exposed to incompatible traffic noise levels from Maui Veterans Highway, which exceed 65 DNL. The lots adjacent to the highway right-of-way and designated for commercial uses within Pūlehunui South are predicted to be exposed to traffic noise levels between 65 and 70 DNL, which is considered to be "Marginally Compatible" but not “Incompatible” (see Figure 2 of Appendix F). Traffic noise levels at the interior lots of the Culture and Arts and Commercial portions of Pūlehunui South will probably become “Compatible” for their planned uses as man-made structures provide noise shielding effects from the highway noise. The use of sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces, and DHHL will consider re-locating sensitive uses within the property as needed. Traffic noise levels at the planned industrial lots within Pūlehunui South should be “Compatible” due to their larger setbacks from the highway. Risks of adverse noise impacts from future traffic noise are considered to be low for all uses within Pūlehunui South, except at the Culture and Arts frontal lots.

Pūlehunui North includes a possible hotel (at the discretion of a future developer) in addition to commercial/light industrial uses. The hotel should be "Compatible" with 2038 highway noise levels as long as a minimum 215 feet setback is maintained from the centerline of the highway, so as to not exceed 65 DNL. If a Hotel is developed, it will likely include air conditioning, which means that windows will be closed and serve to attenuate noise from traffic along Maui Veterans Highway and stationary noise from other uses at Pūlehunui North. Commercial/Light Industrial uses on Pūlehunui North should not be exposed to "Incompatible" highway noise levels of 75 DNL because of their minimum setback distance of 110 feet from the highway centerline. Risks of adverse noise impacts from future traffic noise at Pūlehunui North are considered to be very low. In addition, the use of sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces.

PMP Noise

Noise from Pulehunui Motorsports Park (PMP) are predicted to be audible at noise sensitive receptors within the DHHL Project Areas. While lands designated for agricultural or industrial uses can technically be compatible with outdoor noise exposure levels as high as 76 DNL, residences or other noise sensitive receptors located on these lands could react unfavorably when exposed to such high intermittent noise levels, as were measured at PMP. Because noise during drag racing events at PMP will probably be audible at noise sensitive locations at Pūlehunui South, and because future residences are potential receptors at these locations, there is a risk that noise complaints may occur regarding these noise producing activities at PMP. As the use of closure and air conditioning is anticipated at the hotel, risks of adverse noise impacts from PMP are considered to be low at the hotel. A HUD compliant noise study will be conducted to determine whether the FHA/HUD noise standard of 65 DNL will be exceeded at noise sensitive uses at Pūlehunui South.

To mitigate potential impacts of PMP activities on potential residences and other sensitive noise receptors that may be associated with the proposed land uses, a noise study that meets the requirements of 24 CFR Part 51, Subpart B will be conducted prior to construction of buildings that will house any such uses. The study will address noise standards and any appropriate mitigation required under 24 CFR Part 51, Subpart B. Following the recommendation of the Acoustic Study, disclosure about the audibility of the PMP's activities will be provided to future users at the DHHL Project Areas.

Pu'unēnē Armory Noise

Pu'unēnē Armory activities are not anticipated to impact or be impacted by the DHHL Project Areas as the DHHL Project Areas are located a minimum of 200 feet from the armory (and farther from the armory's landing pad) and will include visual and noise buffers as discussed above and in Section 5.7. Based on the information provided in the Final EA for the armory, the helipad would accommodate two takeoffs and two landings per month (total 24 events per year). Annual exercises would involve three to five takeoffs and three landings (maximum 8 events over a two-week period). Therefore the maximum number of takeoff or landing events would be 32 per year. Per the EA, these events would not occur at night, thereby further reducing acoustical impacts.

Based on this information, noise levels under the landing track are not anticipated to exceed 55 DNL.

With the recommended mitigation measures, the proposed development of the DHHL Project Areas is not anticipated to have an adverse impact on noise in the vicinity of the Infrastructure Regional Study Area. Refer to Appendix F.

5.5 AIR QUALITY

Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural conditions (i.e. dust from wind erosion) and emissions from a variety of pollution sources (i.e., automobiles, power generating facilities). TAHA prepared an air quality study to: 1) describe existing air quality in the area; 2) evaluate the potential for adverse air quality effects that could result from Pūlehunui; and 3) recommend measures to mitigate potential air quality impacts where possible and appropriate. This report is included in Appendix G. Key findings and recommendations of air quality study are summarized below.

Air quality on Maui, and throughout the State of Hawai‘i, is considered to be good due to the presence of northeasterly trade winds that tend to disperse pollutants seaward. On the Leeward side (Southeast side) of Maui, the conditions are generally dry and sunny. The Island of Maui has two active air monitoring stations, with the nearest air monitoring station to the Infrastructure Regional Study Area located in Kīhei. The Kīhei Monitoring Station measures only concentrations of Particulate matter (PM).

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as “criteria pollutants”) are found throughout the United States. They are particle pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. These pollutants can harm public health and the environment, as well as cause property damage. Of the six pollutants, particle pollution and ground-level ozone are the most widespread health threats. The EPA regulates these “criteria pollutants” by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

The EPA must designate areas as meeting (attainment) or not meeting (nonattainment) the aforementioned “standards.” The Clean Air Act requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. Hawai‘i has no areas designated as a “nonattainment” area.

According to the U.S. Environmental Protection Agency (EPA), EPA’s National Clean Diesel Campaign (NCDC) promotes clean air strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local

officials to reduce diesel emissions. As a result of EPA regulations, diesel engines manufactured today are cleaner than ever. Recent diesel rulemakings have focused on light- and heavy-duty highway vehicles, non-road diesel equipment, locomotive and marine engines, and large ocean-going vessels. Authority for Clean Diesel funding comes from the Diesel Emissions Reduction Act, part of the Energy Policy Act of 2005.

EPA's *Clean Agriculture* helps farmers, ranchers, and agribusinesses reduce emissions from older diesel engines currently in use. Because these engines can last 30 years or more and are not subject to EPA's emissions standards for new diesel engines, they will continue to emit harmful pollutants. Reducing exposure to diesel exhaust is important for human health and the environment. EPA offers funding, as appropriated annually by Congress, for projects that reduce emissions from existing diesel engines. EPA's *Clean Agriculture* also provides information on strategies for reducing emissions from older engines, including idle-reduction practices that save money and fuel while reducing emissions.

Potential Impacts and Mitigation Measures

Construction-Related Impacts

Typically, construction activity would be expected to generate emissions through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the property. Fugitive dust emissions would primarily result from site preparation (e.g., grading) activities. Nitrogen oxide emissions would primarily result from the use of construction equipment (vehicle exhaust). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. A large portion of the emissions results from equipment traffic over temporary roads at the construction site.

During the EISPN Public Review period, the DOH EPO wrote:

> If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the requirements of the Clean Air Branch (CAB). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences.

Construction activity would occur, in phases, over the entire property. Using EPA AP-42 emission factors (EPA AP-42 Handbook, Compilation of Air Pollutant Emission Factors), construction activity could generate up to 16 pounds per day of fugitive dust emissions. Construction emissions would be temporary and are not considered adverse.

Particulate matter (PM) is the primary pollutant of concern in the Infrastructure Regional Study Area as it is the only pollutant monitored at the nearest station. It is recommended that Air

Quality Control Measures (listed below) be implemented to reduce particulate matter emissions, including fugitive dust, associated with construction activities.

Measures to control or mitigate impacts to air quality during construction include:

- The construction contractor should use water or suitable chemicals to control fugitive dust in the demolition of any existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
- The construction contractor should apply asphalt, water, or suitable chemicals on roads, material stockpiles, and other surfaces which may result in fugitive dust.
- The construction contractor should cover all moving, open-bodied trucks transporting materials which may result in fugitive dust.
- The construction contractor should maintain roadways in a clean manner.
- The construction contractor should promptly remove earth or other materials from paved streets which have been transported there by trucking, earth-moving equipment, erosion, or other means.
- Staging areas should be located away from on-site residential land uses.
- On-site electricity should be obtained from the electrical grid rather than temporary diesel or gasoline generators.
- Equipment and vehicle engines should be maintained in good condition and in proper tune per manufacturers' specifications.
- All construction equipment and delivery vehicles should be turned off when not in use or prohibit idling in excess of five minutes. Haul trucks in particular that stage waiting to be called to remove dirt from the site should not be allowed to idle while queuing.
- Land uses sensitive to air pollution (e.g., residences, educational facilities, and hotels) should not be located within 1,000 feet of a distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).

Additional dust control measures to be considered include, but are not limited to, the following:

- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase; and
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities

Operational-Related Regional Emissions

Total new external vehicle trips for the DHHL Project Areas would be 1,623 AM peak hour trips, 1,105 PM peak hour trips, and 1,969 weekend peak hour trips. The proposed action includes the development of on-site sensitive receptors such as residences and educational facilities planned for Pūlehunui South and a hotel planned for Pūlehunui North. The nearest off-site sensitive

receptors are residential areas located approximately 0.4 miles to the southwest and 0.5 miles to the south-southeast. There is no potential for on-site emissions to affect local land uses. Regarding regional emissions, the DHHL Project Areas are located in an Attainment/Unclassified area for all National Ambient Air Quality Service (NAAQS) and regional air quality is good. There is no potential for the proposed uses in the DHHL Project Areas to substantially affect regional air quality.

Operational-Related Localized Emissions

The Proposed Action does not include a source of direct pollutant emissions. Indirect source of emissions includes off-site electrical generation activities (if the energy source is non-renewable) and tailpipe emissions from on-road vehicles. Although the Proposed Action includes development within the DHHL Project Areas, the anticipated land uses include 30 to 40 acres for open space at Pūlehunui North and majority agricultural uses at Pūlehunui South. DHHL will consider ways to incorporate state-of-the-art energy conservation and green practices in the development of the DHHL Project Areas. Development of the DHHL Project Areas would not interfere with the development of clean energy supplies.

The U.S. EPA has published guidance on prevention of carbon monoxide (CO) "hot spots" at congested intersections resulting from idling and slow-moving vehicles. The guidance focuses on the avoidance of localized spikes in CO concentrations causing violations of the ambient air quality standards. Screening results for CO dispersion modeling exercise determined that an intersection experiencing a peak hour volume would not produce large enough CO concentrations to be a pollutant of concern, which is also evident by the lack of monitoring in the region. There is no potential for the proposed uses in the DHHL Project Areas to result in a CO hot spot.

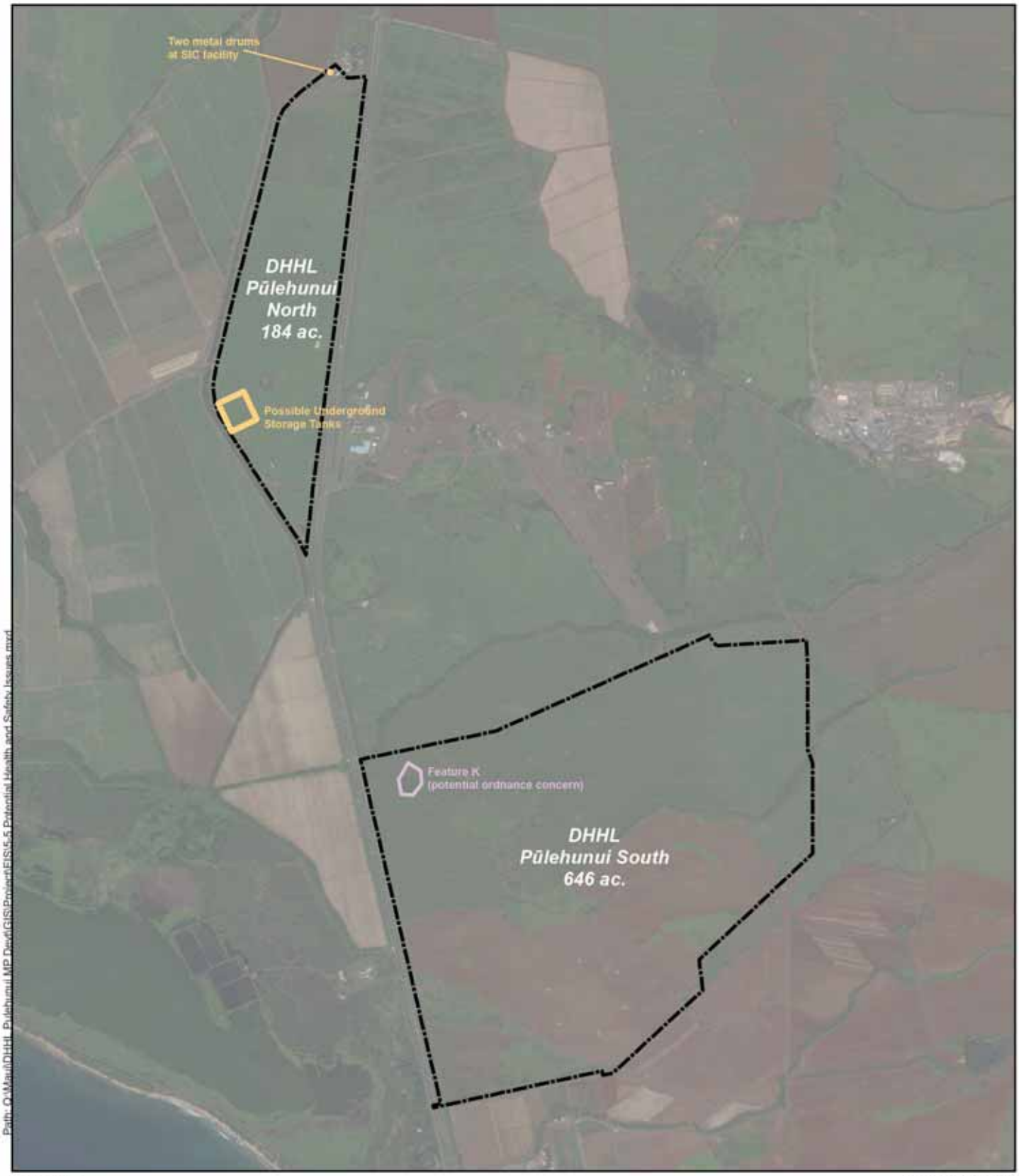
5.6 MAN-MADE HAZARDS

EnviroServices & Training Center, LLC (ETC) conducted two Phase I Environmental Site Assessments (ESAs) which together cover the full area of the DHHL Project Areas. The Phase I ESAs are included as Appendix I-1 and Appendix I-2 and summarized below.

The Phase I ESAs revealed the following evidence of recognized environmental conditions (RECs), as defined by the American Society for Testing and Materials (ASTM), in connection with the property (see also Figure 5-4):

- Contaminant impacts associated with a potential release from the two corroded 55-gallon drums containing an unknown substance.
- The potential presence of residual contamination associated with the four suspect aviation fuel underground storage tanks (USTs) is considered a REC for = Pūlehunui North.

Other existing conditions of the property include the presence of multiple stockpiles of rock/boulders, concrete rubble, asphalt, and a limited amount miscellaneous metal. The quantity of waste and size of the piles made it infeasible to adequately characterize the potential



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LEGEND

- DHHL Project Areas
- Recognized Environmental Conditon (REC)
- Potential ordnance concern

DATE: 10/4/2018

Figure 5-4:
Potential Health and Safety Issues

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North — Linear Scale (feet) 0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: Department of Hawaiian Home Lands, 2018.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

environmental impacts. As such, the unknown contents of these piles are considered a "data gap." Based on ETC's general observation of the stockpiles and surrounding areas coupled with information provided by Hawaiian Commercial and Sugar Company (HC&S) as well as Alexander & Baldwin, Inc. (A&B) personnel, this data gap is not considered significant.

In 2018 'Āina Archaeology conducted a survey of the existing buildings at Pūlehunui South to document their conditions and also conducted a review of other AISs conducted in the area. In the northwest portion of the Pūlehunui South near the intersection of Firebreak Road and Maui Veterans Highway is Feature K, an earthen depression which was formerly used as an ordnance dump, and later as a sump when the property was cultivated with sugar.

Potential Impacts and Mitigation Measures

During the EISPN ~~P~~public ~~R~~eeview period, the DOH EPO wrote: "If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with State Law (HRS, Chapter 128D, 'Environmental Response Law', Chapter 451, 'State Contingency Plan')." DHHL notes that the Department of Health Hazard Evaluation and Emergency Response Office (HEER Office) provides leadership, support, and partnership in preventing, planning for, responding to, and enforcing environmental laws relating to releases or threats of releases of hazardous substances. If potentially hazardous substances, pollutants, or contaminants are identified, the HEER Office will be contacted to determine the appropriate actions to comply with the relevant environmental laws, including Chapters 11-260 to 11-280, HAR, relating to hazardous waste. If potential construction sites are found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with State Law (Hawaii Revised Statutes, Chapter 128D, "Environmental Response Law", Chapter 451, "State Contingency Plan".

During the Draft EIS public review period, the HEER Office wrote:

1. The former Pu'unene Naval Air Station (NAS) reportedly had a complement of over 3,300 personnel, 271 aircraft, and over 300 permanent structures. Several fuel storage tanks with hundreds of thousands of gallons of capacity were reportedly associated with the former NAS. The recognized environmental conditions reported in the two Phase I Environmental Site Assessments presented with the Draft Environmental Impact Statement (DEIS) may not be the only sources of contamination at the site associated with this historical use. Additional investigation to identify other sources and delineate the extent of contamination is recommended. Coordination with the U.S. Army Corps of Engineers (USACE) to understand the historical use of the property and the total area of the Formerly Used Defense Site (FUDS) is recommended.

2. Much of the site appears to have been historically used for sugar cane cultivation. Residual pesticides in former agricultural lands could pose potential risks to human

> health and the environment in a residential setting. HEER Office guidance recommends that sites with known pesticide-related contamination and also those where pesticides were regularly applied be evaluated for residual contamination prior to redevelopment (HDOH Technical Guidance Manual [TGM] Interim Final, 2014, Section 9.1). A Sampling and Analysis Work Plan should be submitted to the HEER Office for review and approval prior to conducting such an evaluation. Where soil contamination concentrations exceed HDOH Tier 1 Environmental Action Levels (EALs), land use restrictions or remedial action may be required.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Former uses will be taken into consideration as plans for the DHHL Project Areas progress. DHHL's environmental consultant is aware of the former uses at Feature K and the Department of Health will be consulted prior to any ground disturbance in the vicinity of Feature K. As plans for the DHHL Project Areas progress, a Phase II may be appropriate depending on site plans, building footprints, and other details. At the appropriate stage(s) in the development process, DHHL will coordinate with the DOH and USACE regarding other possible former uses at the former NAS Puunene and will adhere to applicable technical guidance. DHHL will consult the DOH regarding any anticipated residential or other sensitive uses of the DHHL Project Areas.

In accordance with Hawaii Administrative Rules Title 11, Department of Health, Chapter 58.1 (HAR §11-58.1) property owners are responsible for "removing accumulated solid waste to an approved solid waste disposal facility." As of the writing of the Phase I ESA for Pūlehunui North, arrangements had been made to remove the aforementioned drums from the site with proper disposal. Any removal of solid waste from the site will be done in accordance with the relevant State laws, referenced above.

Proposed uses at the DHHL Project Areas are not anticipated to create any man-made hazards.

5.7 VISUAL RESOURCES

The DHHL Project Areas are located in Maui's central valley which, until the end of 2016, was characterized largely by lands dedicated to the cultivation of sugar cane. The expansive agricultural lands provide broad, highly desirable, and attractive view planes across the central valley, which is expected to continue with the transition to diversified agriculture operations. Scenic resources include views of Haleakalā Mountain to the east and the West Maui Mountains to the west.

In 2006, Chris Hart Partners completed one of the *Draft Maui Island Plan*'s technical studies, entitled "Scenic Resources – Inventory and Mapping Methodology." This report was sanctioned by the County's Department of Planning in support of the *General Plan 2030* update (*Maui Island Plan*). Its purpose was to identify "scenic roadway corridors" based on an inventory and ranking of public views from major State and County roadways. The *Maui Island Plan* includes a Character & Context Map which identifies Scenic Corridors throughout Maui. Scenic Corridors are

categorized as either Exceptional, High, or Medium. The Maui Veterans Highway is not identified as a Scenic Corridor. The closest Scenic Corridors are Kīhei Road and Piʻilani Highway. Both are categorized as Medium.

Potential Impacts and Mitigation Measures

The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2.

Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

5.8 INFRASTRUCTURE AND UTILITIES

Austin, Tsutsumi & Associates, Inc. (ATA) prepared a Preliminary Engineering ~~and Drainage~~ Report for Pūlehunui. This report is included in Appendix C. Key elements of the report are summarized in the following sections.

During the Draft EIS public review period, the County of Maui Department of Public Works wrote: "We reviewed the subject application and have no comments at this time." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

5.8.1 *Water System*

The County of Maui, Department of Water Supply (DWS) provides water service to some users in the Puʻunēnē-Pūlehunui area, including the HIARNG Puʻunēnē Armory and the Humane Society. DWS also provides water to users in Kīhei, with the northern most users along North Kīhei Road. DWS has two transmission waterlines in the vicinity of the Infrastructure Regional Study Area. These are the Kīhei Water Development Project (KWDP) waterline and the Central Maui Water Transmission System (CMWTS) waterline. The HIARNG Puʻunēnē Armory is serviced by a connection to the CMWTS waterline. Properties along North and South Kīhei road are serviced by a connection to the KWDP waterline.

The CMWTS is sourced from groundwater wells in Waiehu, which draw water from the ʻĪao Aquifer. Water is stored in the 1.0 million gallon (MG) Waiheʻe Tank in Waiehu (also referred to

as the CMWTS Tank), then flows by gravity to Kīhei via the CMWTS waterline. The CMWTS Tank services portions of Waiheʻe, Māʻalaea, Pūlehunui and South Maui.

The KWDP is sourced primarily from the Mokuhau Wells, which also draw water from the ʻĪao Aquifer. The wells are located at the end of Mokuhau Road, just north of ʻĪao Stream. The ʻĪao Aquifer is designated as a groundwater management area under the State of Hawaii Commission on Water Resource Management (CWRM), which means that the current withdrawal from the aquifer has reached 90 percent of the sustainable yield of the aquifer.

To better distribute the draft from this portion of the aquifer, DWS has developed the new ʻĪao Well, Waikapū Well, and the recently completed Wailuku Well No. 1 and Wailuku Well No. 2. In addition to these groundwater wells, DWS is currently constructing a new Water Treatment Plant (the ʻĪao WTP) which will treat surface water from the ʻĪao -Waikapū Ditch, which is the current water source for the existing ʻĪao WTP. The treated water from the WTP will be conveyed to DWS's existing 3.0 MG ʻĪao Reservoir, which also receives water from the new wells and supplies water to DWS's water system.

At this time, a potential new water source to supplement DWS's existing water system, either groundwater or surface water, has not been determined.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the DLNR Engineering Division wrote:

> The applicant should include water demands and infrastructure required to meet project needs. Please note that the projects within State lands 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.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

While there are existing DWS facilities in Pūlehunui, service is limited primarily to the HIARNG Puʻunēnē Armory and the Humane Society. In addition to limited transmission facilities, a larger issue is the availability of source for potable and irrigation water.

DHHL consulted the Maui County Department of Parks and Recreation (DPR) on the EISPN and received a comment that DPR is creating a master plan for the Pūlehunui Motorsports Park (PMP). DPR further commented that the PMP currently lacks infrastructure for potable water, wastewater, electricity, storm water management, communication, or other basic services. Given its proximity to the Infrastructure Regional Study Area and anticipated continued use as a motorsports park, DHHL's engineering and traffic studies for the Proposed Action will take into account the water, wastewater, and traffic demand generated by the PMP (in addition to the

parties to the MOU). DHHL therefore anticipates a positive impact to the DPR PMP by partially supporting its infrastructure needs. DHHL anticipates further positive impacts to regional infrastructure because the Proposed Action could accommodate projected infrastructure needs of not just State agencies, but a County agency as well. Refer to Appendix B for a copy of the DPR comment letter and DHHL's response. A full list of consulted agencies can be found in Section 9.3.

The Preliminary Engineering Report (PER) prepared for the Proposed Action assessed three alternatives for water supply. These alternatives would provide water for potable, non-potable and fire protection purposes for most of the Infrastructure Regional Study Area's needs. A separate non-potable system would supply irrigation water to lands at Pūlehunui South. Refer to Figure 5-5 through Figure 5-9.

Alternative 1 is based on the assumption that water for the Infrastructure Regional Study Area will be provided by the DWS via a connection to the DWS' existing water system. Alternative 2 is based on the development of a surface water treatment plant (S-WTP) that would treat surface water from East Maui Irrigation's (EMI's) existing ditch system[4]. Alternative 2 would be privately owned and operated and would require construction of new waterlines and storage tanks. Alternative 3 is similar to Alternative 2, except that the source of water would be brackish water from ~~new brackish water wells~~ an offsite skimming well similar to existing A&B irrigation wells previously used for sugar cane irrigation in the area.

Table 5-4:Water System Alternatives

Alternative	Water Source	Treatment	Location
1	County water (DWS)	n/a	n/a
2A	EMI existing ditch system (new raw water reservoir)	New membrane filtration facility	DLNR Industrial and Business Park, southern boundary
2B	EMI existing ditch system (existing HC&S Reservoir 90)	New membrane filtration facility	Pūlehunui South, northeastern boundary
3A	New ~~onsite brackish wells~~ offsite skimming well	New reverse osmosis facility	DLNR Industrial and Business Park, northeast portion
3B	New ~~onsite brackish wells~~ offsite skimming well	New reverse osmosis facility	Pūlehunui South, northeastern boundary (same as 2B)

[4] Mahi Pono LLC is in the process of acquiring A&B's interest in East Maui Irrigation Company, LLC. Currently Mahi Pono is a part-owner of EMI, along with A&B.

5.8.1.1 Alternative 1

As previously noted, Alternative 1 is based on the assumption that water for the Infrastructure Regional Study Area will be provided by the DWS via a connection to the DWS' existing water system.

Water Source

It is anticipated that DWS will approve a connection to the nearby existing DWS water system to supply water to the Infrastructure Regional Study Area. Under Alternative 1, water storage and source would need to be developed to mitigate the increased demand on DWS's system.

During the Draft EIS public review period, the State Office of Planning wrote:

> 2. The Maui County Department of Water Supply (DWS) currently provides water to the area via two transmission waterlines. Both waterlines draw water from the Iao Aquifer. The Iao Aquifer is designated as a groundwater management area by the State of Hawaii Commission on Water Resource Management which means that the current withdrawal from the aquifer has reached 90 percent of sustainable yield. Consequently, securing sufficient water resources for any development in the area is an issue of concern. The Draft EIS discusses five alternatives (Section 5.8.1, p. 95, and Appendix C Preliminary Engineering and Drainage Report.) The preferred alternative is for the DWS to provide water to the study area via a connection to its existing system. However, this would require development of a new water source and improvements to the system. The Draft EIS discusses this issue in detail.

The State Commission on Water Resource Management (CWRM) wrote:

> Three alternatives for regional potable water service are discussed. The first alternative is to connect to the existing municipal system. It is anticipated that new water source would be needed to support the average day demand of 1.36 mgd. The Preliminary Engineering Report suggests that up to three new wells in the Waihee Aquifer System Area (AYSA) be developed. Reported 12-MAV pumpage from the Waihee AYSA from April 2017 to December 2017 was consistently 5.6 mgd, which together with the projected demand of 1.36 mgd, would bring total withdrawals to a little less than 7 mgd. This is within the 8 mgd sustainable yield of the Waihee AYSA but 88% of the Waihee AYSA sustainable yield and mostly concentrated near the border between the lao and Waihee AYSAs rather than spread throughout the Waihee AYSA, which may trigger information hearings from the Commission for purposes of assessing the groundwater situation and devising mitigative measures. The Maui Department of Water Supply and U.S. Geological Survey Developed a numerical groundwater model for the Wailuku area (Ground-Water Availability in the Wailuku Area, Maui, Hawaii SIR 2008-5236) that covers the lao and Waihee AYSAs and should provide insight into impacts from the proposed [DWS] wells.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses.

DHHL will work with CWRM during the well installation permitting process to ensure that DHHL groundwater use does not adversely affect the long-term sustainability of the aquifer.

Water Storage Tank Size
This alternative would require one or more new storage tanks that would be tied into the existing DWS system. The PER identifies potential tank sites in Waiheʻe and ʻĪao.

Transmission and Distribution System
Alternative 1 may require a new transmission line to convey the water from the new tank to a connection point within the existing CMWTS waterline or with DWS's distribution system. Waterlines would be needed to convey water to the lots within each project. On-site distribution waterlines would be located within roadways. The waterlines would be sized to provide water for potable, irrigation, and fire suppression purposes (see Figure 5-5).

The rough order of magnitude cost for Water Alternative 1 is approximately $31.085M which does not include interior water distribution system costs, land acquisition for a tank site, or potential costs to develop a water source.

5.8.1.2 Alternative 2
As previously noted, the source of water for Alternative 2 would be surface water from the EMI. A new private WTP would treat water from EMI's existing ditch system to produce potable water for the region.

Water Source
With the cessation of sugar cane cultivation on the island, water previously used for irrigation may be available for other uses such as drinking water. The existing irrigation system is sourced from diversions by EMI and originates from streams in East Maui. In 1938 EMI granted the Territory of Hawaii a perpetual right and easement to jointly convey and divert water for the Territory's use; the successor to this agreement is the State of Hawaii.

The closest EMI ditch to the Infrastructure Regional Study Area is the Haiku Ditch, which runs just above the Infrastructure Regional Study Area. The Haiku Ditch discharges into HC&S Reservoir 90, just above the DLNR Industrial and Business Park. Water from the reservoir was historically used to irrigate the Infrastructure Regional Study Area during sugar cane cultivation. EMI has three other ditches at higher elevations up the slopes of Haleakalā. Based on information available to date, the recommendation is to divert water from the Haiku Ditch due to its proximity to the Infrastructure Regional Study Area. However uncertainties exist with this alternative; the quality and quantity of water in the Haiku Ditch is unknown at this time. Furthermore, recent discussions with HC&S is that the flows in the Haiku Ditch will probably not be at a consistent or high enough flow to sustain a reliable WTP. Further analysis of the existing Haiku Ditch, Reservoir 90 and the other components of EMI's irrigation system will be required to determine the most suitable water source for the WTP.

During the Draft EIS public review period, the State Commission on Water Resource Management (CWRM) wrote:

> The second alternative is to treat and use surface water from the East Maui Irrigation (EMI) System. The DEIS should discuss the interim instream flow standards (IIFS) for East Maui streams that supply the EM I system and whether the IIFS accommodates the proposed development.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

None of the water or irrigation alternatives for the Proposed Action propose any amendment or alteration to the existing IIFS. The contemplated alternatives would service the Infrastructure Regional Study Area without preventing attainment of the IIFS.

Surface Water Treatment Plant Process

Under Alternative 2, the recommendation is to construct a S-WTP to treat the raw water using membrane filtration. The membrane system would be located within a new building which would house the membrane filters and other ancillary equipment such as raw water strainers, pumps, air blowers/compressors, chemical cleaning and disinfection systems, and electrical and control panels. The raw water would be screened before entering the building to remove large debris from the water. The S-WTP building would also house potable water pumps for pumping treated water into the transmission/distribution system, and a fire pump for the fire protection system.

Surface Water Treatment Plant Location

Approximately two to three acres of land are expected to be required for the S-WTP. Two alternative locations are being considered: Alternative 2A and Alternative 2B.

Alternative 2A

Alternative 2A would be to locate the S-WTP within the DLNR project site. A new ditch intake would divert water from the Haiku Ditch before the ditch discharges into HC&S Reservoir 90. A new raw water storage reservoir, which would be used just for the S-WTP, would be located below HC&S Reservoir 90, at the top of the Infrastructure Regional Study Area. The reservoir would act as a sedimentation reservoir for settlement of solids prior to the water being treated at the S-WTP. The reservoir would also act as an equalization reservoir to help reduce the effects of low flows in the Haiku Ditch. The recommendation is to install a floating cover on the reservoir to eliminate evaporation from the reservoir and prevent algal blooms. Raw water would flow by gravity from thee Haiku Ditch through the new ditch intake to the new raw water reservoir, and then to the S-WTP (see Figure 5-6).

Alternative 2B

Alternative 2B would be to locate the S-WTP at Pūlehunui South within the Agricultural Area. An existing irrigation system (formerly used for sugar cane irrigation) would deliver

water from the HC&S Reservoir 90. A new raw water storage reservoir would be located at Pūlehunui South. From the raw water reservoir, water would be conveyed to the S-WTP for treatment. The recommendation is to utilize, to the extent possible, the major components of the existing system to convey water to the S-WTP. If this is infeasible, a new transmission system may be required (see Figure 5-7).

Water Storage Tank

A tank would be required to store potable water prior to the water entering the distribution system and would also likely be used as a chlorine contact tank for disinfection.

Detention Basins

Detention basins would be used for backwash water from the membrane units. Drain water from raw water strainers and neutralized chemicals that had been used to clean the membranes would also be conveyed to the basins. The recommendation is to have at least two basins, such that one basin at a time could be shut down for gravity settlement of the sludge. After settlement, the liquid would be decanted and the sludge would be allowed to dry via evaporation. The dried sludge would then be removed from the compartment for disposal, and the liquid could be used for irrigation on green areas or agricultural lots.

Transmission System

All new transmission waterlines would be required. A new raw water transmission line would be needed to convey raw water from the EMI system to the raw water reservoir and from the raw water reservoir to the S-WTP. New potable and fire transmission waterlines from the S-WTP to Pūlehunui North would need to be installed under Maui Veterans Highway at the southern intersection of the highway and Mehameha Loop. Other potable and fire transmission waterlines would convey water between DLNR and Pūlehunui South via either a route along Maui Veterans Highway or a route through Pūlehunui Motorsports Park and DLNR owned lands. The potable and fire transmission system waterlines would conform to the requirements of WSS.

Distribution System

Waterlines would be needed to convey water to the lots within each project. There would be separate waterlines for the potable water system and fire system. Distribution waterlines would be located within roadways. Potable and fire waterlines would conform to WSS requirements. Fire hydrants would be installed off the fire waterlines at a minimum of 250-foot intervals.

The rough order of magnitude cost for Water Alternative 2A is approximately $55.456M and the rough order of magnitude cost for Water Alternative 2B is approximately $65.015M. These estimates do not include interior water distribution system costs, maintenance and energy costs to run the treatment facility, and opportunity costs based on State land values.

5.8.1.3 Alternative 3

The source of water for Alternative 3 would be brackish ~~well~~ water. A new private reverse osmosis brackish water treatment plant (RO-WTP) would treat ~~water from brackish water from onsite brackish water wells~~ brackish water to produce potable water for the region.

Water Source

~~The source water supplied would be from on site brackish water wells.~~ The most practical approach to developing a brackish water source would be to construct a skimming well similar to existing A&B irrigation wells previously used for sugar cane irrigation in the area. Since the groundwater underlying the Infrastructure Regional Study Area is not of potable quality, ~~the~~ brackish water ~~from the wells~~ would be treated to decrease the chloride concentration to acceptable drinking water levels.

During the Draft EIS public review period, the State Commission on Water Resource Management (CWRM) wrote:

> The third alternative is to use brackish wells in the Kahului ASYA. The Kahului AYSA has been artificially recharged with return irrigation water from sugarcane agriculture. Now that the sugarcane plantation has closed, irrigation has been substantially reduced, and some restoration of East Maui streams has been ordered by the Commission, the impact on the water availability in the Kahului ASYA is uncertain. In addition, sea level rise may further exacerbate rising salinities in the ground water. These issues should be further discussed in the DEIS.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

DHHL will work with CWRM during the well installation permitting process to ensure that DHHL groundwater use does not adversely affect the long-term sustainability of the aquifer.

Reverse Osmosis Water Treatment Plant Process

Under Alternative 3, the well water would pass through Reverse Osmosis (RO) treatment trains that would filter the brackish water to produce drinking water. Based on the anticipated groundwater salinity, approximately 70 percent of the brackish feed water would become potable product. The other 30 percent would become RO concentrate. The potable water would be a blend of RO product water and untreated brackish ~~well~~ water. Blending the water (while still maintaining water quality) allows the capacity of the RO treatment units to be smaller, since not all of the brackish water would need to be treated.

~~The recommendation is to construct six brackish water wells, with one well on standby. The wells would be spaced approximately 350 feet apart.~~ The RO-WTP would consist of a treatment plant building that would house the RO treatment trains and other equipment such as the brackish water feed pumps, air blowers/compressors, chemical cleaning and disinfection systems, and electrical and control panels. The treatment plan building would also likely house potable water

pumps for pumping treated water into the transmission/distribution system, and a fire pump for the fire protection system.

Reverse Osmosis Water Treatment Plant Process Location
Approximately two to three acres of land is expected to be required for the RO-WTP. Two alternative locations are being considered.

Alternative 3A
Alternative 3A would be to locate the RO-WTP near the northeast corner of the DLNR Industrial and Business Park (see Figure 5-8).

Alternative 3B
Alternative 3B would be to locate the RO-WTP at Pūlehunui South, at the same location as the S-WTP in Alternative 2B (see Figure 5-9).

Water Storage Tank
A tank would be required to store potable water prior to the water entering the distribution system, and would also likely be used as a chlorine contact tank for disinfection. Although Alternative 3 is a private system, as for Alternative 2 the recommendation is to size the storage tank according to WSS and the required volume would be 1.84 MG. The recommendation is to construct a 1.9 MG tank.

RO Concentrate Disposal
The preferred primary method of RO concentrate disposal would be to utilize disposal wells. Two disposal wells would be needed, one for back up. The wells would be located at least of 1,320 feet (¼ mile) from the brackish water supply ~~wells, and downgradient from the brackish water supply wells~~. The RO concentrate would be discharged into the groundwater at a depth where the groundwater salinity is equal to or greater than the salinity of the concentrate. This would ensure that disposal of concentrate would not adversely impact the receiving groundwater. The RO concentrate from the RO treatment process could possibly be used for irrigation of salt tolerant plants, pending further investigation.

Transmission System
All new transmission waterlines would be required. A new brackish water transmission line would be needed to convey brackish water from the brackish water ~~wells~~ source to the RO-WTP. A separate transmission line would be needed to convey RO concentrate either to the disposal wells or possibly to areas where it could be used as irrigation water. New potable and fire transmission waterlines from the RO-WTP to Pūlehunui North would need to be installed under Maui Veterans Highway at the southern intersection of the highway and Mehameha Loop. Other potable and fire transmission waterlines would convey water between DLNR and Pūlehunui South via either a route along Maui Veterans Highway or a route through Pūlehunui Motorsports Park and DLNR owned lands.

Distribution System
Waterlines would be needed to convey water to the lots within each project. There would be separate waterlines for the potable water system and fire system. Distribution waterlines would be located within roadways. Fire hydrants would be installed off the fire waterlines at a minimum of 250-foot intervals.

The rough order of magnitude cost for Water Alternative 3A is approximately $50.94M and the rough order of magnitude cost for Water Alternative 3B is approximately $56.131M. These estimates do not include interior water distribution system costs, maintenance and energy costs to run the treatment facility, and opportunity costs based on State land values.

5.8.1.4 Preferred Alternative
The preferred regional water system alternative may be Alternative 1, which is to have DWS supply water for the Infrastructure Regional Study Area. However DHHL is still evaluating the range of water alternatives described above. A major advantage of Alternative 1 would be that DWS owns and operates their water system and therefore State users of the system would not need to construct or operate a water treatment facility. With Alternatives 2 and 3, a private company would need to be hired to operate the on-site treatment facilities. An additional advantage to Alternative 1 is that the Proposed Action would be serviced by a large water system which can more easily accommodate disruptions in the system, e.g., a power failure at a well or a treatment facility. From a cost standpoint, Alternative 1 may be favorable pending further research. Despite these advantages, Alternative 1 is also the alternative with the greatest uncertainty with respect to implementation timeframes as it relates to offsite storage tank and new source development requirements. DHHL will coordinate with the County of Maui Department of Water Supply (DWS) before identifying a preferred water alternative.

DHHL expects that a regional approach to water infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination. DHHL has considered an independent alternative for water infrastructure (in which each of the two DHHL Project Areas would have its own water system, independent of other stakeholders or developments). (Refer to the Independent Alternatives Memorandum included in Appendix C.) First, an independent approach may not be financially efficient. From a cost standpoint, the most attractive independent option would be similar to water Alternative 1—connection to the County system. Under this independent approach, DWS would provide water to the DHHL Project Areas and a new storage reservoir would be required for each of the DHHL Project Areas. The reservoirs could not be located in the DHHL Project Areas due to elevation constraints, thus land would need to be secured; DWS would determine the reservoir locations, and it is anticipated that they would be located adjacent to the existing DWS Waiheʻe Tank Site. The estimated cost of construction for this independent approach is $9.723M for Pūlehunui North and $12.111M for Pūlehunui South. The DLNR projected construction cost (Munekiyo Hiraga, ~~2018~~ 2019) for an independent DLNR water system is $12M. The construction cost for an independent MRPSC water system is unknown (but assumed to be on the same order of magnitude). Therefore the cumulative construction cost of the independent approach to water

infrastructure is anticipated to be roughly $42-46M. The construction cost of water Alternative 1 is expected be approximately $31.085M (Appendix C). Second, the coordinated development of regional infrastructure may help to mitigate the cumulative impacts of the Proposed Action. (The environmental impact of multiple infrastructure projects and staggered construction phases could reasonably be expected to cause a greater nuisance than a coordinated effort, particularly in terms of traffic, noise, surface and groundwater resources, possible visual nuisance, and concerns related to construction dust and soil loss.) Thirdly, this option does not allow the Proposed Action to accommodate the PMP's infrastructure needs since each project would be addressing only its own needs. Finally, while the benefit of the independent approach allows the MOU parties to proceed with their respective developments independently of each other, a regional approach to planning is more consistent with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, wherein these parties agreed to "make their best efforts to work in a collaborative manner". As previously mentioned, the MOU was intended to allow the aforementioned agencies to benefit from economies of scale, joint infrastructure financing, planning and development, and provide significant economic benefits to the Maui community. Therefore, DHHL will continue to evaluate regional approaches to water infrastructure as long as it is reasonable and prudent to do so. Nevertheless DHHL acknowledges that if an expedited and clear timeframe for securing and developing water service is the primary consideration, then an independent approach may be preferable.

Regardless of the alternative selected, water efficiency strategies will help to mitigate the impacts of the Proposed Action on water resources, and DHHL will consider the following:

- Design buildings and landscaped areas to reduce overall water demand as much as possible.
- Use the most appropriate water quality for the projected need (balance potable and non-potable uses).
- From a regional infrastructure standpoint, it is noted that post-treatment products such as RO concentrate or R-1 recycled water, or untreated non-potable water could be used to irrigate certain areas, thereby decreasing overall potable system demand.
- Opportunities to reduce projected demands by installing rainwater catchment systems will be considered. (Given rainfall rates of 11 to 13 inches per year it is not anticipated that stormwater will be a dependable source of irrigation water. However, DHHL is open to considering potential alternative water sources such as rainwater catchment.
- Other opportunities to increase overall system efficiency may exist and DHHL will consider any that may be feasible.

Site users at the DHHL Project Areas will be encouraged to consider the following water conservation measures:

- Facility design to maximize water efficiency;
- Water efficient fixtures;

- Dual flush toilets;
- Leak detection sensors and alarms;
- Minimizing landscaped areas requiring extensive irrigation;
- Use of landscaping materials with low water needs (xeriscaping and embracing the use of native plants);
- Smart irrigation systems and moisture sensing feedback technology; and
- Use of automatic drip irrigation as the predominant delivery system.

To mitigate impacts to surface and groundwater resources, the following best management practices (BMPs) will be considered by contractors during the construction phase:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Keep runoff onsite.
- Construction exceeding one acre is required to comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements.
- Contractors will be required to provide BMPs as part of their contracts.

Refer to Section 5.8.4 and Appendix C for a detailed discussion of drainage conditions.

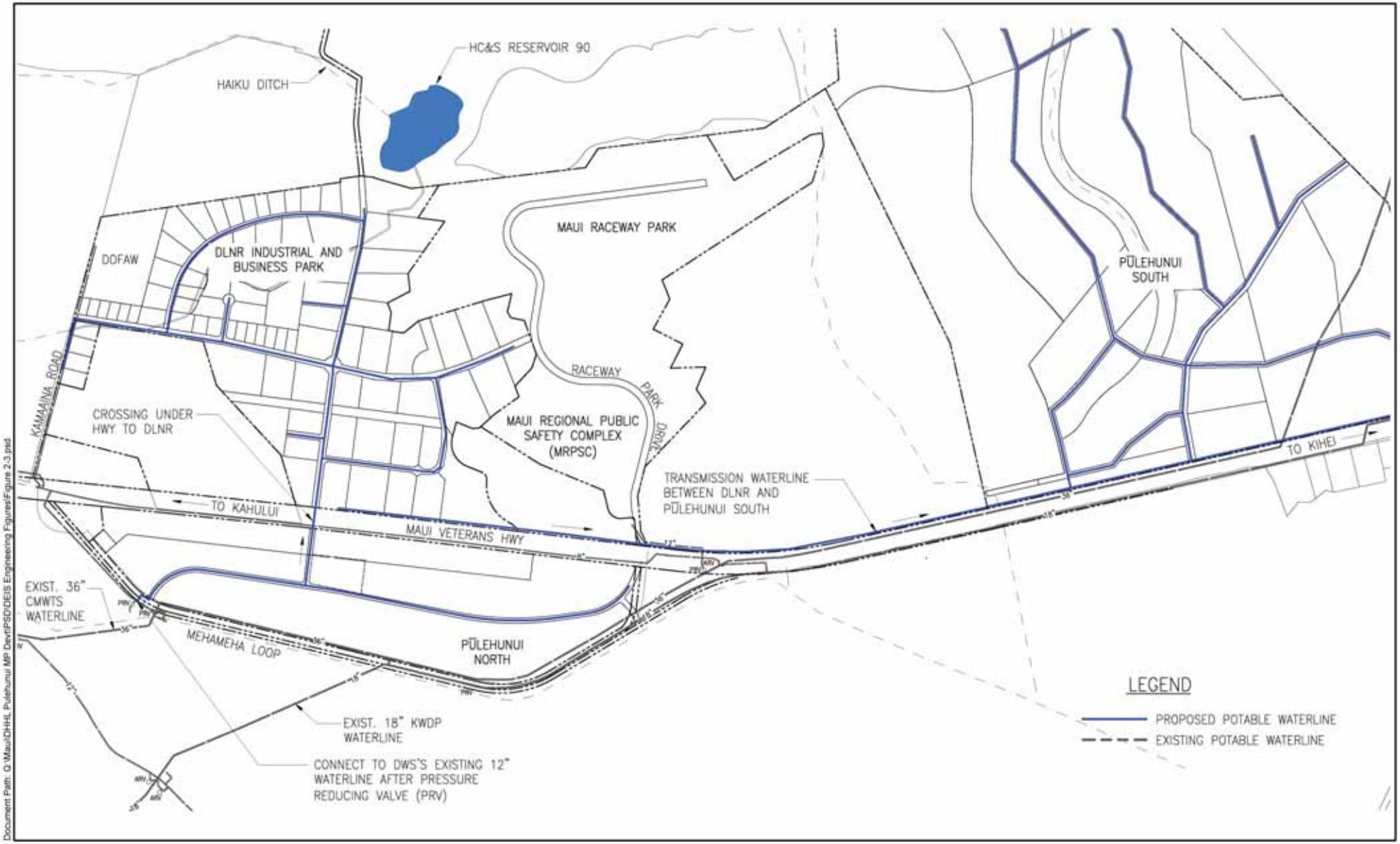

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Figure 5-5
Proposed Water Alternative 1

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

Source: Austin, Tsutsumi & Associates, Inc., 2018.
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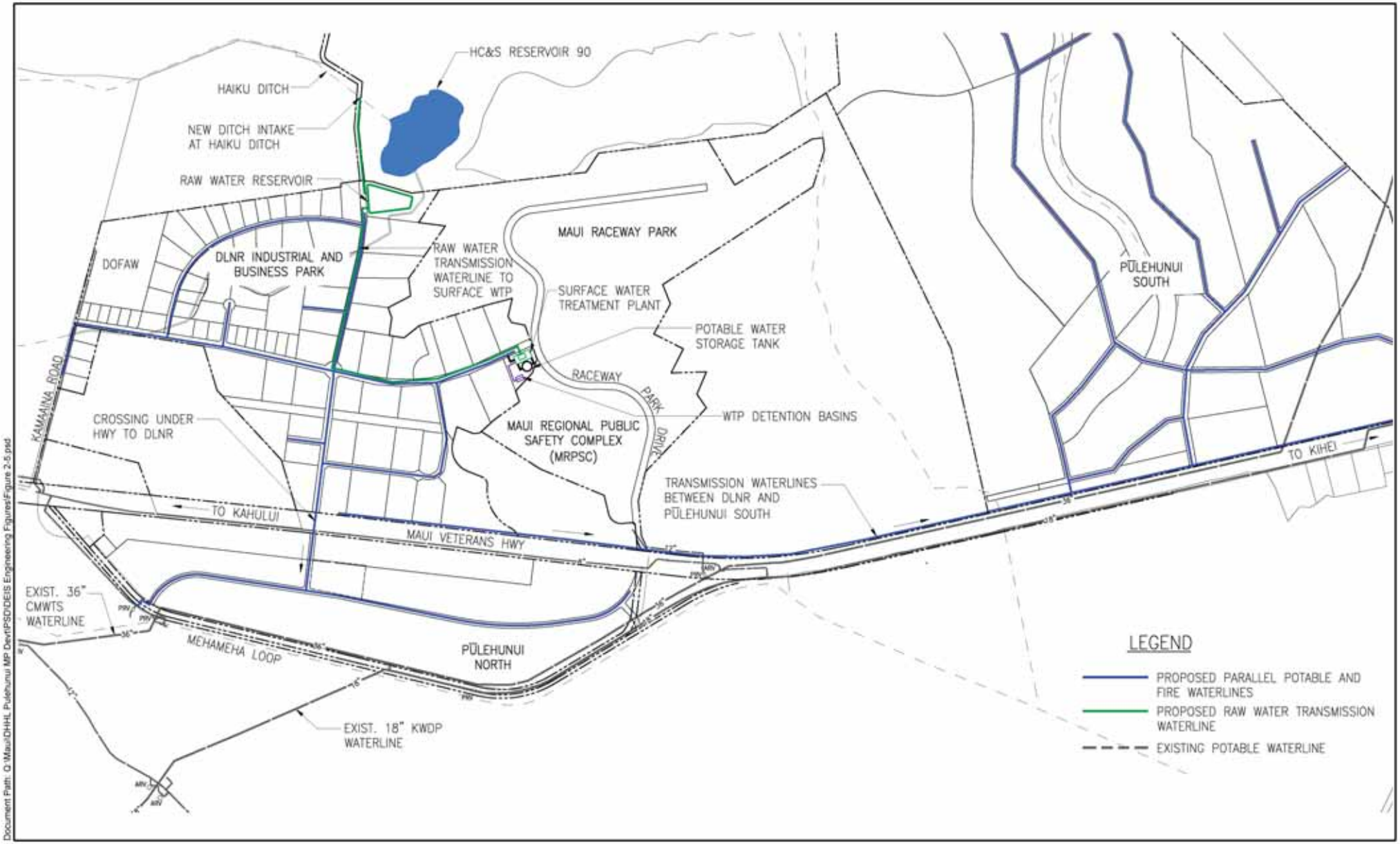

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Figure 5-6
Proposed Water Alternative 2A

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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PBR HAWAII & ASSOCIATES, INC.

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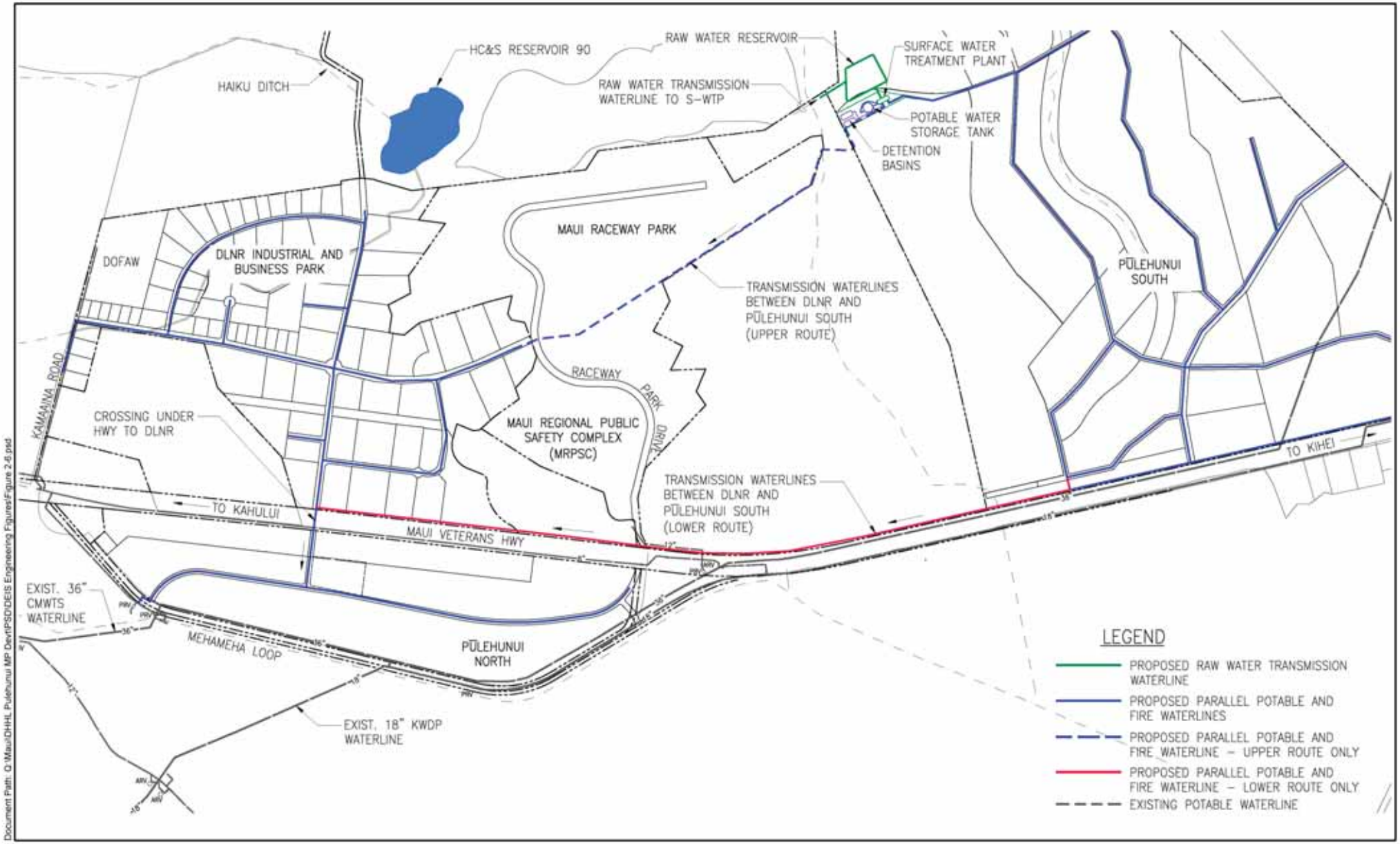

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Figure 5-7
Proposed Water Alternative 2B

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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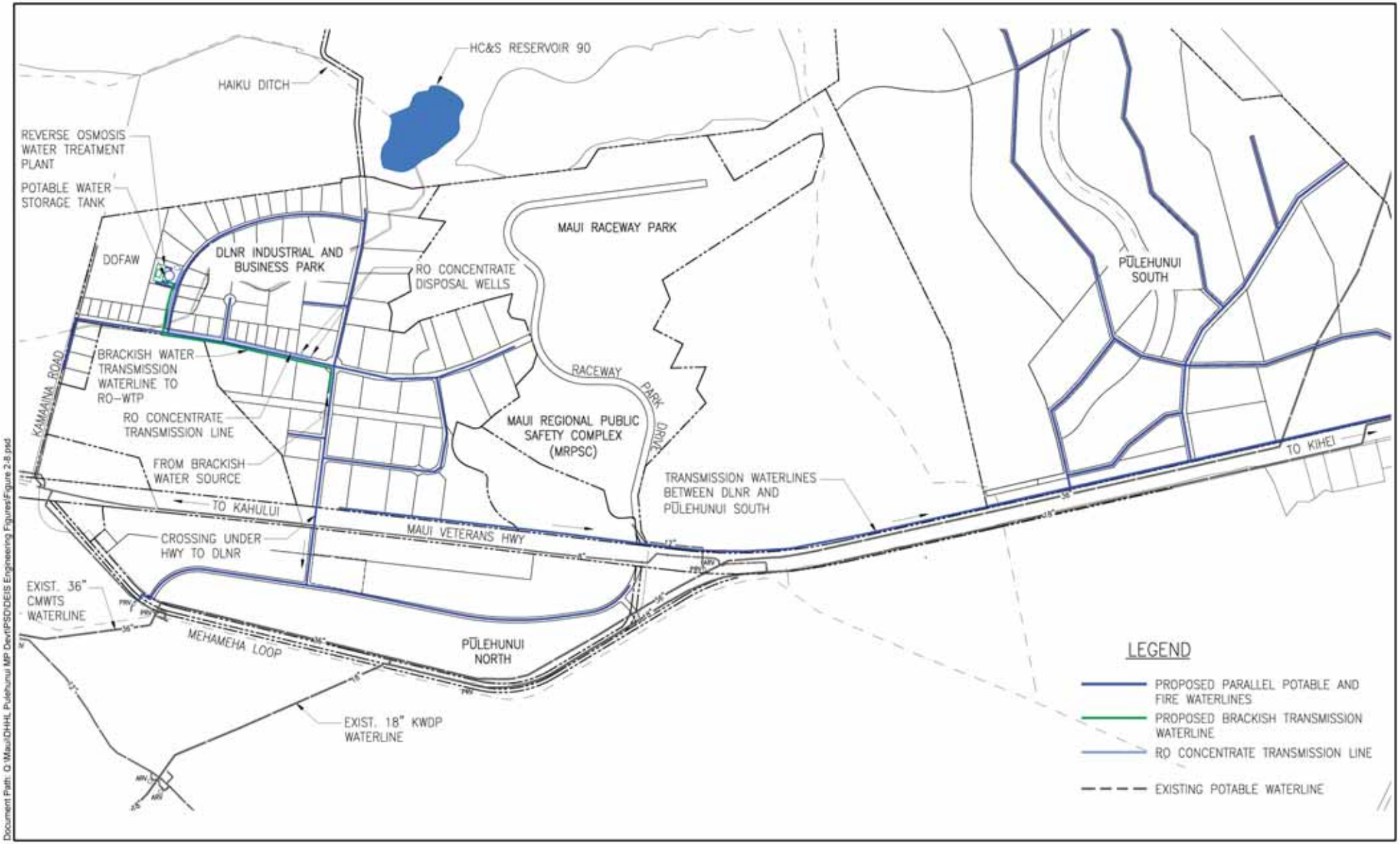

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Figure 5-8
Proposed Water Alternative 3A

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

PBR HAWAII & ASSOCIATES, INC.

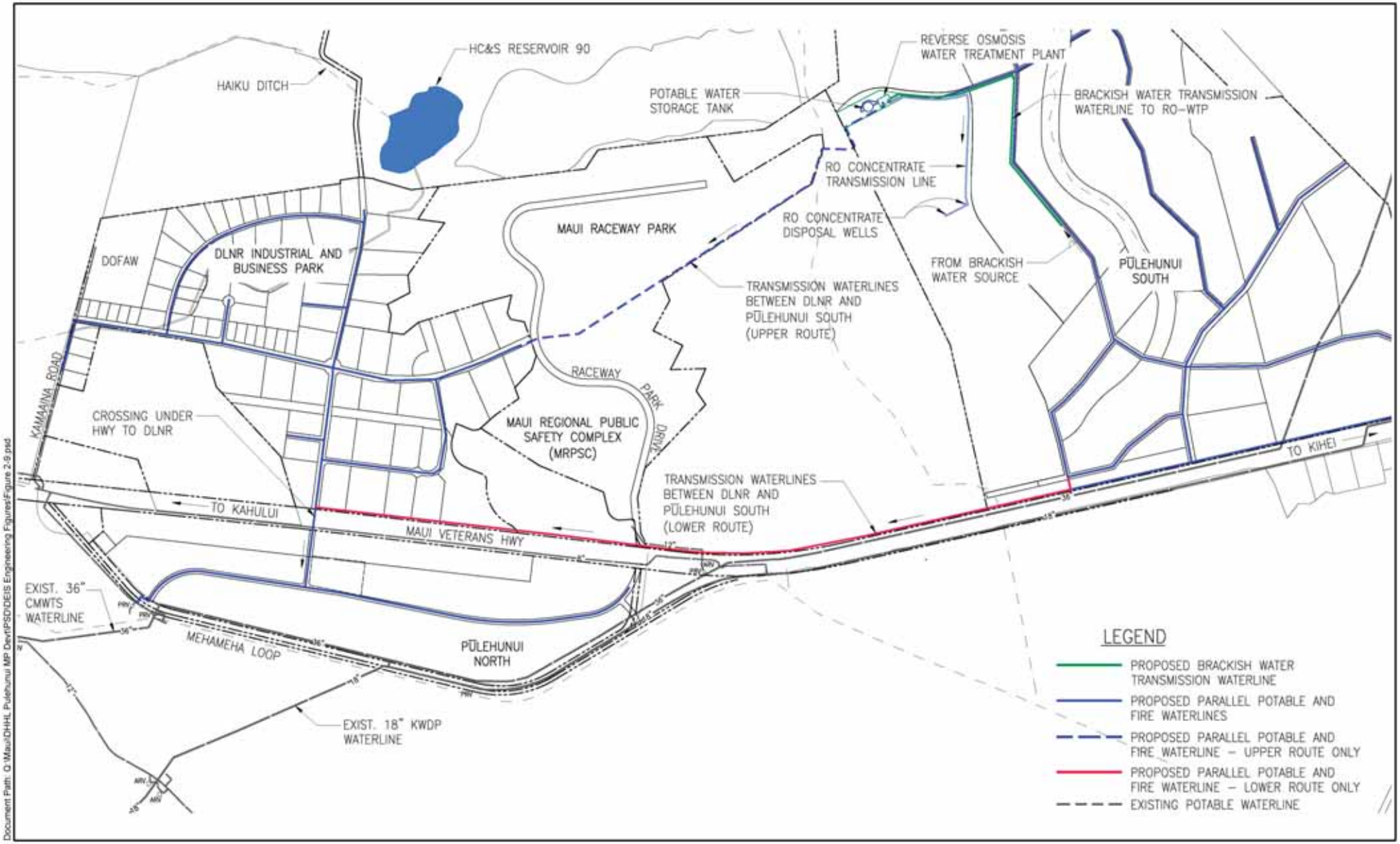

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Figure 5-9
Proposed Water Alternative 3B

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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5.8.1.5 Relationship to State Water Projects Plan

During the Draft EIS public review period, the DLNR Engineering Division wrote:

> 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.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The State Constitution, Article XI, Section 7, mandates that the State of Hawai'i is responsible to protect, control, and regulate the use of Hawai'i's water resources for the benefit of its people. Pursuant to this mandate the Fourteenth Legislature passed Act 45, the State Water Code, which was signed into law by the Governor on July 1, 1987. The Act is now codified as Chapter 174C, Hawai'i Revised Statutes (HRS). (Department of Land and Natural Resources, 2017) ~~The State Water Projects Plan (SWPP)~~

The SWPP notes possible water sources in the Pu'unēnē tract which includes the DHHL Project Areas. The SWPP also notes that a regional infrastructure master planning effort (the Proposed Action of this EIS) is underway. Per the SWPP, DHHL projected a total long-term (2016 through 2031) potable water demand of 1.7340 mgd and a total non-potable water demand of 1.8564 mgd. According to the PER (Appendix C) potable water demand is anticipated to be 0.673 mgd at Pūlehunui North and 0.215 mgd at Pūlehunui South (total 0.888 mgd). Non-potable water demand is anticipated to be 1.83 mgd at Pūlehunui South. Therefore the projected potable water demand generated by the DHHL Project Areas is well within SWPP projections with room for potential increase, and the projected non-potable water demand is within the SWPP projections as well.

5.8.2 *Irrigation Water System*

As mentioned previously, a strictly non-potable system will be used to supply irrigation water to the 146-acre area at Pūlehunui South designated for Farms. Non-potable water will also be used to irrigate other areas of Pūlehunui South, including Agricultural Homesteads, Beneficiary Gardens and other open space areas such as landscaping.

The agricultural irrigation demand is expected to range from an average day demand of 1,500 gpd/acre to a maximum day demand of 3,500 gpd/acre. The average day irrigation demand would be approximately 784,000 gpd, and the maximum day demand would be approximately 1,830,000 gpd.

The previous irrigation system for HC&S's sugar cane fields included an 18-inch supply line and parallel 15-inch irrigation line that decreased to a 10-inch irrigation line. Smaller irrigation lines branched off from these main irrigation lines to supply water to the fields. The irrigation water source was HC&S Reservoir 90, where a pump/filter station was located to filter the surface water prior to conveying the water to the fields.

One option would be to utilize, to the extent possible, the major components of the existing system, to convey the ditch water to the Pūlehunui South project site. Each lot owner/lessee would be responsible for installing their own irrigation system within their lot to irrigate their agricultural fields, as necessary. A second option would be to essentially replicate the existing irrigation system, if the existing system cannot be utilized either due to the condition of the components or issues regarding ownership.

Any new distribution irrigation lines would be located within the Pūlehunui South roads to supply irrigation water to the lots.

During the Draft EIS public review period, the State Commission on Water Resource Management (CWRM) wrote:

> The second alternative is to treat and use surface water from the East Maui Irrigation (EMI) System. The DEIS should discuss the interim instream flow standards (IIFS) for East Maui streams that supply the EM I system and whether the IIFS accommodates the proposed development.
>
> […]
>
> A separate non-potable system is also proposed to supply irrigation water for agricultural needs and landscaping. An existing HC&S system is identified as an option to meet the estimated demand of 0.784 mgd. Similar to Alternative 2, a discussion of the streams to be impacted and compliance with IIFS should be included in the DEIS.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.
None of the water or irrigation alternatives for the Proposed Action propose any amendment or alteration to the existing IIFS. The contemplated alternatives would service the Infrastructure Regional Study Area without preventing attainment of the IIFS.

5.8.3 *Wastewater System*

The County of Maui does not have a sewer collection system or any wastewater treatment plants in the vicinity of Pūlehunui. Existing developed lots adjacent to the Infrastructure Regional Study Area are serviced by on-site treatment system for wastewater disposal. The wastewater facilities nearest Infrastructure Regional Study Area are the Wailuku-Kahului (W-K) Wastewater Reclamation Facility (WWRF) and Kīhei WWRF.

Wailuku-Kahului Wastewater Reclamation Facility (W-K WWRF)
The Wailuku-Kahului (W-K) WWRF is located approximately seven miles north of Pūlehunui. The County of Maui Wastewater Reclamation Division (WWRD) has previously stated that the W-K WWRF is near capacity, and that treatment capacity is allocated on a first come first served basis with multiple requests already in place for capacity allocation. WWRD does not plan on expanding the capacity of the W-K WWRF due to issues associated with the location of this WWRF

being adjacent to the shoreline and within a coastal flood and tsunami zone. Due to the uncertainty of whether wastewater could be treated at the W-K WWRF, and the cost of conveying the wastewater to the WWRF, this alternative was not pursued further.

Kīhei Wastewater Reclamation Facility (Kīhei WWRF)

The Kīhei WWRF, which produces R-1 water, is located approximately five miles south of Pūlehunui along Piʻilani Highway. The Kīhei WWRF serves South Maui from Wailea to Sugar Beach and as far north as Waipuʻilani Road and as far mauka as the Elleair Golf Course. The R-1 effluent that the WWRF currently produces is pumped to a storage tank above the WWRF, whereupon it is distributed for irrigation use and/or disposed of via injection wells.

The design capacity of the Kīhei WWRF is 8.0 mgd, however WWRD stated that 7.0 mgd has already been allocated to other projects. With 87 percent of the design capacity of the WWRF already allocated, it is not known whether the facility will be able to serve the Infrastructure Regional Study Area. Flow to the WWRF is allowed on a first come first served basis. Therefore, available capacity would depend on the number of permitted projects developed prior to the completion of projects within the Infrastructure Regional Study Area. The Kīhei District wastewater collection system consists of a series of wastewater pump stations (WWPSs). If the wastewater from Pūlehunui were to be transferred to this existing system, multiple WWPSs would be impacted by the additional flows.

Potential Impacts and Mitigation Measures

<u>During the Draft EIS public review period, The County of Maui Department of Environmental Management wrote that its Wastewater Reclamation Division had no comments.</u>

DHHL consulted the Maui County Department of Parks and Recreation (DPR) on the EISPN and received a comment that DPR is creating a master plan for the Pūlehunui Motorsports Park (PMP). DPR further commented that the PMP currently lacks infrastructure for potable water, wastewater, electricity, storm water management, communication, or other basic services. Given its proximity to the Infrastructure Regional Study Area and anticipated continued use as a motorsports park, DHHL's engineering and traffic studies for the Proposed Action will take into account the water, wastewater, and traffic demand generated by the PMP (in addition to the parties to the MOU). DHHL therefore anticipates a positive impact to the DPR PMP by partially supporting its infrastructure needs. DHHL anticipates further positive impacts to regional infrastructure because the Proposed Action will accommodate projected infrastructure needs of not just State agencies, but a County agency as well. Refer to Appendix B for a copy of the DPR comment letter and DHHL's response. A full list of consulted agencies can be found in Section 9.3.

Estimated Sewer Flows

The Infrastructure Regional Study Area includes projects proposed by various government agencies including residential, light industrial, commercial and hotel uses. Preliminary

wastewater contributions were estimated as follows, based on WWRD's Wastewater Flow Standards. Refer to Appendix C.

Residential. Residential flows will apply to the Subsistence Agriculture portion of Pūlehunui South. Residential Demand is projected at 350 gpd/lot.

Light Industrial. Light Industrial flows will apply to various portions of the Infrastructure Regional Study Area. The light industrial/agricultural flow was projected at 25 gpd/employee, at 1 employee per 500 square feet of floor area.

Commercial. Commercial flows will apply to various portions of the Infrastructure Regional Study Area. Refer to Appendix C. The commercial flow was projected at 15 gpd/employee, at 1 employee per 350 square feet of floor area

Hotel. Hotel flows will apply to a portion of Pūlehunui North as a way to account for potential developments at this property consistent with DHHL's Maui Island Plan designation. The hotel flow was projected at 300 gpd/room.

Given the information above, a design average daily flow of ~~657,000~~ 618,000 gpd will be generated by Infrastructure Regional Study Area at full buildout.

The PER prepared for the Proposed Action assessed four alternatives for wastewater management (see ~~**Error! Reference source not found.**~~ Figure 5-10 through Figure 5-18). Alternative 1 (1A and 1B) would involve collecting wastewater from the Infrastructure Regional Study Area and transferring it to the Maui County Kīhei WWRF for treatment. Alternative 2 (2A, 2A-1, 2B, and 2C) would involve collecting the wastewater from the Infrastructure Regional Study Area and transferring it to a regional WWRF located either on DLNR or DHHL property where developments are being proposed. Alternative 3 (3A and 3B) would involve a regional WWRF located within adjacent DLNR properties where no developments are being proposed in the foreseeable future. Finally, Alternative 4 would involve pumping all wastewater generated at the Infrastructure Regional Study Area to a future County of Maui Regional WWRF located south of the Infrastructure Regional Study Area, along Kuihelani Highway.

Table 5-5:Wastewater System Alternatives

Alternative	Treatment Facility	Location
1A	Existing County WWRF	Upgrade collection system along S. Kīhei Road. Treat at Kīhei WWRF.
1B	Existing County WWRF	New collection system along ~~Liloa~~ Līloa Drive. Treat at Kīhei WWRF.
2A	New Private WWRF	Pūlehunui South, northern boundary
2A-1	New Private WWRF	Pūlehunui South, northern boundary
2B	New Private WWRF	DLNR Industrial and Business Park, southwest portion

2C	New Private WWRF	Pūlehunui South, northeast/mauka portion
3A	New Private WWRF	DLNR (2) 3-8-008-038, southern boundary
3B	New Private WWRF	DLNR (2) 3-8-008-001, east/mauka portion
4	New County WWRF	County property along Kuihelani Highway, outside Infrastructure Regional Study Area; interim facility within Infrastructure Regional Study Area at Pūlehunui North

5.8.3.1 Alternative 1

Alternative 1 (1A and 1B) would involve collecting the wastewater from the Infrastructure Regional Study Area and transferring the collected wastewater to the County's Kīhei WWRF by way of new pump stations and force mains. WWRF is currently conducting a study to upgrade the County's wastewater collection system to the Kīhei WWRF.

Two options under consideration by WWRD are (Option A) upgrading the collection system along South Kīhei Road and (Option B) adding a new collection system on ~~Liloa~~ Līloa Drive. WWRD has not yet selected the option upgrade they will pursue. Therefore the PER considers both options.

Alternative 1A

Alternative 1A describes connection to the Option A upgrade. Under Alternative 1A, wastewater would be conveyed to the County's upgraded collection system on South Kīhei Road. This alternative considers the installation of two pump stations and a force main line that will convey wastewater flow from the Infrastructure Regional Study Area to the South Kīhei Road. The first pump station (Pump Station No. 1) would be located at the southern end of Pūlehunui North, and would collect wastewater generated by Pūlehunui North, the DLNR Industrial and Business Park, MRPSC, and the Pūlehunui Motorsports Park. Each of these individual project sites could use gravity sewer lines to transfer wastewater to Pump Station No. 1. From Pump Station No. 1, a force main would be constructed outside (with portions within) the Maui Veterans ~~Hwy.~~ Highway right-of-way to a second pump station (Pump Station No. 2). Pump Station No. 2 would collect and transfer wastewater generated from by Pūlehunui South and Pump Station No. 1. Pump Station No. 2 would then transfer the wastewater to the County's upgraded system on South Kīhei Road (see ~~**Error! Reference source not found.**~~ Figure 5-10).

A new reclaimed water line from the County's reclaimed water system would be needed to service the agricultural needs for Pūlehunui South. The reclaimed water line would traverse through various private properties with a connection at Līpoa Street. WWRD stated that they will not allow the Proposed Action's wastewater flows to connect to the Kīhei wastewater system for the following reasons:

1. The Proposed Action's wastewater flows are not generated in the Kīhei area.
2. The Department of Health (State of Hawaii) has advised WWRD to decentralize their treatment plants.

3. WWRD must eliminate their existing injection wells at the Kīhei WWRF. Added flows to the treatment plant would require upgrades to their R-1 Reclaimed Water System.

The rough order of magnitude cost to install the offsite improvements for Alternative 1A wastewater system is approximately $13.6M. A reclaimed waterline from the County's reclaimed water system to Pūlehunui South would cost approximately $8M. Total cost for this alternative is $21.6M. This total cost does not include a pro-rata share of the cost to the County's Option A upgrade, or onsite transmission.

Considerations for this alternative are as follows:
1. Although this alternative entails the lowest improvement costs, the stakeholder's pro-rata shares to connect to the County's system is not known. Additional costs to upgrade the County's SPS No. 2 pump station will be required.
2. Installation of the reclaimed waterline involves negotiation and land acquisition from private land owners.
3. No maintenance and operations expenses incurred by the stakeholders at the treatment plant facility.
4. WWRD will not allow the Proposed Action to connect to their Kīhei wastewater system.
5. If WWRD had allowed the Proposed Action to connect to their Kīhei wastewater system, there is still uncertainty as to when the County upgrades would be completed and may not accommodate the schedule of the Proposed Action. As such, a temporary wastewater treatment facility would need to be installed prior to any development.

Alternative 1B
Alternative 1B describes connection to the Option B upgrade. Under Alternative 1B, wastewater would be conveyed to the County's upgraded collection system at the North/South Collector area. This alternative considers the installation of two new pump stations, force mains and a new gravity collection system along ~~Liloa~~ Līloa Drive. The upgraded collection system originates at Kaonoulu Estates and terminates at the Kīhei WWRF. To connect to this proposed County system, the same two pump stations and force main would be required as in Alternative 1A. Additional force main from Pump Station No. 2 will follow within the Piʻilani Highway right-of-way until it terminates at a gravity manhole that feeds the County's new pump station located along Kenolio Street.

A new reclaimed water line from the County's reclaimed water system would be needed to service the agricultural needs for Pūlehunui South. The reclaimed water line would traverse through various private properties with a connection at Līpoa Street. As mentioned in Alternative 1A, WWRD stated that they will not allow the Proposed Action's wastewater flows to connect to the Kīhei wastewater system (see Figure 5-11).

The rough order of magnitude cost to install the offsite improvements for Alternative 1B wastewater system is approximately $14.9M. A reclaimed waterline from the County's reclaimed water system to DHHL South site would cost approximately $8M. Total cost for

this alternative is $22.9M. This total cost does not include a pro-rata share of the cost to the County's Option B upgrade, or onsite transmission.

Considerations for Alternative 1B are the same as those for Alternative 1A.

5.8.3.2 Alternative 2

Alternative 2 (2A, 2A-1, 2B, and 2C) would involve collecting the wastewater from the Infrastructure Regional Study Area and transferring it to a regional WWRF located either on DLNR or DHHL property where developments are being proposed.

The same WWRF and disposal system would be used for the following Alternatives 2A, 2A-1, 2B, 2C, 3A and 3B. The WWRF would be designed to produce R-1 Water, in accordance with the State of Hawaii Department of Health (DOH) "Reuse Guidelines", January 2016. This would allow for spray irrigation, surface drip or subsurface drip irrigation reuse with minimal restrictions. Land area required to facilitate an R-1 system is estimated to be 2 acres for the wastewater treatment facility only. Given the projected demand for irrigation, the amount of R-1 effluent to be used as irrigation will not be enough and must be supplemented if the entire projected farm area within Pūlehunui South is to be irrigated. A backup system of effluent disposal would be required to address periods of rainy weather. The recommendation is to use a soil aquifer treatment system (SAT) to dispose of any excess R-1 Water, and discharges that do not meet (non-compliant) R-1 water requirements as shown in Figure 3-1 of the PER. The SAT would be sized based upon infiltration tests prior to design. Approximately 10 acres of land is preliminarily determined for the WWRF including a secondary means of disposal. Refer to Appendix C for further details on the WWRF design.

Alternative 2A

Alternative 2A investigates a private WWRF on DHHL Pūlehunui South along the northern property line. This alternative would require a new trunk sewer ~~on the north side~~ in the vicinity of Maui Veterans Highway. Sewage from Pūlehunui North would be collected by a new gravity sewer line located within Pūlehunui North. Wastewater from all properties north of Pūlehunui South would flow through these collection sewers to a pump station at Pūlehunui North, then would travel via a new force main to the WWRF where they would be treated along with wastewater from Pūlehunui South (see Figure 5-12).

The rough order of magnitude cost to install the stakeholder improvements for Alternative 2A wastewater system is approximately $25.45M, excluding onsite transmission. The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Considerations for this alternative are as follows:

1. The schedule to install the private system is not dependent on the County's schedule.
2. Initial costs for the private system are high.
3. Operation and maintenance costs are high.

4. R-1 effluent generated from the private WWRF can be used to irrigate the planned agricultural farmland without the construction of long pipe line routes. This property has enough land area to provide a secondary means of disposal as required by the State of Hawaii, Department of Health without reducing revenue generation of the property.
5. The WWRF is within close proximity to the Keālia Pond National Wildlife Refuge

Alternative 2A-1

Wastewater Alternative 2A-1 is a refinement of Wastewater Alternative 2A that consists of a private WWRF on Pūlehunui South Project along the northern property line (2,000 feet from Maui Veterans Highway). Refer to Figure 5-12-A and Appendix C Addendum 1.

To meet immediate regional wastewater needs while maximizing the use of available funding, the proposed WWRF would not accommodate the full buildout wastewater demand of the Infrastructure Regional Study Area. Rather, it would be upgraded to a larger capacity when funds become available and as demand grows. This eventual, full-sized WWRF would likely be in the location shown as wastewater Alternative 2C (refer to Figure Figure 5-14).

The capacity of the temporary WWRF would be 90,000 gpd which is roughly 15% of the full buildout design wastewater flow (618,000 gpd).

As with wastewater Alternative 2A, wastewater from all properties north of Pūlehunui South would flow through collection sewers to a pump station at Pūlehunui North, then would travel via a new force main to the WWRF where it would be treated along with wastewater from Pūlehunui South.

As with wastewater Alternative 2A, wastewater would be treated to the R-1 Water Standards in accordance with DOH guidelines, and disposed of via one of two soil aquifer treatment (SAT) ponds and/or utilized to irrigate portions of Pūlehunui South.

An alternative location for the temporary WWRF could be that of wastewater Alternative 2C (the likely site of the full-sized WWRF), approximately 6,000 feet from Maui Veterans Highway. Currently this option is cost prohibitive, but it confers two main logistical advantages. First, R-1 effluent could irrigate portions of Pūlehunui South via gravity lines, due to elevation. Second, less extensive efforts would be needed to upgrade the temporary facility, because the temporary and full-sized facilities would be located at the same site.

The substantially higher cost of this alternative location for the temporary WWRF is due to its distance from the highway; unless additional funding is unexpectedly obtained prior to the bidding process, it is not anticipated that the Alternative 2C site would be preferred for the temporary WWRF.

Alternative 2A-1 is anticipated to adequately meet immediate regional wastewater needs and would be designed to fully utilize available funding.

The rough order of magnitude cost to install for Alternative 2A-1 is approximately $17.26M. (The cost for the temporary WWRF at the Alternative 2C site would be approximately $22.45M.) The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Ultimately, either contemplated location for Alternative 2A-1 would meet long-term regional needs for a private WWRF – either through a permanent expansion of the temporary facility at location 2A-1, long-term operation of moderately-sized facilities at both locations 2A-1 and 2C, or the eventual relocation of wastewater operations from location 2A-1 to location 2C.

Alternative 2B

Alternative 2B, investigates a private WWRF on DLNR Industrial and Business Park along the southwesterly portion of that property, as shown in Figure 5-13 (see also Figure 3-6 of the PER).

At this elevation, the majority of wastewater flows must be pumped from all stakeholders to the WWRF. A shared pump station will be located at DHHL North that will collect all wastewater generated from all stakeholders as identified in Alternative 2A. DHHL South will require its own pump station that will transport all the wastewater flow generated by the Infrastructure Regional Study Area, and a force main running parallel with the Maui Veterans Highway to the stakeholder Pump Station.

Locating the WWRF here has no apparent advantages. As stated in Alternative 2A, the primary means of disposal is irrigation. A minimum of 60.3 acres within the DLNR Industrial and Business Park is required. The rough order of magnitude cost to install the stakeholder improvements for Alternative 2B wastewater system is approximately $24.2M, excluding onsite transmission. The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Considerations for this alternative are as follows:

1. The schedule to install the private system is not dependent on the County's schedule.
2. Initial costs for the private system is high.
3. Operation and maintenance costs are high.
4. Land used for the WWRF will entail lost revenues for DLNR.
5. R-1 effluent generated from the private WWRF can be used to irrigate DLNR open spaces, MRPSC and Pūlehunui Motorsports Park.
6. There may be potential odor and noise complaints from adjacent lessees.

Alternative 2C

Alternative 2C investigates a private WWRF at the eastern corner of the DHHL Pūlehunui South area as shown on Figure 5-14 (see also Figure 3-7 of the PER).

The advantage of this location is that it is fairly remote meaning odor and noise emitting from the facility will not bother nearby occupants. During a natural disaster, any subsequent spills will not affect the Keālia Pond National Wildlife Sanctuary due to the large land buffer. There is a nearby dry gulch which can be bermed to prevent spillage from entering. The elevation of this alternative location may allow for gravity irrigation to be used in adjacent farmlands with reclaimed water. Agriculture lands around the WWRF will still require pumps to pressurize the irrigation system.

The disadvantage of this alternative is the costs associated with construction and operations. Due to the remote location, longer piping and larger pumps will be required to operate the facility and serve the Infrastructure Regional Study Area and PMP as needed.

The rough order of magnitude cost to install the stakeholder improvements for Alternative 2C wastewater system is approximately $27.03M, excluding onsite transmission. The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Considerations for this alternative are as follows:
1. The schedule to install the private system is not dependent on the County's schedule.
2. Initial costs for the private system are high.
3. Operation and maintenance costs are high.
4. R-1 effluent generated from the private WWRF can be used to irrigate the planned agricultural farmland. This property has enough land area to provide a secondary means of disposal as required by the State of Hawaii, Department of Health without reducing revenue generation of the property.
5. The WWRF is far away from the Keālia Pond National Wildlife Sanctuary.

5.8.3.3 Alternative 3

Alternative 3 (3A and 3B) identifies potential areas where a regional WWRF can be located within adjacent DLNR properties where no developments are being proposed in the near future.

The same WWRF and disposal system would be used for the following Alternatives 2A, 2A-1, 2B, 2C, 3A and 3B. The WWRF would be designed to produce R-1 Water, in accordance with the State of Hawaii Department of Health (DOH) "Reuse Guidelines", January 2016. This would allow for spray irrigation, surface drip or subsurface drip irrigation reuse with minimal restrictions. Land area required to facilitate an R-1 system is estimated to be 2 acres for the wastewater treatment facility only. Given the projected demand for irrigation, the amount of R-1 effluent to be used as

irrigation will not be enough and must be supplemented if the entire projected farm area within Pūlehunui South is to be irrigated. A backup system of effluent disposal would be required to address periods of rainy weather. The recommendation is to use a soil aquifer treatment system (SAT) to dispose of any excess R-1 Water, and discharges that do not meet (non-compliant) R-1 water requirements as shown in Figure 3-1 of the PER. The SAT would be sized based upon infiltration tests prior to design. Approximately 10 acres of land is preliminarily determined for the WWRF including a secondary means of disposal. Refer to Appendix C for further details on the WWRF design.

Alternative 3A

Alternative 3A investigates a private WWRF along the southern property line of the DLNR parcel located between the Pūlehunui Motorsports Park and DHHL Pūlehunui South as shown on Figure 5-15 (see also Figure 3-8 of the PER). The type of processes involved and required land size is similar to what was described under Alternative 2A. Nothing is being presently planned for this area and there is ample space for future expansion.

The rough order of magnitude cost to install the stakeholder improvements for Alternative 3A wastewater system is approximately $25.62M, excluding onsite transmission. The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Considerations for this alternative are as follows:

1. The schedule to install the private system is not dependent on the County's schedule.
2. Initial costs for the private system are high.
3. Operation and maintenance costs are high.
4. The parcel is currently zoned as "agriculture". Therefore rezoning or a Special Use Permit is required.
5. R-1 effluent generated from the private WWRF can be used to irrigate DLNR open spaces, MRPSC and Pūlehunui Motorsports Park.
6. The WWRF is within close proximity to the Keālia Pond National Wildlife Sanctuary.

Alternative 3B

Alternative 3B investigates a private WWRF on a DLNR owned-71 acre flag lot east of the DLNR Industrial and Business Park and adjacent to the existing HC&D quarry as shown in Figure 5-16 (see also Figure 3-9 of the PER).

The rough order of magnitude cost to install the stakeholder improvements for Alternative 3B wastewater system is approximately $28.053M, excluding onsite transmission. The operation and maintenance costs for this private facility, which includes associated electrical, maintenance, equipment repair and chemical costs can exceed $100,000 per month.

Considerations for this alternative are as follows:
1. The schedule to install the private system is not dependent on the County's schedule.
2. Initial costs for the private system are high.
3. Operation and maintenance costs are high.
4. The parcel is currently zoned as "agriculture". Therefore rezoning or a Special Use Permit is required.
5. R-1 effluent generated from the private WWRF can be used to irrigate DLNR open spaces, MRPSC and Pūlehunui Motorsports Park.
6. The WWRF is isolated from existing and planned developments and Keālia Pond.
7. There is room for future facility expansion.
8. An R-2 WWRF is possible, although installation costs will be higher than an R-1 facility.
a. An R-2 WWRF facility is cost effective operationally.
b. Initial construction costs for an R-2 facility are higher due to longer force mains, water and fire protection, and electrical and communication applications.

5.8.3.4 Alternative 4

Alternative 4 would involve pumping all wastewater generated at the Infrastructure Regional Study Area to a future County of Maui Regional WWRF located south of the Infrastructure Regional Study Area, along Kuihelani Highway.

Alternative 4 describes the conveyance of regional wastewater flows to a newly proposed wastewater treatment facility located along Kuihelani Highway. The proposed treatment facility is known as the Central Maui WWRF and is located approximately 2 miles away from the DHHL North site. The location is shown in Figure 5-17.

WWRD staff have expressed interest in Alternative 4. WWRD noted that this may be the most feasible option given the joint effort to fund the construction of the WWRF and given that the new facility would have a disposal method that is environmentally acceptable. WWRD is proposing to commence on obtaining funds, and the entitlement/design process for Alternative 4, with the facility anticipated to be complete in 2025.

A series of pump stations and force mains are proposed from Pūlehunui North through A&B-owned properties with connection to the new Central Maui WWRF. The system would pump wastewater from the Infrastructure Regional Study Area to the new Central Maui WWRF.

The status of Alternative 4 is still in preliminary stages; if completion of the new WWRF does not meet with the DHHL schedule, an interim collection and treatment system can be designed and constructed and would service the Infrastructure Regional Study Area until completion of the Central Maui WWRF. The Alternative 4 interim solution consists of a series of pump stations and force mains which would collect and transfer wastewater to a temporary WWRF (see Figure 5-18). A pump station at Pūlehunui North would be sized for future, long-term use but would also suit the interim conditions and pump the collected wastewater to the temporary WWRF. The use of R-1 water quality effluent for irrigation within the Infrastructure Regional Study Area is not considered to be feasible under Alternative 4, due to the considerable distance across which R-1

water would have to be transmitted from the ~~WWTF~~ treatment facility. The expectation is that any R-1 effluent produced by the ~~WWTF~~ treatment facility would be used for irrigation during most of the year, thereby reducing the demand for irrigation water. Refer to Appendix C for a full discussion of the Alternative 4 interim solution.

The rough order of magnitude cost to install the stakeholder improvements for Alternative 4 wastewater system is approximately $18.07M, excluding onsite transmission. In addition, the pro-rata contribution to the new Central Maui WWRF is estimated at approximately $9.55M. In addition the Alternative 4 interim wastewater facility has a rough order of magnitude cost of $5.52M.

Considerations for this alternative are as follows:
1. WWRD is in agreement with this option and will allow the Proposed Action to connect to this new facility.
2. Installation of the force main and pump stations involve negotiation and land acquisition from private land owners.
3. No maintenance and operations expenses would be incurred by the stakeholders at the treatment plant facility.
4. There is uncertainty as to when the County will complete the facility and may not accommodate the schedule of the Proposed Action. As such, a temporary wastewater treatment facility must be installed prior to any development.

5.8.3.5 Preferred Alternative

~~The preferred wastewater system alternative is currently Alternative 4, which is to connect to and coordinate on the County's newly proposed Central Maui WWRF. The primary advantage of Alternative 4 is that the MOU parties will not have to operate and maintain a wastewater treatment facility. Further, wastewater Alternative 4 has the advantage of being serviced by a large water system which can more easily accommodate disruptions in the system (similar to water Alternative 1). WWRD would be operating and maintaining this wastewater treatment facility and has expressed agreement with the State connecting to this facility.~~

~~The use of R-1 water quality effluent for irrigation within the Infrastructure Regional Study Area is not considered to be feasible under Alternative 4, due to the considerable distance across which R-1 water would have to be transmitted from the WWTF. The expectation is that any R-1 effluent produced by the WWTF would be used for irrigation during most of the year, thereby reducing the demand for irrigation water.~~

The previously preferred wastewater system alternative was Alternative 4, which is to connect to and coordinate on the County's newly proposed Central Maui WWRF. The Draft EIS included a detailed discussion of the advantages of Alternative 4, based on available information at the time. Based on subsequent consultation with agency stakeholders and continuing technical studies, the preferred alternative is currently Alternative 2A-1 which represents a refinement of wastewater Alternatives 2A and 2C.

As previously noted, under Alternative 2A-1, the Infrastructure Regional Study Area would be served by a treatment facility in the location of Alternative 2A. The facility would be smaller than that shown for Alternative 2A and would be intended as an interim facility, able to serve the region for 10 to 15 years treating up to 90,000 gpd of wastewater. As buildout in the region progresses, the facility could be upgraded from its existing footprint, relocated to and/or expanded at the site identified in Alternative 2C, or the land could be repurposed and wastewater routed to the Central Maui WWRF identified in Alternative 4. A major benefit of upgrading the facility at its existing footprint would be to avoid disrupting other land uses that may have become established at Pūlehunui South and the surrounding area, which may make relocation unfavorable. A major benefit of relocation to Alternative 2C would be maximizing the distance between the facility and Keālia Pond, and positioning a reliable supply of R-1 water for efficient distribution at Pūlehunui South. As noted in the Draft EIS, a major benefit of routing all wastewater to the Central Maui WWRF in the long term would be the relief of a considerable financial and logistical maintenance burden from the State, although further analysis would be needed to determine whether these benefits are outweighed by the cost of maintaining extensive offsite transmission infrastructure.

In summary, the Alternative 2A-1 treatment facility may be expanded, relocated, and/or repurposed in the future, at which point impacts would be more similar to those under Alternative 2A, 2C, or 4. This EIS therefore addresses the impacts of a range of future improvements with respect to Alternative 2A-1.
The rationale for the new preferred design is as follows.

First, continuing conversations with the County of Maui indicate that funding has not been secured for the Central Maui WWRF, and the completion date is unknown. Given that the Regional Infrastructure Master Plan assumes that construction would commence in 2020-2028 with complete buildout by 2038, sound planning requires that the proposed action rely on infrastructure alternatives whose timeline is appropriate to service the Infrastructure Regional Study Area. The ultimate demand of the Infrastructure Regional Study Area at full buildout (approximately 618,000 gpd at buildout) exceeds the interim capacity (90,000 gpd), but Alternative 2A-1 will be designed to accommodate substantial interim regional demand and is appropriately sized for temporary use. Construction of Alternative 2A-1 could be completed well in advance of regional demand, with a target date of 2023 if construction commences in fall 2020. Preparation to commence on the design for Alternative 2A-1 is underway and the target design completion date for the pump stations, gravity sewer lines and temporary WWRF is anticipated for the end of 2019.

Second, the refinement of Alternative 2A is designed to maximize use of currently available funding, ensuring that the temporary facility will service the Infrastructure Regional Study Area without the need to secure immediate additional funding. As noted in Section 3.4.1, the wastewater improvements portion of the Proposed Action has been appropriated $17.5M. While DHHL and/or other State agencies continue to consider potential sources of further funding, the preliminary cost of Alternative 4 substantially exceeds the current appropriation. (As noted

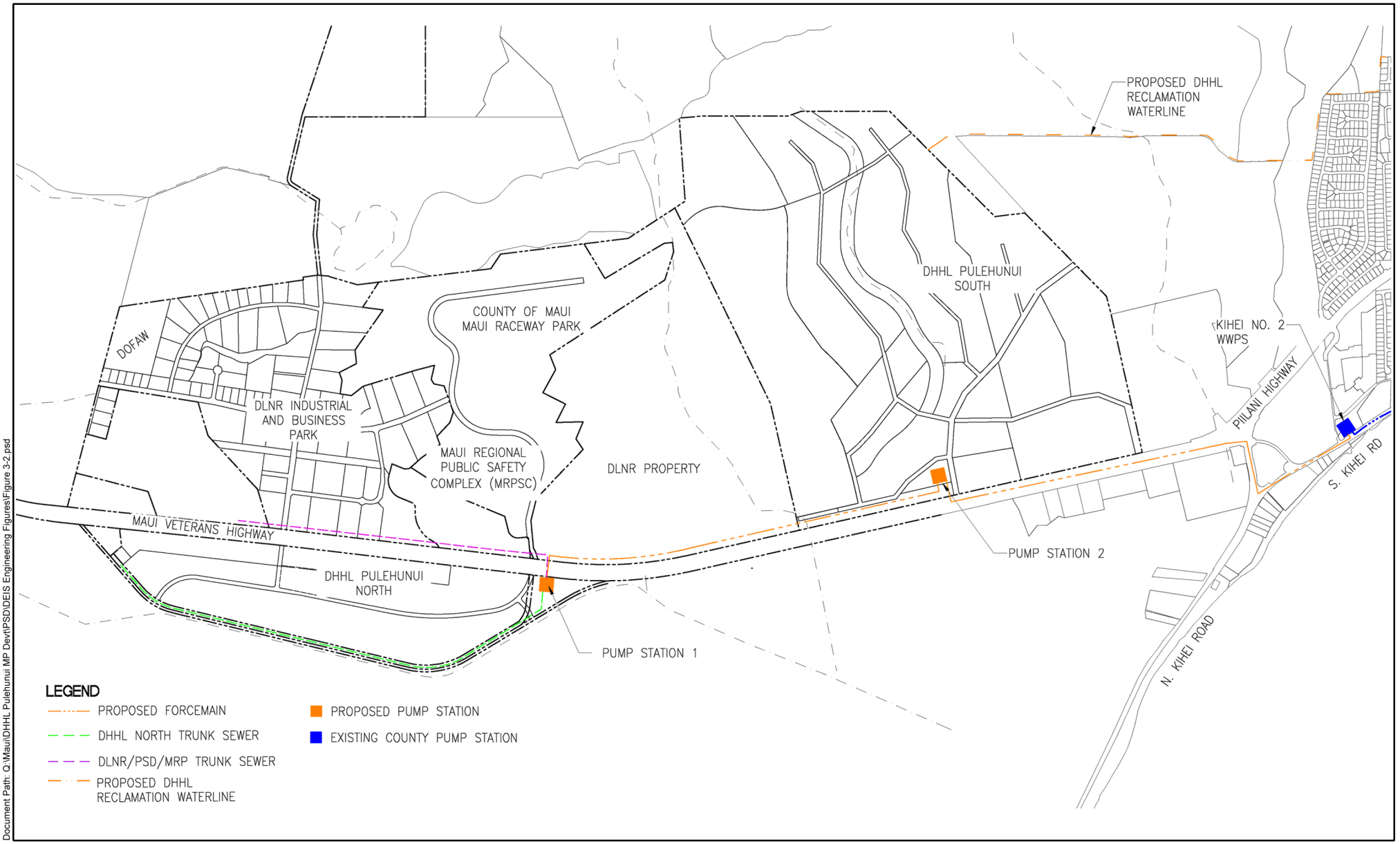
above, the rough order of magnitude cost of Alternative 4 is $33.14M including the pro-rata contribution. On top of this estimate, DHHL anticipates a substantial cost to maintain transmission infrastructure required to move wastewater from the Infrastructure Regional Study Area to Waikapū. It is believed that the County will not assume maintenance thereof.)

Third, the use of R-1 water quality effluent for irrigation within the Infrastructure Regional Study Area was not considered to be feasible under Alternative 4. The use of R-1 water for irrigation is possible under the current preferred design. The expectation is that any R-1 effluent produced by the WWRF would be used for irrigation during most of the year, thereby reducing the demand for irrigation water.

DHHL expects that a regional approach to wastewater infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination. DHHL has considered an independent alternative for wastewater infrastructure (in which each of the two DHHL Project Areas would have its own wastewater system, independent of other stakeholders). (Refer to the Independent Alternatives Memorandum included in Appendix C.) First, an independent approach may not be financially efficient. From a cost standpoint, the most attractive independent option would be an R-2 private wastewater treatment facility. (Due to the desire to irrigate the DHHL Project Areas with R-1 water if possible, this option was also considered.) Under this independent approach, each of the DHHL Project Areas would be served by a new onsite private wastewater facility. The estimated cost of construction for this independent approach is $9.212M ($13.987M R-1) for Pūlehunui North and $12.659M ($14.246M R-1) for Pūlehunui South. The DLNR projected construction cost (Munekiyo Hiraga, ~~2018~~ 2019) for an independent DLNR wastewater system is $28M. The construction cost for an independent MRPSC wastewater system is unknown (but assumed to be on the same order of magnitude). Therefore the cumulative construction cost of the independent approach to wastewater infrastructure is anticipated to be roughly $59-84M. ~~The construction cost of wastewater Alternative 4, inclusive of an interim wastewater facility, is expected be approximately $33.14M, which includes an estimated pro-rata contribution of $9.55M. Including onsite transmission infrastructure, Alternative 2 inclusive of an interim wastewater facility is expected to be approximately $48.38M including the pro-rata contribution. (This preliminary estimate does not include land acquisition for force main lines through A&B-owned land; refer to Appendix C).~~ The construction cost for the temporary wastewater Alternative 2A-1 is anticipated to be approximately $17.26M, which does not include operation and maintenance costs. Refer to Appendix C, Addendum 1. Second, the coordinated development of regional infrastructure may help to mitigate the cumulative impacts of the Proposed Action. (The environmental impact of multiple infrastructure projects and staggered construction phases could reasonably be expected to cause a greater nuisance than a coordinated effort, particularly in terms of traffic, noise, surface and groundwater resources, possible visual nuisance, and concerns related to construction dust and soil loss.) Thirdly, this option does not allow the Proposed Action to accommodate the PMP's infrastructure needs since each project would be addressing only its own needs. Finally, while the benefit of the independent approach allows the MOU parties to proceed with their respective developments independently of each other, a

regional approach to planning is more consistent with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, wherein these parties agreed to "make their best efforts to work in a collaborative manner". As previously mentioned, the MOU was intended to allow the aforementioned agencies to benefit from economies of scale, joint infrastructure financing, planning and development, and provide significant economic benefits to the Maui community. Therefore, DHHL will continue to evaluate regional approaches to wastewater infrastructure as long as it is reasonable and prudent to do so. Nevertheless DHHL acknowledges that if an expedited and clear timeframe for securing and developing wastewater service is the primary consideration, then an independent approach may be preferable.

During the EISPN Public Review period, the DOH EPO wrote: "Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, 'Wastewater Systems'). We reserve the right to review the detailed wastewater plans for conformance to applicable rules." Regardless of the alternative selected, DHHL will comply with all applicable rules including HAR, Chapter 11-62.



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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-10
Proposed Wastewater Alternative 1A

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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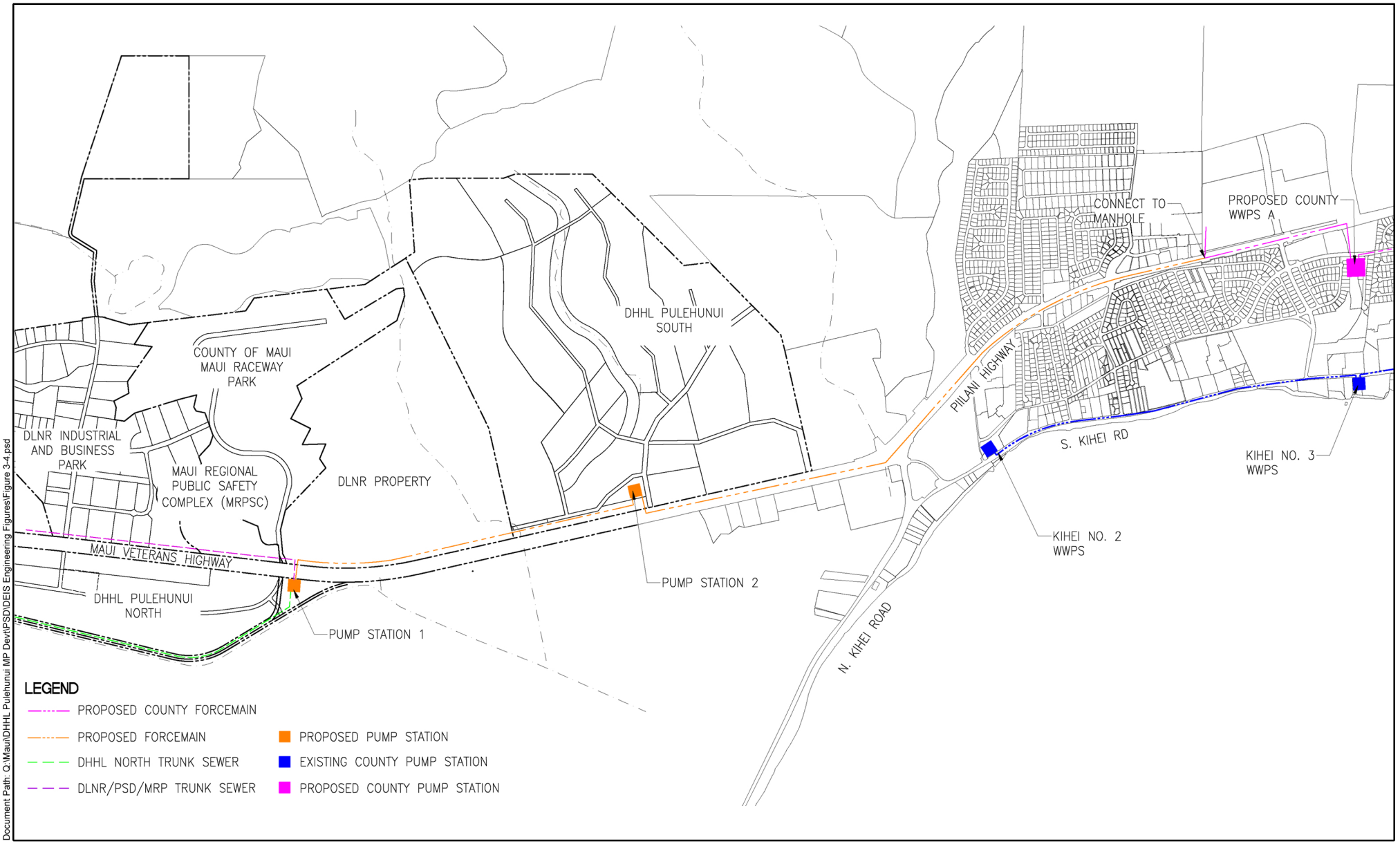

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

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Figure 5-11
Proposed Wastewater Alternative 1B

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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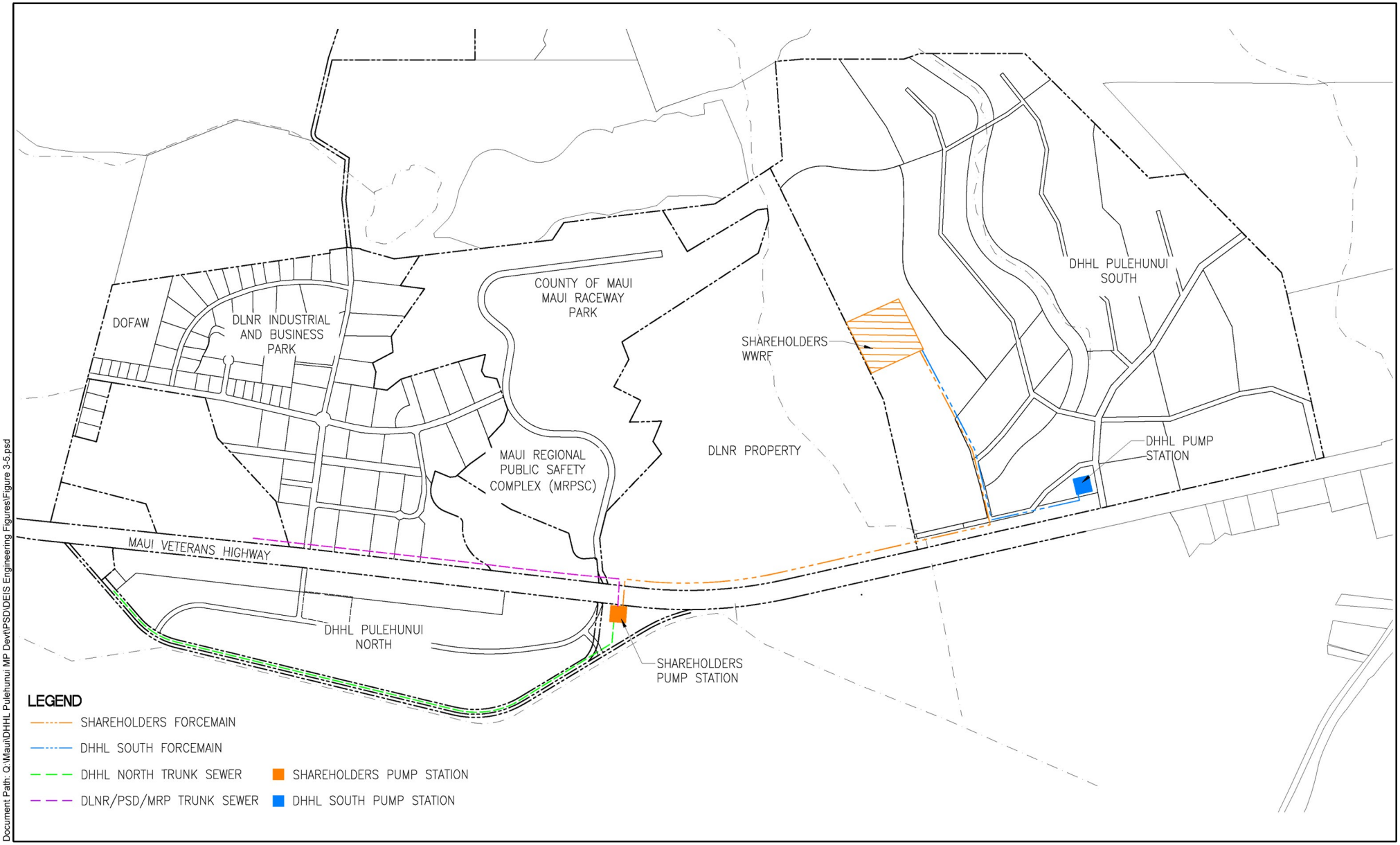

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-12
Proposed Wastewater Alternative 2A

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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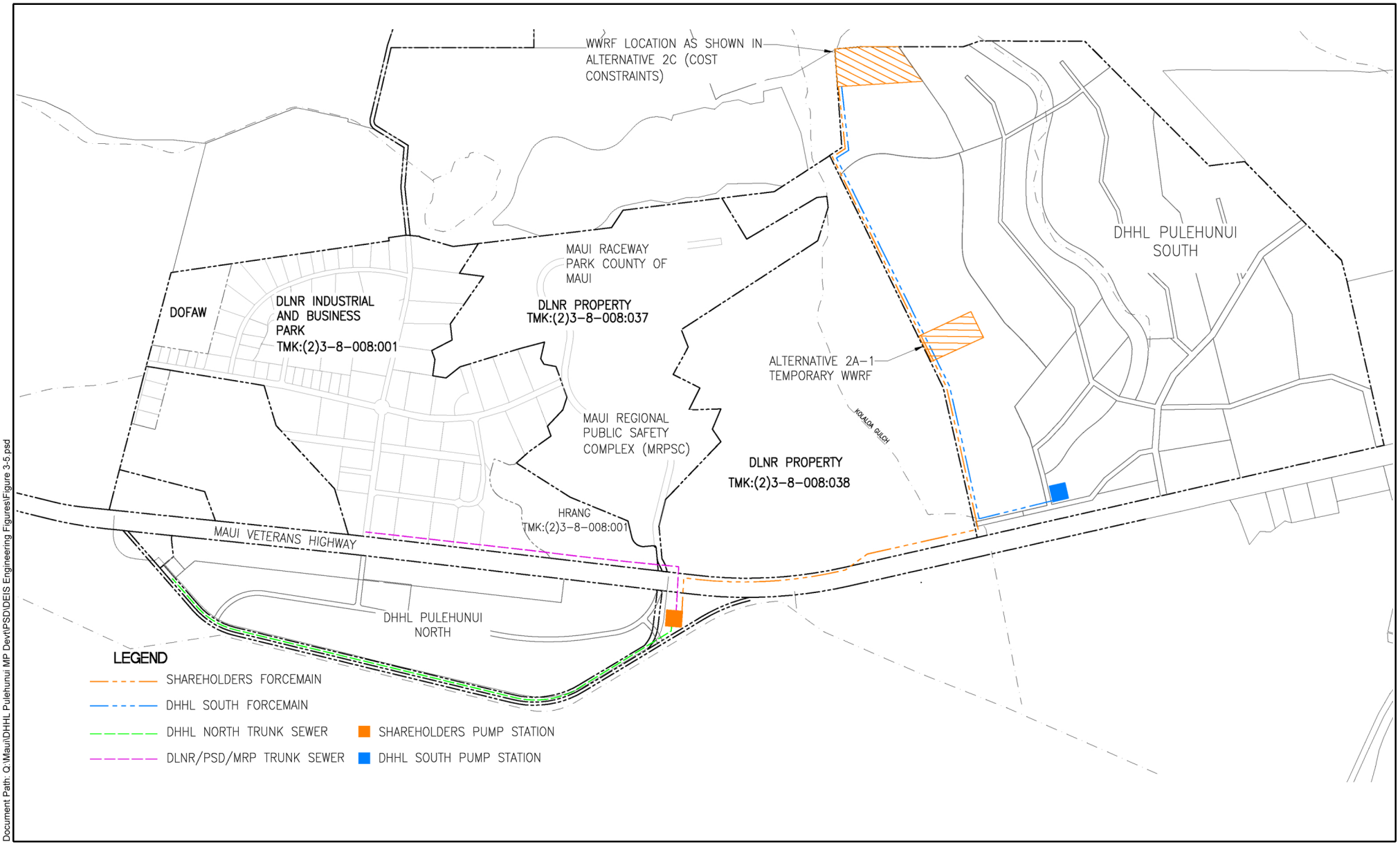

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Figure 5-12-A
Proposed Wastewater Alternative 2A-1

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Department of Hawaiian Home Lands — Island of Maui

North

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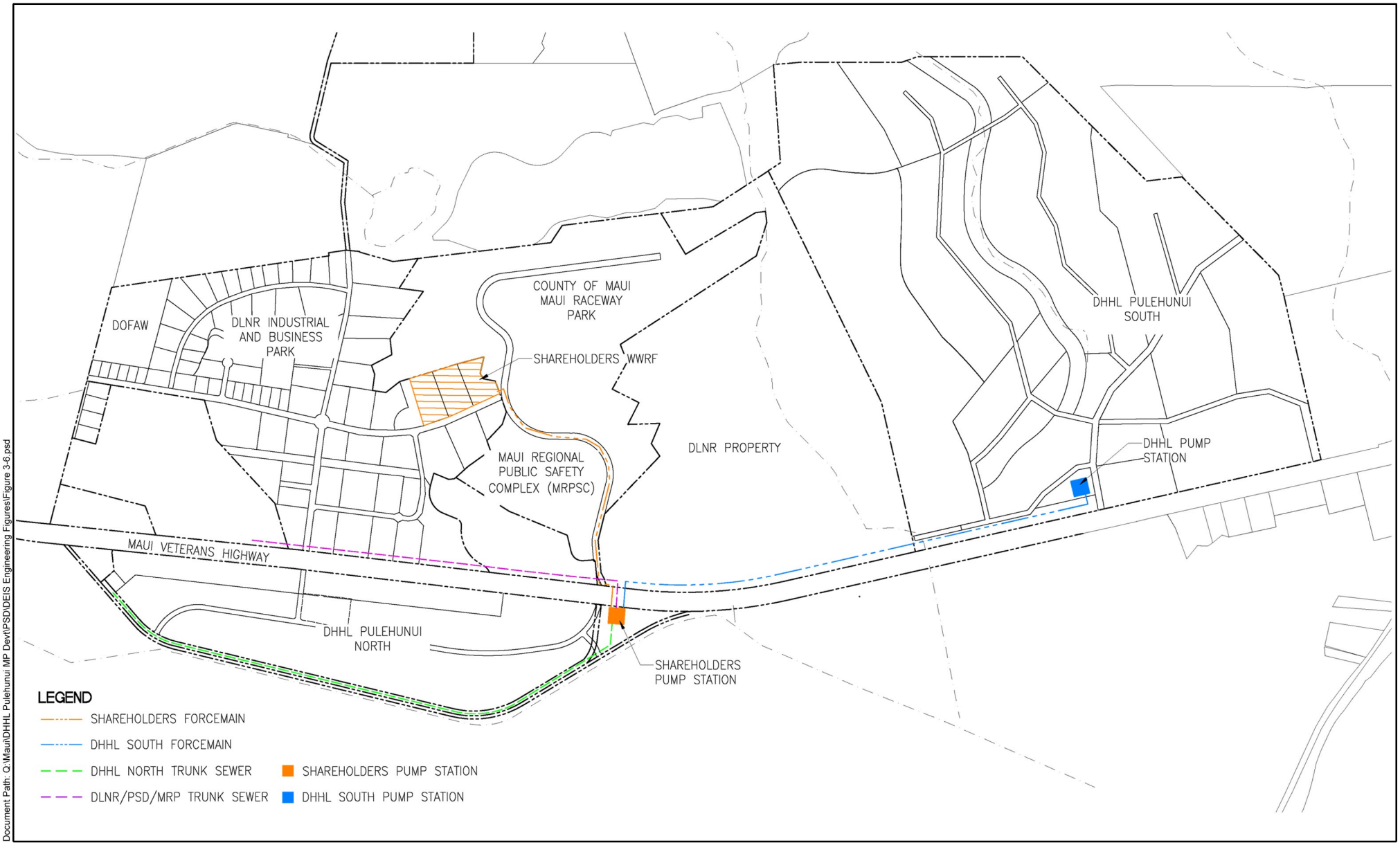

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-13
Proposed Wastewater Alternative 2B

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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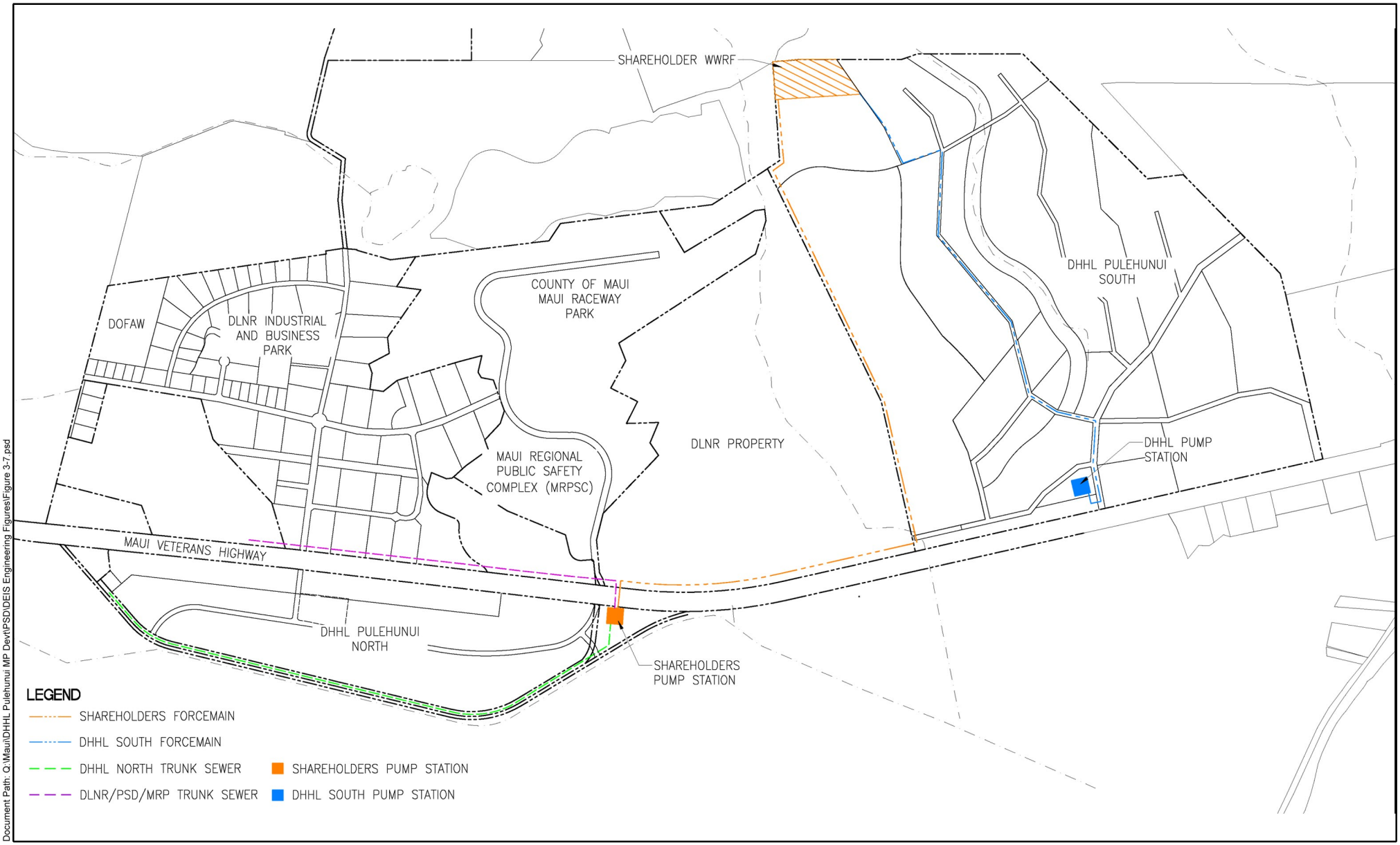

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-14
Proposed Wastewater Alternative 2C

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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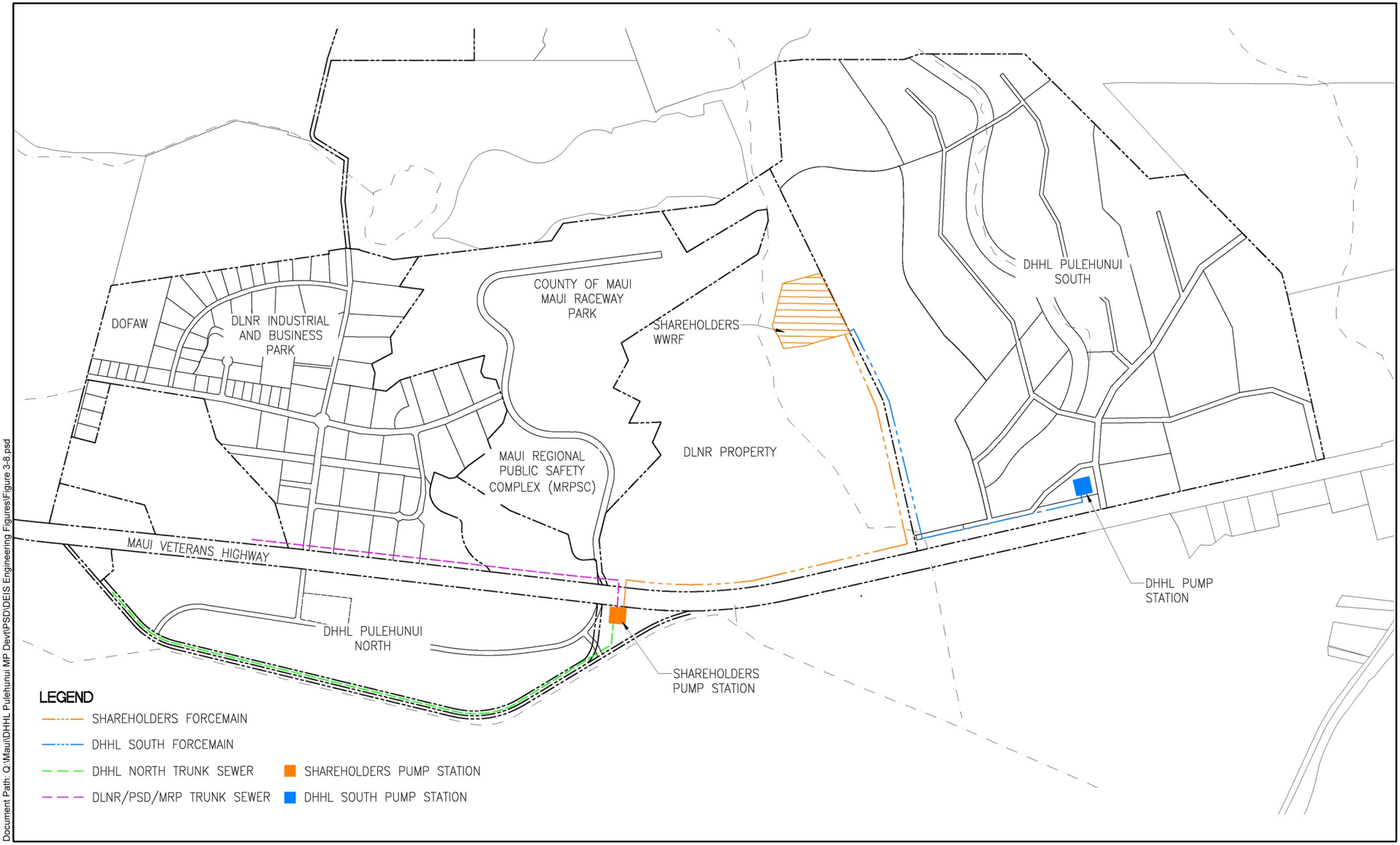

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-15
Proposed Wastewater Alternative 3A

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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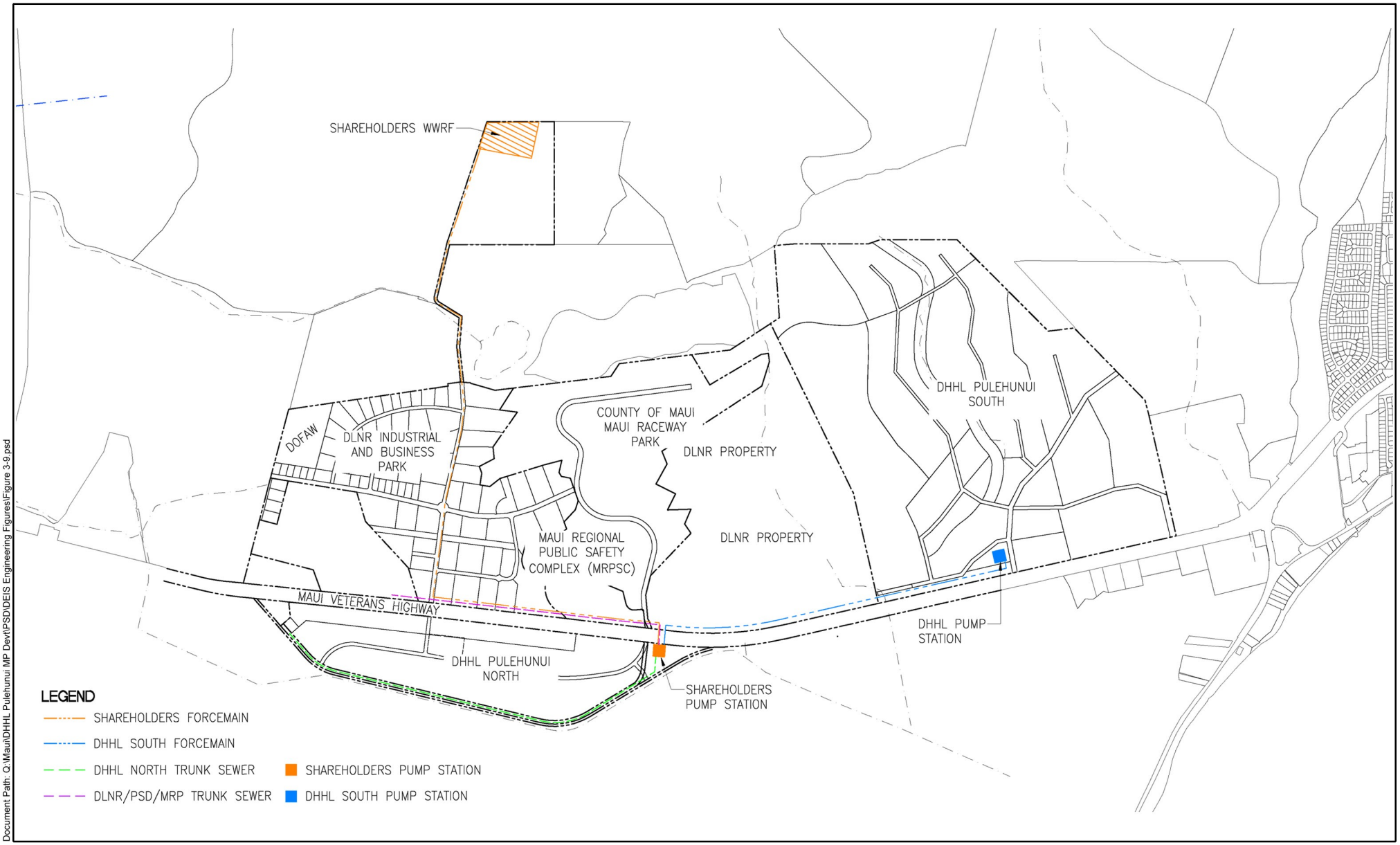

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-16
Proposed Wastewater Alternative 3B

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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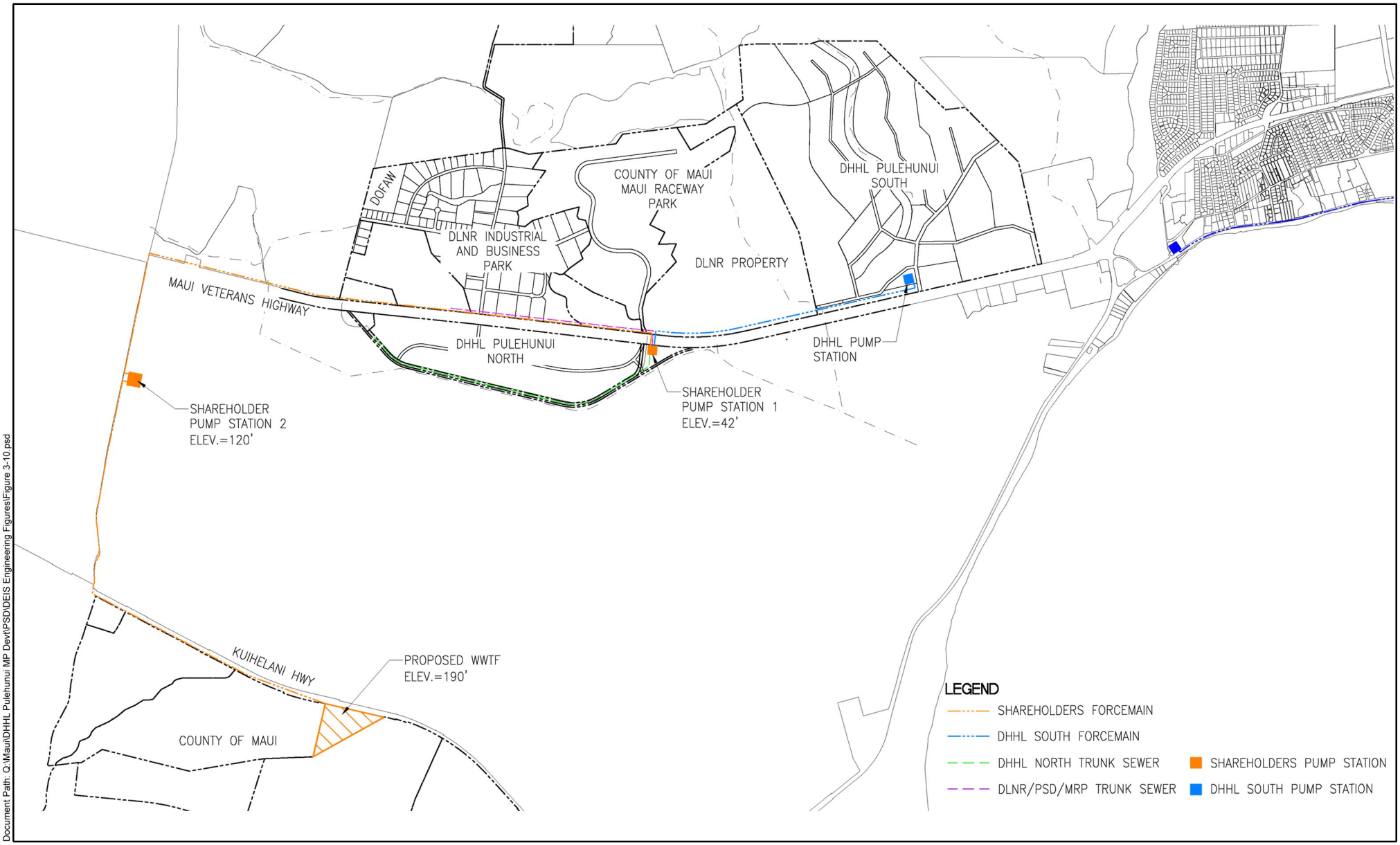

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

Figure 5-17
Proposed Wastewater Alternative 4

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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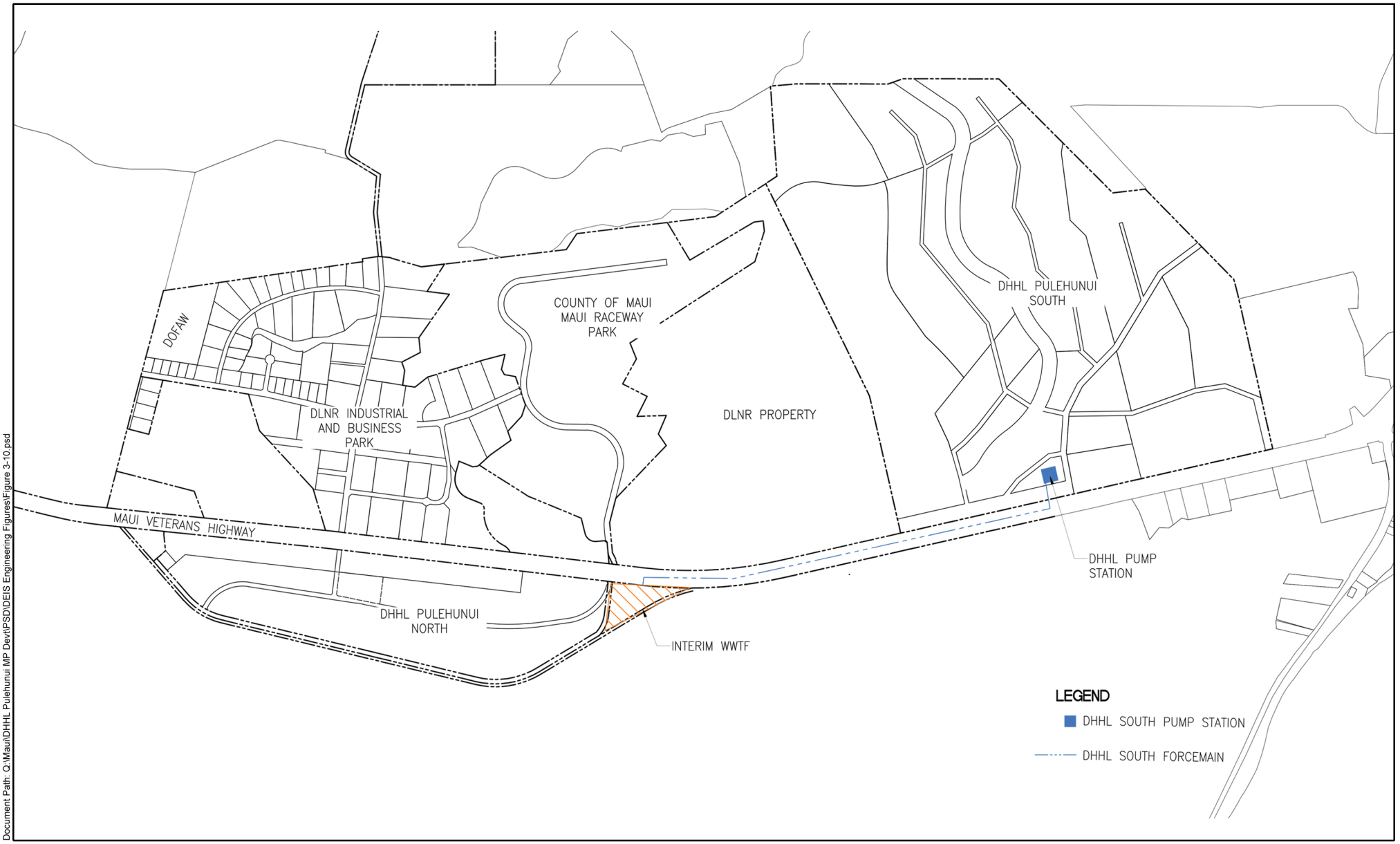

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It is anticipated that the previously shown alignment for the DHHL North Trunk Sewer, DLNR Trunk Sewer, and certain force main alignments may not be feasible. Refer to Appendix C, Addendum 2.

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Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Figure 5-18
Proposed Wastewater Alt. 4 Interim

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

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5.8.4 *Drainage System*

Most of the Infrastructure Regional Study Area was used for sugar cane cultivation for many years. Since the last harvest in 2016, a mix of sugar cane and weeds has grown back. Existing dirt roads that were formerly used for cane operations are still present throughout the region, although many are becoming overgrown. The region's soils are generally well drained with good infiltration. They can contain rocks and cobbles, but solid bedrock is generally very deep. Shallow groundwater is also not a concern. The climate in the area is semi-arid. Semi-arid landscapes that are not irrigated tend to have higher than average rates of runoff due to thinner and less vigorous groundcover.

The topography in the area is relatively flat and uniform with slopes generally in the one to two percent range. The anticipated projects located east of Maui Veterans Highway (including Pūlehunui South) generally slope westward toward the highway. Pūlehunui North, which is west of the highway slopes in a more southward direction. Ultimately all runoff collects in drainage ditches that lead to Keālia Pond. The drainage conditions for each project site are discussed in more detail on the following pages.

Pūlehunui North Existing Conditions and Deficiencies
Stormwater runoff from Pūlehunui North generally flows in a south or southwesterly direction towards an existing offsite drainage ditch that runs along the west edge of Mehameha Loop (on A&B lands). The ditch is the downstream continuation of Pūlehu Gulch. There are no drainage systems along most of Mehameha Loop and stormwater must surface flow across the road. Since the property is relatively flat, runoff is widely dispersed and enters the ditch at various locations as opposed to converging into one concentrated area. The Pūlehu Gulch drainage ditch continues beyond Mehameha Loop in a southwesterly direction, crossing agricultural land, and eventually discharges to Keālia Pond (see Figure 5-19).

According to the Maui Veterans Highway (formerly Mokulele Highway) Drainage Report from March 2000, the drainage area for Pūlehu Gulch is 7,813 acres and the 100-year flow rate is 8,630 cubic feet per second (cfs). It is not known if the existing ditch west of Mehameha Loop, which is a continuation of the Pūlehu Gulch, has sufficient capacity for these flow rates. If the ditch were to flood, it could spill over Mehameha Loop and affect Pūlehunui North. The runoff from the DLNR Industrial and Business Park site that discharges through the ~~14~~ fourteen 24-inch culverts at Maui Veterans Highway generally doesn't affect Pūlehunui North. There is a swale along the west side of the highway that captures runoff and carries it south. The swale runoff eventually reaches the south intersection of Mehameha Loop where there is a ~~HDOT~~ DOT double 24-inch culvert under the loop road. Considering that ~~14~~ fourteen 24-inch culverts contribute runoff to the upstream highway swale, the double 24-inch culvert at Mehameha Loop is undersized. During big storm events, this culvert, like the culvert across the highway at Raceway Park Drive, will be exceeded resulting in flow overtopping the roadways.~~The~~ In summary, the culvert that transfers swale runoff under Mehameha Loop near its southern intersection with Maui Veterans Highway is undersized.

The remaining portion of Mehameha Loop that borders Pūlehunui North has no existing drainage systems, therefore runoff will flow over the roadway. To mitigate the deficiency, Pūlehunui North will require the addition of drainage systems at Mehameha Loop if Mehameha Loop is widened. The effect of the undersized ~~HDOT~~ DOT double 24-inch culvert on Mehameha Loop near Maui Veterans Highway on Pūlehunui North will need to be further evaluated to see if a replacement is warranted. Refer to Figure 5-21 as well as Appendix C for proposed drainage conditions.

Pūlehunui South Existing Conditions and Deficiencies

Pūlehunui South is served by three major drainage systems at Maui Veterans Highway: an eight unit (8x) twelve-foot by eight-foot box culvert at Kolaloa Gulch, a triple twelve-foot by six-foot box culvert at the center of the property, and a nine unit (9x) twelve-foot by eight-foot box culvert south of the property at Keāhuaiwi Gulch. The majority (about 90 percent) of the property drains to the triple twelve-foot by six-foot box culvert located near the center of the property's frontage with the highway. The southwest corner (about ten percent) of the property drains to Keāhuaiwi Gulch. And only about one acre (less than one percent) of the property in the very northwest corner drains to Kolaloa Gulch. All drainage systems eventually flow into Keālia Pond (see Figure 5-20).

An unnamed drainage-way bisects Pūlehunui South. While the drainage-way is unnamed, it is significant in that it has an offsite drainage area of almost 2,000 acres. Most of the drainage-way within the property has a defined channel, however, as the drainage-way gets closer to Maui Veterans Highway, the defined channel ends and the runoff disperses on more level terrain. It is assumed that the lower segment of the drainage-way channel was graded out and erased as part of sugar cane cultivation operations. As mentioned above, runoff from this unnamed drainage-way eventually collects at a box culvert near the center of the property's frontage.

Runoff from the southwest corner of the property collects in a low area just mauka of the highway right-of-way. A large box culvert was planned to be installed in this area as part of the improvement of Maui Veterans Highway (formerly known as Mokulele Highway) in the early 2000s. However, for reasons unknown, this culvert was never installed. With no drainage systems at Maui Veterans Highway, runoff from this area must drain south through an undersized 24-inch culvert located at an access drive near the southwest corner of the property. Runoff then flows in the highway ditch along the Monsanto property frontage to the box culvert at Keāhuaiwi Gulch, about 1,000 feet south of the property. In summary, the southwestern corner of the property lacks adequate drainage systems; runoff from this corner collects on the Haleakalā side of the highway and eventually releases south to Keāhuaiwi Gulch by draining along the Monsanto property highway frontage. Extra retention may be needed to mitigate the deficiency at this portion of Pūlehunui South. Refer to Figure 5-22 as well as Appendix C for proposed drainage conditions.

There are two FEMA mapped 100-year flood zones on the Pūlehunui South site. The first is in the northwest corner of the property at Kolaloa Gulch. The second is in the southwest corner of the

property and is related to Keāhuaiwi Gulch. There is no delineated 100-year flood zone for the unnamed gulch at the center of the property.

~~At Pūlehunui South, the southwestern corner of the property lacks adequate drainage systems; runoff from this corner collects on the Haleakalā side of the highway and eventually releases south to Keāhuaiwi Gulch by draining along the Monsanto property highway frontage. As such, extra retention may be needed to mitigate the deficiency at this portion of Pūlehunui South. Refer to Figure 5-22 as well as Appendix C for proposed drainage conditions.~~

Surrounding Area Existing Conditions and Deficiencies

The PER did not recommend combining regional drainage systems due to a number of reasons detailed in Section 5.8.4.1, suggesting that an "independent" approach to drainage infrastructure would be ideal. However the various projects in the Infrastructure Regional Study Area are potentially impacted by offsite flows in a number of ways which are described briefly here and described in more detail in Appendix C along with an in-depth analysis of drainage conditions at the DLNR Industrial and Business Park, and the MRPSC.

DLNR Industrial and Business Park Drainage

Stormwater runoff from the DLNR Industrial and Business Park generally flows in a westerly direction towards Maui Veterans Highway. At Maui Veterans Highway, the roadway is slightly raised, creating a barrier to runoff. Runoff flows along the Haleakalā side of the highway to an existing culvert that passes under the highway. Typically, runoff then drains to a parallel swale on the Pūlehunui North side of Maui Veterans Highway. Runoff then continues to flow in a southerly direction to a larger existing ditch that leads to Keālia Pond.

In larger storm events, the culverts at Maui Veterans Highway have insufficient capacity for the runoff, causing flows to travel southward in the swale on the east side of the highway towards the intersection of Raceway Park Drive. There, runoff either passes under the roadway through a ~~HDOT~~ DOT culvert or overtops the roadway due to insufficient capacity. From there, runoff continues to flow in a southerly direction before passing through a culvert under Maui Veterans Highway, to the same larger drainage ditch described above that leads to Keālia Pond.

The lack of adequate drainage systems fronting the DLNR Industrial and Business Park and at Raceway Park Drive present a challenge to the DLNR and MRPSC projects. The culverts along the DLNR frontage of Maui Veterans Highway have insufficient capacity to manage runoff from the 50 or 100-year storm. A sufficiently-sized culvert exists south of Raceway Park Drive, but the culvert under Raceway Park Drive is insufficient to convey runoff to this location. Due to this lack of downstream capacity, the DLNR Industrial and Business Park and MRPSC properties may have to reduce runoff rather than simply avoiding an increase from existing conditions.

Maui Regional Public Safety Complex

Existing Condition runoff rates have not been estimated for the MRPSC. Runoff from the MRPSC property drains towards the HIARNG property and under Raceway Park Drive through a culvert

near the intersection with Maui Veterans Highway. From there, stormwater continues south along the Haleakalā side of Maui Veterans Highway to a culvert that runs under the highway. The runoff then combines with the main Pūlehu Gulch Drainage Ditch that leads to Keālia Pond.

An upgrade to the culvert at Raceway Park Drive may mitigate some of the deficiency, but would involve coordination with ~~HDOT~~ DOT, would likely be more expensive, and excessive flows could still negatively affect the National Guard Armory.

Reservoir 90

An existing reservoir and dam located upgradient of the DLNR Industrial and Business Park has several known deficiencies and poses a possible risk to Pūlehunui North as well as DLNR lands and the MRPSC. The Reservoir 90 dam is classified as a high hazard dam by the State Dam Safety Program. If the dam's earthen embankment were to overtop or fail, the reservoir's water could inundate the aforementioned lands with destructive flood flows. The reservoir is owned and operated by HC&S.

Flood Zone Designations

Flood hazards are identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, the vast majority of the DHHL Project Areas is designated Zone X, indicating "areas of minimal flood hazard" outside the 500-year (0.2 percent annual chance) floodplain. (See Figure 4-4).

A narrow portion of Pūlehunui North along Maui Veterans Highway is designated Zone XS (0.2 percent annual chance flood). A portion of Pūlehunui South along Maui Veterans Highway is designated Zone AE (100-year flood area), associated with Keāhuaiwi Gulch. At a slightly higher elevation, a portion of Pūlehunui South is designated Zone XS. At the northwestern boundary of Pūlehunui South along Maui Veterans Highway, a small area designated Zone A 100-year (one percent annual chance) is associated with Kolaloa Gulch. Potential drainage infrastructure deficiencies exist and are detailed in Section 5.8.4.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the State Office of Planning wrote:

> 3. Stormwater runoff from Pulehunui North generally flows to the south or southwest towards an existing offsite drainage ditch that runs along the west edge of Mehameha Loop on State-designated Important Agricultural Lands (IAL) and terminates at Kealia Pond (Section 5.8.4 Drainage System, p. 13 I, and Figure 5-19.) There is no drainage system along most of Mehameha Loop and storm water must surface flow across the road. Pulehunui North is adjacent to designated IAL lands to the northwest, west, and southwest. Since commercial and light industrial uses are anticipated for the parcel, it is important that stormwater runoff from Pulehunui North does not enter the IAL lands or Kealia Pond. The Draft EIS recommends localized basins within each area to manage

> stormwater. New retention basins are proposed for Pulehunui North to retain stormwater, and roadway runoff will also be retained and managed onsite (p.134 and Figure 5-21.) The Draft EIS discusses this issue in detail.

The DLNR Engineering Division wrote:

> 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 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), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below[…]
The County of Maui Planning Department wrote:

> 12. We note that on page 219, it says that Special Flood Hazard Development Permits may be required, if applicable. We would like to inform you that you will be required to apply for a Flood Development Permit for any parcel that is not located within Flood Zone X or XS.

Refer to Appendix B-2 for a copy of these comments and DHHL's responses. As noted by the County of Maui Planning Department, a Flood Development Permit will be applied for any parcel that is not located within Flood Zone X or XS.

The land uses proposed for the DHHL Project Areas will result in increased impervious surfaces and thus increased stormwater runoff, although the increase in impervious surfaces will be less significant Pūlehunui South due to large areas of open and undeveloped space.

Generally, the recommended drainage designs will reduce the size of drainage areas, creating sub-areas and providing localized basins within each area to manage stormwater. This decentralized approach provides several advantages for the efficient management of stormwater flows. The proposed stormwater management plan for each proposed drainage basin will also address stormwater quality. For example, water quality impacts will be mitigated with the implementation of grass swales, reduced impervious coverage, and stormwater retention areas.

Pūlehunui North
New retention basins will completely retain the stormwater runoff generated from each development lot, independent of the others. Piped overflow conveyance systems or surface flow paths will safely manage excess flows. Roadway runoff will also be retained and managed onsite. Refer to Figure 5-21.

The full retention of site runoff will reduce storm drain infrastructure needs within the property, and there will be no site runoff from the property for the 50-year, 1-hour storm. Some onsite areas are potentially at risk for flooding due to insufficient existing drainage capacities. Refer to Figure 5-21 and Appendix C for the proposed drainage design.

A detailed hydraulic analysis should be conducted in the design phase for the property, to determine the potential for flooding along the west side of Mehameha Loop, where high flows from the existing ditch extending from Pūlehu Gulch could potentially flood into Mehameha loop and the property. A possible mitigation would be to raise Mehameha Loop or the property, or to widen or improve the existing ditch.

A second potential area of flooding is at the existing ~~HDOT~~ DOT culvert at the south end of Mehameha Loop. Pūlehunui North does not contribute any runoff to this culvert but may be impacted by the offsite runoff near the southern intersection of Mehameha Loop and Maui Veterans Highway. To mitigate flood risk at this location, a larger culvert could be added at Mehameha Loop or measures such as raised grades or berms could be implemented to protect Pūlehunui North from surface flow. Further analysis of the existing ~~HDOT~~ DOT culvert will be conducted in the future design phase.

Pūlehunui South
New retention basins will completely retain the stormwater runoff generated from each development lot, independent of the others. Piped overflow conveyance systems or surface flow paths will safely manage excess flows. Offsite runoff generated by drainage area O-2a will flow through the existing onsite gulch. As previously mentioned, the gulch eventually ends and disperses runoff before reaching Maui Veterans Highway. This existing flow will be modified to divert the runoff to the existing culverts at Maui Veterans Highway. Refer to Figure 5-22 and Appendix C for the proposed drainage design.

With the proposed design, the total onsite runoff will be reduced by 96 percent compared to existing conditions. Development of structures within in any flood zone areas will be avoided or the flood condition will be mitigated by filling the area to raise it out of the flood zone. The Kolaloa Gulch channel will remain free of encroachment so that flood flows will be unimpeded.

DLNR Industrial and Business Park
New detention basins are proposed at various locations throughout the project site to manage runoff increases. Some basins will be designed to slowly release runoff over time through low flow outlets, while others will be designed for full stormwater retention. The basins will work together in series or in parallel to ensure that the amount of runoff in the proposed condition

does not exceed the existing condition. Drain inlets and piped storm drain systems will be placed under roadways or in landscaped areas to convey runoff to the proposed basins. Swales will also be used wherever possible. Since there is a significant amount of offsite runoff currently passing through the project site, diversions and thru conveyance systems will be used to allow this runoff to continue to pass safely through. No detention systems will be placed within the thru conveyance systems because of the large volume of runoff flowing through them and to avoid restricting the conveyance capacity. The total onsite 50-year runoff after detention/ retention will be 124.42 cubic feet per second (cfs), which is a 35 percent reduction from existing conditions. The existing downstream culvert at Raceway Park Drive will remain undersized, however, the reduction in site runoff will help to improve the current condition. The bulk of the flows to the culvert are from offsite areas.

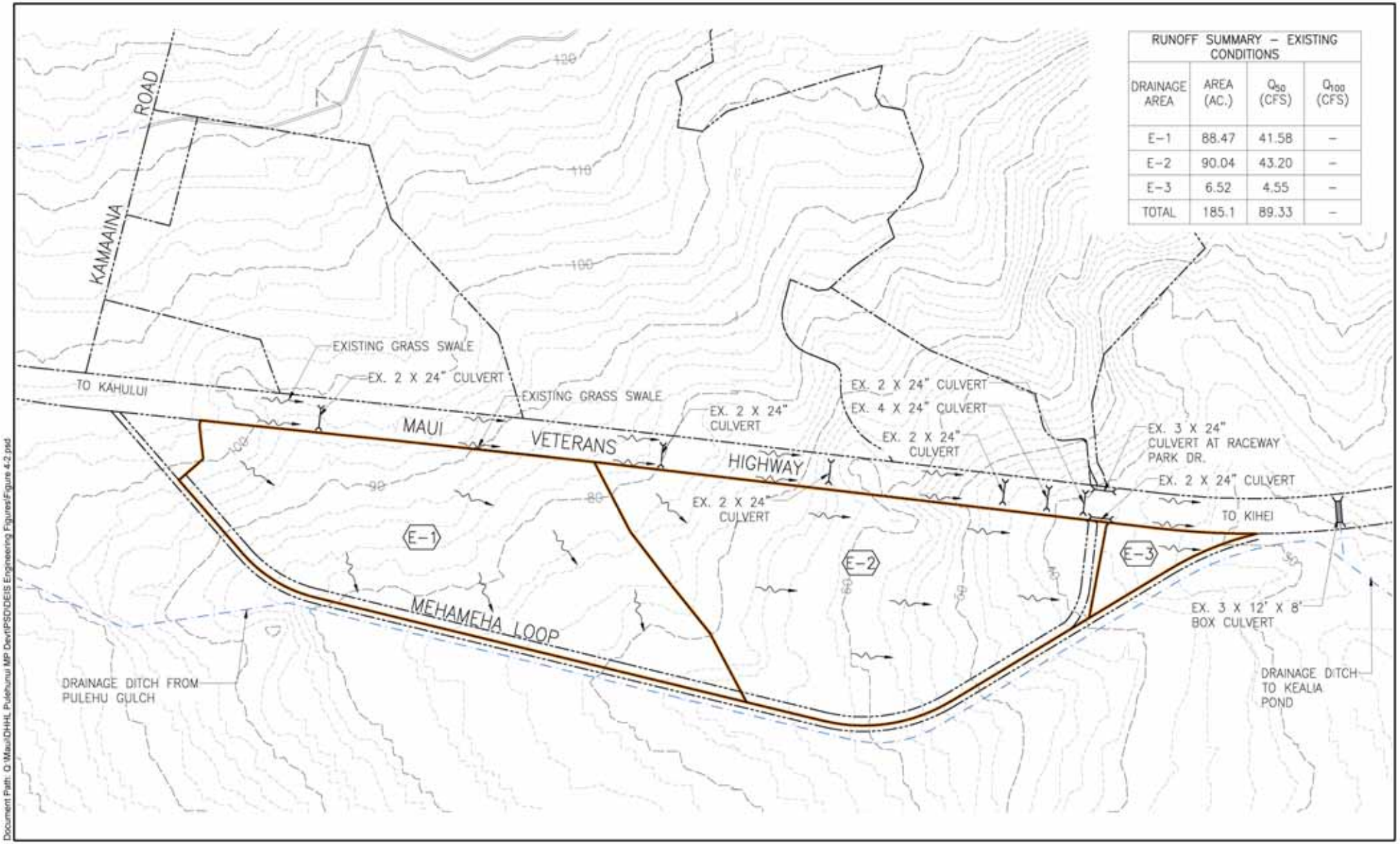
As mentioned previously, a number of deficiencies have been identified in HC&S Reservoir 90 by the State Dam Safety Program and the dam poses a potential risk to DLNR and other makai properties. It is recommended that DLNR and other stakeholders work with and/ or negotiate with HC&S to further assess the dam and make the required repairs and upgrades.

Maui Regional Public Safety Complex

Runoff from the developed site is planned to be managed by a combination of open retention basins and an underground perforated pipe storage system. The goal will be to retain the increase in 50-year, 1-hour storm runoff so that flow rates are kept to predevelopment levels. Runoff stored in the basins will be allowed to infiltrate into the ground, while excess runoff will overflow to the south.

To mitigate impacts to surface and groundwater resources, the following best management practices (BMPs) will be considered by contractors during the construction phase:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Keep runoff onsite.
- Construction exceeding one acre is required to comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements.
- Contractors will be required to provide BMPs as part of their contracts.



RUNOFF SUMMARY – EXISTING CONDITIONS			
DRAINAGE AREA	AREA (AC.)	Q_{50} (CFS)	Q_{100} (CFS)
E-1	88.47	41.58	–
E-2	90.04	43.20	–
E-3	6.52	4.55	–
TOTAL	185.1	89.33	–

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Figure 5-19
Existing Drainage - North

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

PBR HAWAII & ASSOCIATES, INC.

Source: Austin, Tsutsumi & Associates, Inc., 2018.
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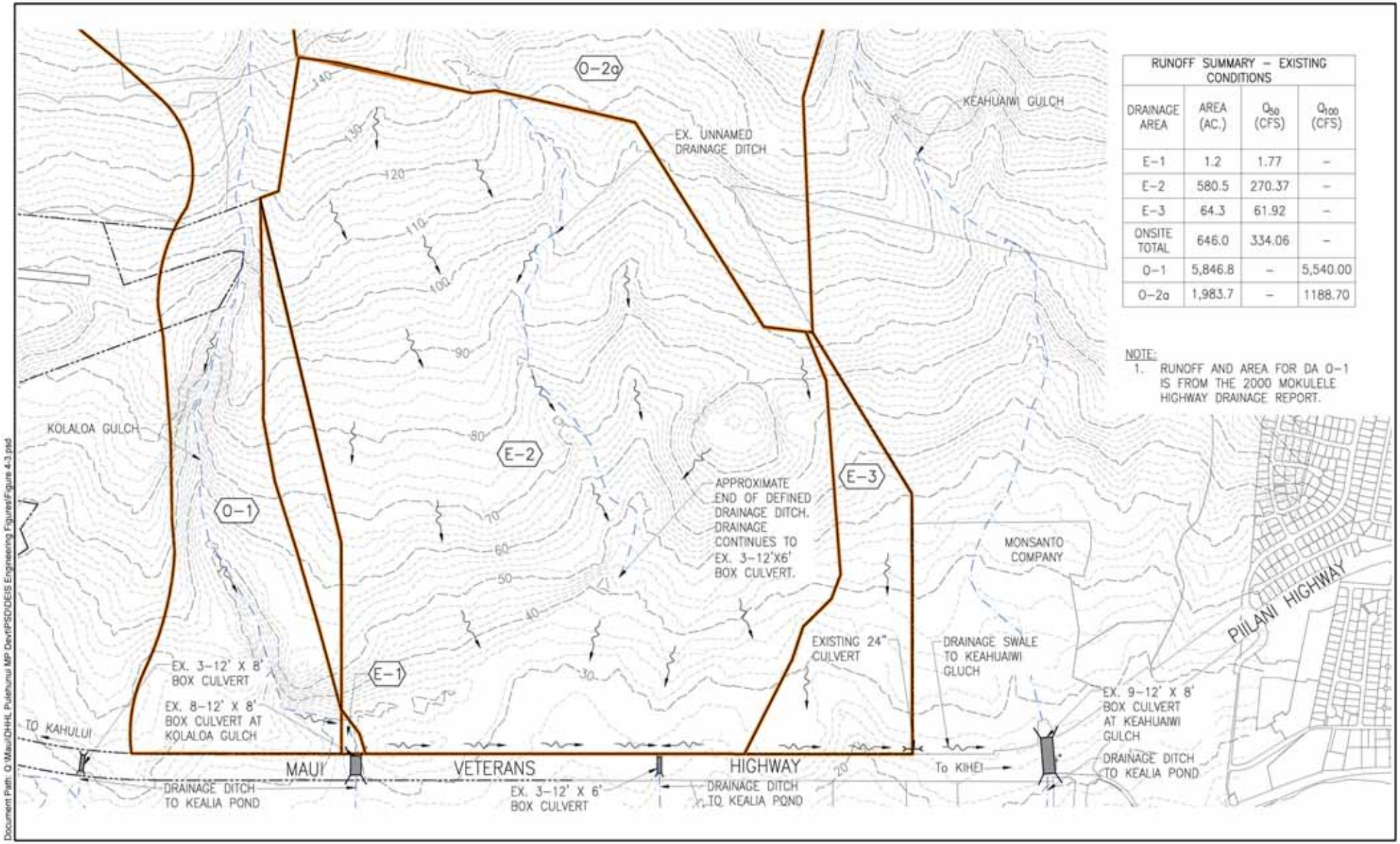

RUNOFF SUMMARY – EXISTING CONDITIONS			
DRAINAGE AREA	AREA (AC.)	Q_{50} (CFS)	Q_{100} (CFS)
E-1	1.2	1.77	–
E-2	580.5	270.37	–
E-3	64.3	61.92	–
ONSITE TOTAL	646.0	334.06	–
O-1	5,846.8	–	5,540.00
O-2a	1,983.7	–	1188.70

NOTE:
1. RUNOFF AND AREA FOR DA O-1 IS FROM THE 2000 MOKULELE HIGHWAY DRAINAGE REPORT.

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Figure 5-20
Existing Drainage - South

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

Source: Austin, Tsutsumi & Associates, Inc., 2018.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

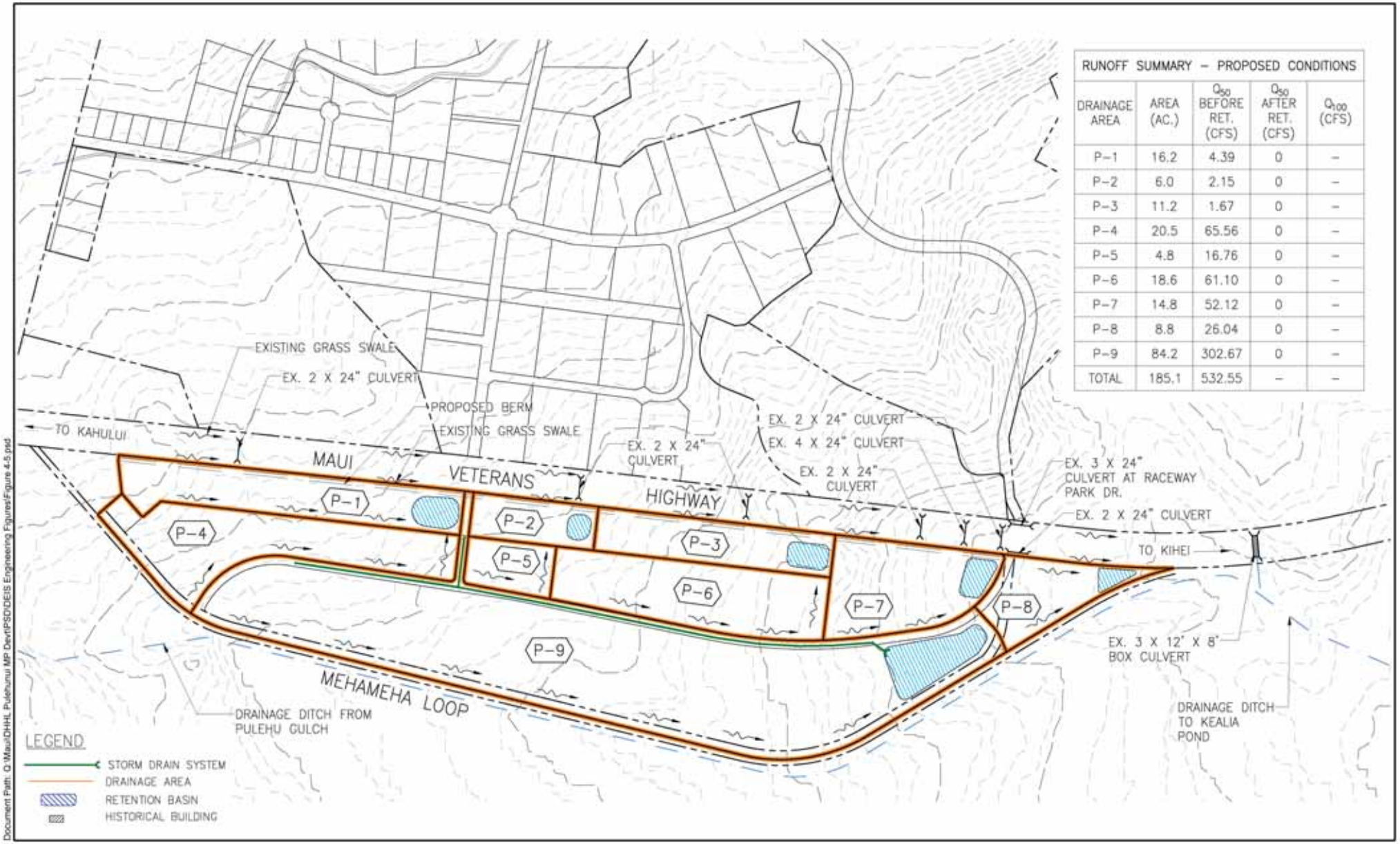

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Figure 5-21
Proposed Drainage - North

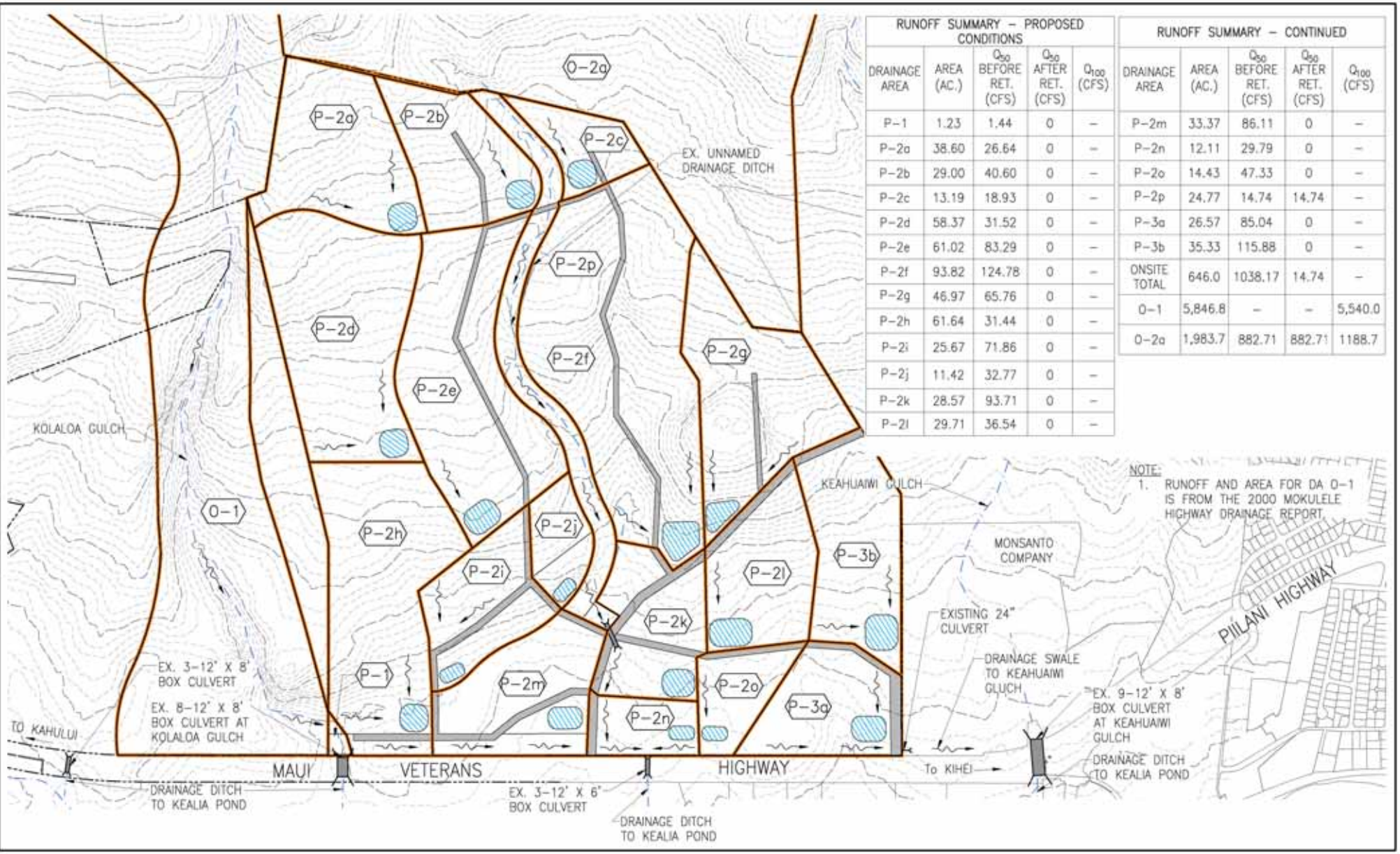
PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

Source: Austin, Tsutsumi & Associates, Inc., 2018.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



RUNOFF SUMMARY – PROPOSED CONDITIONS

DRAINAGE AREA	AREA (AC.)	Q_{50} BEFORE RET. (CFS)	Q_{50} AFTER RET. (CFS)	Q_{100} (CFS)
P-1	1.23	1.44	0	–
P-2a	38.60	26.64	0	–
P-2b	29.00	40.60	0	–
P-2c	13.19	18.93	0	–
P-2d	58.37	31.52	0	–
P-2e	61.02	83.29	0	–
P-2f	93.82	124.78	0	–
P-2g	46.97	65.76	0	–
P-2h	61.64	31.44	0	–
P-2i	25.67	71.86	0	–
P-2j	11.42	32.77	0	–
P-2k	28.57	93.71	0	–
P-2l	29.71	36.54	0	–

RUNOFF SUMMARY – CONTINUED

DRAINAGE AREA	AREA (AC.)	Q_{50} BEFORE RET. (CFS)	Q_{50} AFTER RET. (CFS)	Q_{100} (CFS)
P-2m	33.37	86.11	0	–
P-2n	12.11	29.79	0	–
P-2o	14.43	47.33	0	–
P-2p	24.77	14.74	14.74	–
P-3a	26.57	85.04	0	–
P-3b	35.33	115.88	0	–
ONSITE TOTAL	646.0	1038.17	14.74	–
O-1	5,846.8	–	–	5,540.0
O-2a	1,983.7	882.71	882.71	1188.7

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Figure 5-22
Proposed Drainage - South

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

NOT TO SCALE

Source: Austin, Tsutsumi & Associates, Inc., 2018.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

5.8.4.1 Drainage Summary and Recommendations

Independent Drainage Systems

There do not appear to be many reasons for the DLNR, Pūlehunui North, Pūlehunui South, or MRPSC projects to combine or collaborate on new retention systems, conveyance systems, or any other drainage improvements. No anticipated projects are directly upstream or downstream of the other, and the drainage systems in the Infrastructure Regional Study Area are mostly separate. The land slope in the area is relatively flat, which may make it difficult or impossible to combine drainage systems due to insufficient slope.

Furthermore, it is generally advantageous to manage runoff with localized retention basins that have contributing areas less than 100 acres. ~~Areas~~ Retention basins for drainage areas larger than 100 acres can end up being three times as large as those that manage areas less than 100 acres, due to County requirements that will be triggered based on contributing area size. In addition to larger storage systems, a combined or centralized approach to drainage design would require the storm drain systems to also be significantly larger, to carry the larger flows. Therefore, using a decentralized approach will lead to cost savings and space efficiency by using smaller drainage infrastructure, smaller storage systems, and less developable land.

Opportunities for Coordination

The agencies party to the MOU may want to coordinate to address the deficient condition of HC&S Reservoir 90, mauka of the DLNR Industrial and Business Park. A number of deficiencies in the dam have been identified by the State Dam Safety Program and the dam poses a potential risk to all downhill properties. ATA recommended that DLNR, DHHL, PSD, and other stakeholders work with and/ or negotiate with HC&S to further assess the dam and make the necessary repairs and upgrades.

Further, the State agencies may wish to collaborate on earthwork; grading plans have not been developed at this time, some projects may create excess cut, while others may require fill material. During the construction plan development process it is recommended that the projects assess overall earthwork requirements to assess whether sharing material can provide any cost savings in regional development.

The existing ~~HDOT~~ DOT culvert at Raceway Park Drive near the intersection with Maui Veterans Highway is currently undersized. It is unlikely that DLNR would have an interest in improving the culvert, however, since the proposed DLNR Industrial and Business Park is anticipated to reduce flow rates and that property is not affected by the culvert. The Pūlehunui Motorsports Park, HIARNG and/or MRPSC may have an interest in upgrading the culvert, since Raceway Park Drive provides the only access to the HIARNG Puʻunēnē Armory and the MRPSC and an upgrade would reduce the risk of that road becoming flooded or damaged in large storm events.

A similar situation exists across Maui Veterans Highway at Mehameha Loop, where the existing ~~HDOT~~ DOT culvert is undersized. ~~.~~ It is unlikely that DLNR would have an interest in improving the culvert, ~~however,~~ since the proposed DLNR Industrial and Business Park is anticipated to reduce

flow rates and that property is not affected by the culvert. DHHL may have an interest in upgrading the culvert, however, since flooding at the Mehameha Loop culvert could affect the future uses at Pūlehunui North.

5.8.5 *Solid Waste*

The Central Maui Landfill - Refuse & Recycling Center is located near the intersection of Pūlehu Road and Hansen Road in Puʻunēnē, Maui. This facility accepts refuse from commercial and residential customers as well as provides recycling services. The Central Maui Landfill also accepts green waste and construction waste from demolition and construction activities. Between July 2016 and May 2017 the disposal rate at the Central Maui Landfill was 267,255 cubic yards per year.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the County of Maui Department of Environmental Management wrote that its Solid Waste Division had no comments.

Wastes generated by site preparation will primarily consist of vegetation, rocks, and debris from clearing, grubbing, and grading. Soil and rocks displaced from grading and clearing will be used as fill within the DHHL Project Areas. A discussion of possible interagency coordination on grading efforts is provided in Section 5.8.4. Solid waste that may be generated during construction that cannot be repurposed or recycled will be disposed at the Central Maui Landfill. As the DHHL Project Areas become operational, solid waste resulting from the DHHL Project Areas will be collected and disposed of for disposal at the Central Maui Landfill.

Green waste will either be chipped into mulch for use on site or will be taken to green waste recycling centers. Currently there are three green waste recycling centers on Maui: Maui Eko Systems, Inc., Maui Earth Compost & Soil Mixes, and Campaign Recycle Maui. All of these are located in Central Maui. If large amounts of green waste are expected from an individual phase of construction, delivery will be coordinated with the green waste recycling centers to ensure that there is adequate capacity among the centers to accept the anticipated amount of vegetation.

Construction waste will consist of waste lumber, concrete, and other building materials. Very little demolition material is expected, as the DHHL Project Areas are primarily vacant lands. DHHL will comply with all applicable rules regarding solid waste. Mitigation may include but is not limited to:

- Contractors will implement a waste management and recycling program to maintain clean construction sites, maximize material recycling, and minimize disposal truck traffic impacts.
- After construction, DHHL will implement strategies from the County's Integrated Solid Waste Management Plan (2009) for diverting solid waste from landfills by providing options for recycling.

- The goal for waste management is to appropriately reduce, reuse and recycle materials, to minimize generation of solid waste and achieve diversion from landfills. In conformance with Chapter 344-4(2), HRS, the DHHL Project Areas will promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling.
- DHHL will work with contractors to minimize the amount of solid waste generated during construction.
- Waste from site preparation and construction will be stored, handled, and properly disposed so as to divert the maximum amount of waste material caused by the development away from the County's landfill.

5.8.6 *Electrical, Telephone and Cable Television*

Existing utility poles and overhead lines run along the western side of Maui Veterans Highway and are available to provide electrical power to the DHHL Project Area by Maui Electric Company, Ltd. (MECO). There are currently no structures or electrical facilities within the area. Pūlehunui is within the telephone service area of Hawaiian Telcom and the telephone and cable television (CATV) service area of Sandwich Isles Communication. According to the Hawaii Public Utilities Commission:

> The Commission regulates the production, conveyance, transmission, and delivery of gas. When the gas pipelines deliver fuel directly to a property, this service is called "utility gas" and is regulated by the Commission. However, sales of gases in cylinders (for example, propane, medical, and industrial gases) are not regulated by the Commission.
>
> Hawaii's only utility gas provider, The Gas Company (dba Hawaii Gas), serves customers in its six gas districts: Honolulu, Hawaii Island, Maui, Mokokai *(sic)*, Lanai, and Kauai.

DHHL's engineering consultant notes that currently Maui does not have a municipal gas utility.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, PSD wrote that the Draft EIS was "missing discussion to bring Utility Gas to the property, as well as discussion on other alternative renewable energy sources such as Solar and Wind Power." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The DHHL Project Areas will require electrical, telephone, and CATV services.

Coordination with MECO, Hawaiian Telcom, and Sandwich Isles Communication will be undertaken during the engineering plans preparation phase of work to ensure that all electrical, telephone, and cable television service requirements for the proposed development are adequately addressed.

As noted in the DLNR Industrial and Business Park FEIS, MECO will eventually need to install a new substation in the area on an approximately one-acre parcel with perpetual easements, provided that land can be obtained and secured. The preferred location of the substation would be near existing transmission lines along Mehameha Loop or at the Maui Veterans Highway and the Kama'āina Road intersection. MECO would need to consider future regional developments in determining the timeline for the new substation. It would be the responsibility of individual lot owners and/or contractors to submit service requests to MECO. Easements will be required to cover any and all new poles, overhead, and underground facilities located on private property and include required vehicular access (Munekiyo Hiraga, 2019).

Energy saving strategies and use of alternative/renewable energy (such as solar and wind power) will be considered as plans for the DHHL Project Areas progress. DHHL has developed and is implementing its own renewable energy policy, Hoʻomaluō Energy Policy, to enable native Hawaiians and the broader community to lead the state's effort to achieve energy self-sufficiency and sustainability. Based on PSD's comments, PSD will likely coordinate with The Gas Company to bring utility gas to the proposed MRPSC, as well as consider alternative renewable energy sources such as solar and wind power in designing and constructing the MRPSC. Individual agencies may pursue gas utility options to supply their respective projects, if site conditions allow for the requisite infrastructure. Similarly, renewable energy sources such as solar and wind power would be considered on a site by site basis by the entity involved in developing its individual project. The Pūlehunui Regional Infrastructure Master Plan does not preclude individual agencies from selecting any given energy alternative(s) as they design and implement their respective independent projects.

5.9 IMPACT TO EXISTING AGRICULTURAL USE

Most of the DHHL Project Areas were formerly leased to Alexander & Baldwin, Inc. (A&B) for sugarcane cultivation. When A&B transitioned out of sugarcane in 2016, the lease was not renewed. Prior to sugar cultivation, much of the region was occupied by the Naval Air Station (NAS)Puʻunēnē.

Chapter 205, Hawaiʻi Revised Statutes (HRS), declared that the people of Hawaiʻi have a substantial interest in conserving the agricultural resources of the State. The State calls for the identification of important agricultural lands (IAL) to identify and plan for the maintenance of a strategic agricultural land resource base that can support a diversity of agricultural activities and opportunities that expand agricultural income. The DHHL Project Areas are not designated as IAL. See Figure 5-23.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, Ms. Kekoa Enomoto wrote: "My manaʻo is that Pulehunui ag-homestead awardees should be required to 1) reside on the subsistence-ag lots, and 2) submit, and within two years abide by, an ag plan." Refer to Appendix B-2 for a copy of Ms. Enomoto's comment and DHHL's response.

The County of Maui Planning Department wrote:

> 5. We note that the project area is designated 'Prime,' according to the Agricultural Lands of Importance to the State of Hawaii. We note that your proposed development includes agriculture, diversified agriculture and agricultural homesteads, and that there is a need for locally grown products, as well as great community support. Instead of the proposed industrial and commercial uses, would the Applicant consider a project consisting solely of agricultural uses?

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands, and the anticipated land uses are generally consistent with the Department's existing Maui Island Plan. The anticipated amendment to the Department's Maui Island Plan is being sought to refine the plan for agriculture and supporting uses at Pulehunui South, based on outreach to DHHL Beneficiaries which is detailed in Section 9.2. As noted in Section 1.1.2 and pursuant to DHHL's mission , the secondary, supporting purpose of the Proposed Action is to further define the programmatic land uses anticipated on DHHL's two lands in Pūlehunui ("Pūlehunui North" and "Pūlehunui South") through the Beneficiary Consultation process and technical studies, to ensure conformance with the Maui Island Plan (Department of Hawaiian Home Lands, 2004), and to provide direct and indirect benefits to DHHL Beneficiaries and programs in the form of improved lands, homesteading opportunities, and opportunities to pursue revenue generating general leases at Pūlehunui North. Changing the proposed land use in Pūlehunui North to solely agricultural uses would generate substantially lower revenue, negatively impacting DHHL's ability to fulfill the Department's mission in the long term. Moreover, excluding agricultural supporting uses would go against the outcome of DHHL's public engagement and consultation as outlined in Section 9.0. Generally, the anticipated land uses at the DHHL Project Areas are the product of extensive outreach to the DHHL Beneficiary community, in line with our Department's mission.

The development of Pūlehunui North and Pūlehunui South will repurpose approximately 360 acres of fallow former agricultural lands, for commercial/light industrial and community uses, substantial portions of which will remain in open space or be committed to agriculture supporting uses. This change in use represents a small portion of the State Land Use designated "Agricultural" lands on Maui. It is noted that the DHHL Project Areas are not designated as IAL pursuant to Chapter 205-42, HRS.

Given the anticipated agricultural uses at Pūlehunui South, DHHL hired Agricon to conduct an Agricultural Feasibility Study for the property. The study can be found in Appendix D and concluded that Pūlehunui South is well suited for growing crops due to the availability of good natural resources on such as its underlying soils and beneficial climate conditions. Most of Pūlehunui South is classified Prime Agricultural Lands of Importance to the State of Hawaii and is therefore considered to be the best lands for agriculture. Refer to Figure 5-23.

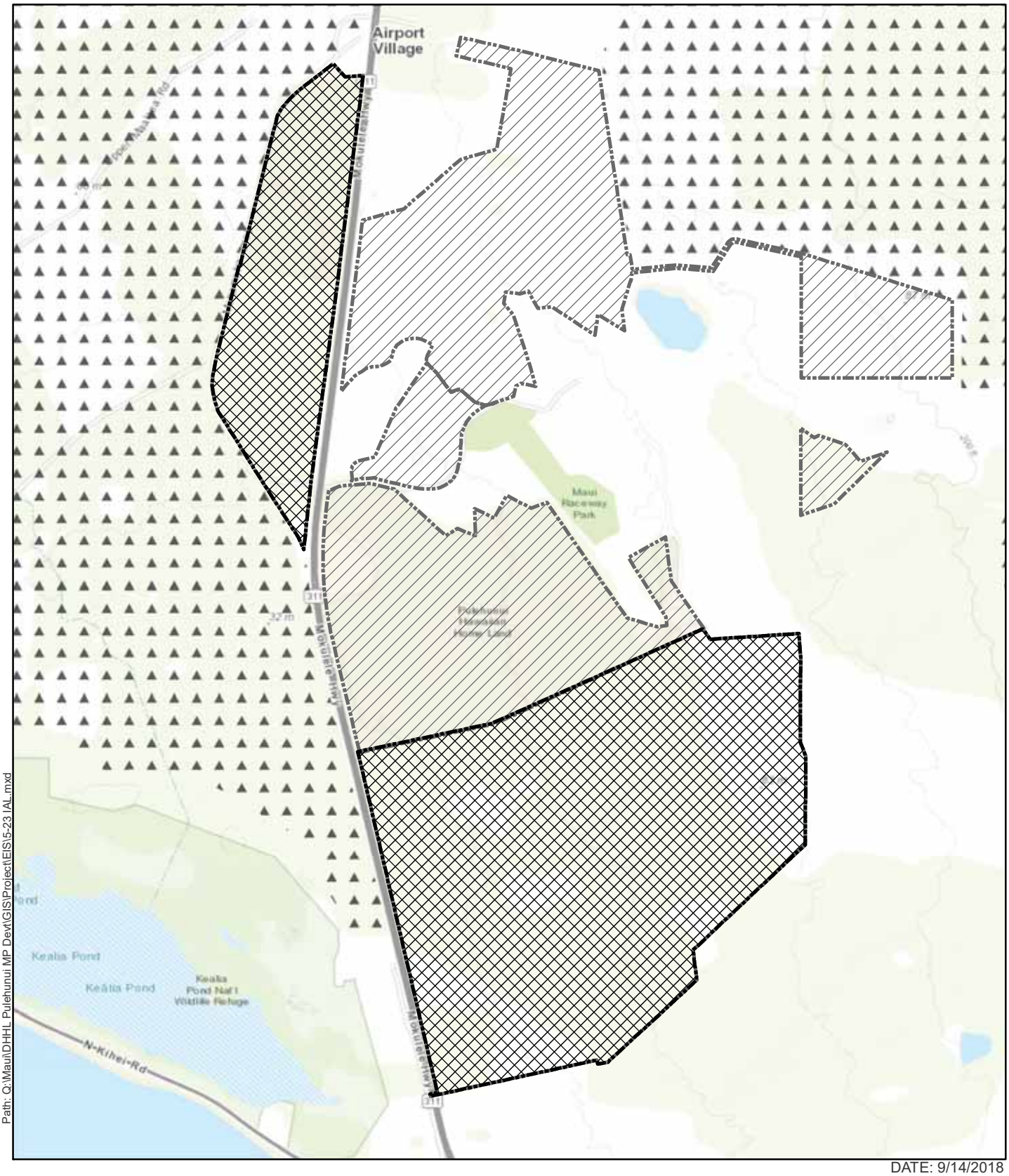
Agricultural use at Pūlehunui South will require a water supply for irrigation as well as windbreaks to protect the proposed agricultural uses from strong winds and mitigate soil erosion. Long term soil erosion can also be mitigated through use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. A primary windbreak should be planted along the windward boundary of the property. The recommended tree used for the primary windbreak is Norfolk Island Pine (*Araucaria heterophyllum*) as it is considered a tall species that is designed to diffuse the wind rather than block it. It is also recommended that two rows of trees be planted in an alternating sequence (such that the second row blocks the gap created by the first row). Plants or non-growing material can be used for intermediate windbreaks. The distance between intermediate windbreaks will depend upon the crops that are planted and the effectiveness of the primary windbreak. (DHHL is open to considering alternative viable windbreak trees such as native species.)

Temporary erosion control measures will be implemented to minimize soil loss and erosion hazards during the construction period, thereby mitigating adverse impacts to future agricultural activities and properties downwind or downstream. Temporary Best Management Practices (BMPs) may include sediment basins, diversion berms and swales, silt fences, dust fences, inlet protection, slope protection, stabilized construction entrances and truck wash-down areas. Periodic water spraying on loose soils will take place to minimize airborne dirt particles from reaching adjacent properties.

All discharges related to the Proposed Action's construction or operation activities, whether or not National Pollutant Discharge Elimination system permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55. An application for a National Pollution Discharge Elimination System (NPDES) permit will be submitted to the State Department of Health (DOH) for review and approval as applicable.

Pursuant to the Clean Water Act, a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the proposed action may result in any discharge into navigable waters or as otherwise triggered. All discharges related to the construction and operation of the proposed action will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.

Following the previous use of Pūlehunui South by the Hawaiian Commercial & Sugar Company (HC&S) for sugar cultivation, there is strong community support for the continuation of agricultural uses on this land. There is also an opportunity to grow a variety of food crops in a range of farming approaches and farm sizes, including commercial farm crops and crops for subsistence agriculture that can support Maui residents as well as provide opportunities in the local economy. Recent feedback from the Beneficiary community showed overwhelming support



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area
- Important Ag Lands (IAL)

Figure 5-23:
Important Agricultural Lands

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)
0 500 1000 2000

Source: ESRI online basemap. State OP, 2015 (rev 2016).

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

for subsistence agricultural, diversified agriculture, and other community uses at Pūlehunui South (Section 9.2). The commercial/industrial designation of portions of the DHHL Project Areas provides for flexible use and could support opportunities in retail, agribusiness processing, packaging, and/or marketing of agricultural goods including those produced by DHHL's agriculture lessees.

Markets for farm products on Maui are varied and many markets are close to the Pūlehunui property. The demand for local farm products is very strong with preference given to Maui grown products of good quality. The large food brokers, such as Kula Produce in Kahului, an Armstrong Produce Company, are buyers of Maui produce and have food safety procedures in place for the farmer to follow. Other Maui food brokers are HFM Foodservice, Haiku Produce and D. Otani Produce. Maui supermarkets, such as Whole Foods, Down to Earth, Costco in Kahului, and Times Supermarket will also purchase Maui grown farm products. In addition, there are specialty markets, the Maui Food Bank, and smaller-scale farmers markets that are involved in the purchase of locally grown food.

5.10 SOCIO-ECONOMIC CHARACTERISTICS

5.10.1 *Population*

The County of Maui includes the islands of Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe, with an estimated 95 percent of the County's residents living on Maui Island in 2017. As a whole, the County is the third most populous of the four counties of Hawaiʻi, with an estimated 166,348 persons in 2017, up 7.3 percent from the 154,924 persons counted at the 2010 Census (U.S. Census Bureau)[5]. This represents a 1.0 percent annual rate of population increase.

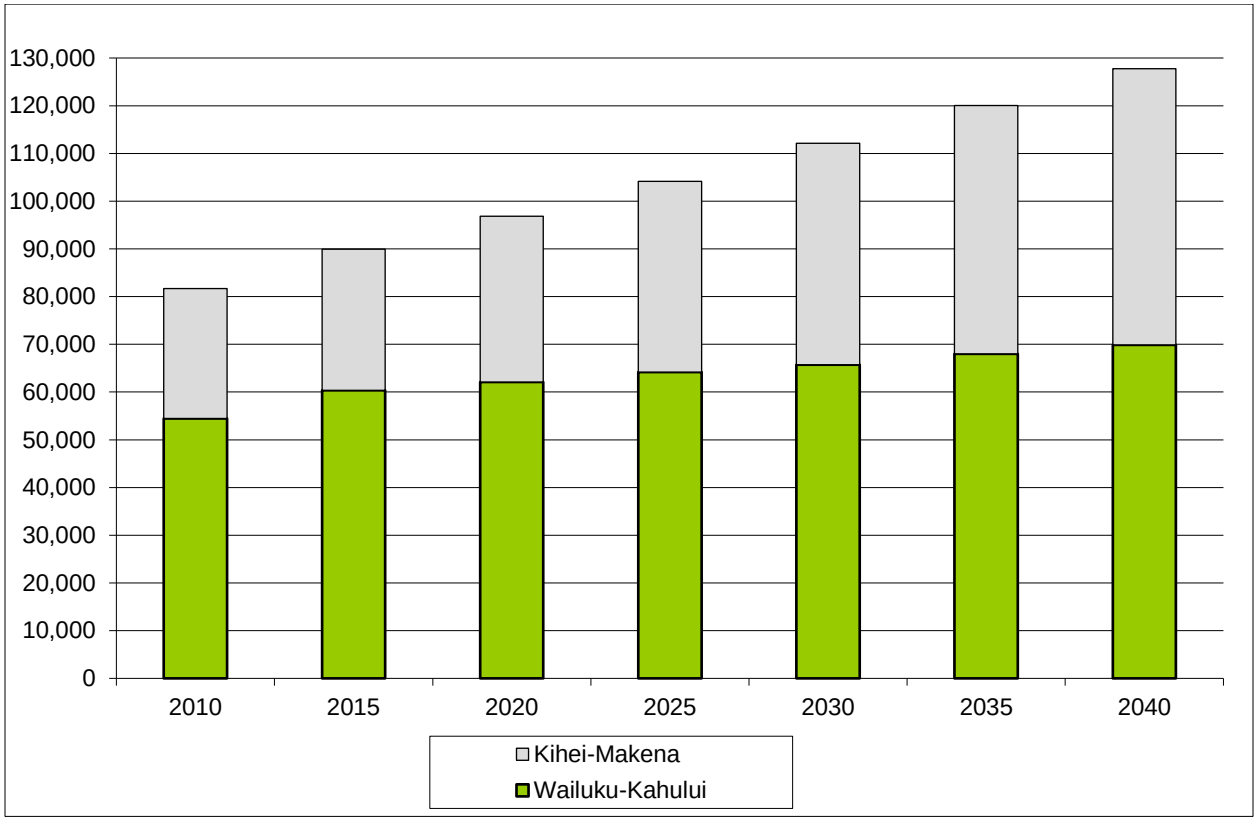
While population continues to grow, the rate of increase is slowing. County population increased 21.0 percent between 2000 and 2010, at annual rates of 2.1 percent between 2000 and 2005, and 1.6 percent between 2005 and 2010. Going forward, the State expects the County population will increase at 1.1 percent per annum to 2020, with annual rates of increase declining to 0.7 percent between 2035 and 2040.[6] This would result in a total County population of some 205,040 persons in 2040. The Maui County Department of Planning periodically updates its General Plan and Community Plans, and produces socio-economic forecasts for the County, Islands and Community Plan (CP) areas. The latest materials available remain in draft form as of this writing and were prepared prior to the release of the State projections referenced above. However, this latest County study (Draft County Forecast) sheds light on qualitative aspects of Maui's growth, and offers insights to trends for Maui Island and its CP areas.[7]

[5] U.S. Census Bureau, 2011, Summary File, Table P1; Ibid, Population Division, "Table 1. Annual Estimates of the Resident Population for Counties of Hawaii", April 1, 2010 to July 1, 2016," (COEST2009-01-15) March 2018.

[6] State of Hawaii, Department of Business, Economic Development and Tourism, Research and Economic Analysis Division, "Population and Economic Projections for the State of Hawaii to 2045," (DBEDT 2045 Series), June 2018.

[7] County of Maui, Planning Department, "Socio-Economic Forecast Report 2014" final draft, 9/15/2014; subject to review and finalization by the Department's Long Range Division (LRD).

Table 5-6: Historical and Projected Resident Population in the Wailuku-Kahului and Kīhei-Mākena Community Plan Areas



Source: County of Maui, 2014

Demographic trends described in the Draft County Forecast include:

- De facto population, including visitors present but excluding residents temporarily absent, is expected to increase to 270,285 by 2035, a gain of more than 60 percent since 2010.
- The population is aging: the median age increased from 33.5 to 39.6 years between 1990 and 2010.
- County households are becoming smaller: The County average declined from 2.99 persons per household in 1990 to 2.87 persons per household in 2010, although it the report notes it is unclear how the coincidence of aging and smaller households will interact in the coming years.

According to both County and State projections, resident and visitor populations of Maui County, Island and the Kīhei-Mākena CP area are anticipated to continue to increase. While rates of increase may decline and the Draft County Forecasts may be revised downward when they become final, this will still result in substantial additional resident and visitor population levels in all areas. Based on the Draft County Forecast, considering the 2020 to 2040 period:

- Island resident population will increase at 1.3 percent per annum, adding more than 49,000 persons, while
- The Kīhei-Mākena CP area grows at 2.6 percent per year, adding 23,100 new residents, and
- The adjacent Wailuku-Kahului CP area grows at 0.6 percent per year, accounting for about 7,800 of the Island's population growth.

There are currently no residents within the DHHL Project Areas.

Potential Impacts and Mitigation Measures

The significant population increases anticipated in the island-wide and CP areas, as described above, suggest a corollary need for more jobs and housing, as well as substantial investments in public and commercial services and infrastructure. Population growth is expected to be particularly rapid in the Kīhei-Mākena CP area. While the Kīhei-Mākena area has historically seen substantial focus on resort- and visitor-related commercial development, the developments proposed within the Infrastructure Regional Study Area offer needed regional infrastructure solutions and more focus on industrial and primary resident (including native Hawaiian)-serving projects.

Only modest population growth is anticipated in the DHHL Project Areas (at Pūlehunui South), assuming homesteads will be implemented in the areas identified, as described in Section 5.10.2 below.

5.10.2 *Kīhei-Mākena Community Plan Area*

As noted in the Draft County Forecast, the Kīhei-Mākena Community Plan (CP) area, in which the property is located, is Maui County's second most populous CP area (after the Wailuku-Kahului CP area). In 2015 it was estimated to account for about 19 percent of Maui Island's population, and 21 percent of its households. However, the area accounted for some 23 percent of the Island's wage and salary jobs in 2015.

While the Infrastructure Regional Study Area is within the Kīhei-Mākena CP Area, the adjacent Wailuku-Kahului CP area is also addressed due to its proximity to the Proposed Action. Wailuku-Kahului is expected to remain the economic and population center of the island and County (accounting for about 38 percent of Maui's population, 34 percent of its households, and 46 percent of wage and salary jobs in 2015). However, the Kīhei-Mākena CP area is expected to gain share; according to the Draft County Forecast, the Kīhei-Mākena CP area "has combined a growing visitor economy, new jobs associated with both visitors and the tech sector, and expanding residential areas. It has had the smallest average household size. The forecast extends all these trends. Based in part on recent development proposals, the forecast shows stronger growth in residential units than in visitor units." (County of Maui, Planning Department, 2006)

Potential Impacts and Mitigation Measures

As noted in the Draft County Forecast, residential growth in the Kīhei-Mākena region has been consistent, remaining home to almost a quarter of Maui's households. (Wailuku-Kahului remains the economic and population center of the island, as home to over a third of Maui's households.) By providing a regional infrastructure master plan, the Proposed Action facilitates the creation of facilities and jobs to sustain this growth, thus supporting projected long-term patterns of settlement and growth on Maui. Additionally, as observed in the DLNR Industrial and Business Park ~~DEIS~~ FEIS, much of the existing inventories of industrial lands in the region currently bear prices that encourage commercial and/or quasi-retail uses, which are allowed by their "stacked" zoning designations. ~~On the other hand, conventional light industrial subdivisions are still observed in Central Maui but were noted to have diminishing developable inventory.~~

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 4. For the Final EIS, please include a statement that it is anticipated that the Maui County Code (MCC), Title 19 will likely undergo revision in the next few years. The Department does not favor stacking uses and M-1 Light Industrial zoning consists of many different types of uses. When Title 19 is revised, the permitted uses within the M·1 Light Industrial zoning may also be amended so that it is just light industrial.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

DHHL observes that such a revision may impact lands in the Infrastructure Regional Study Area subject to County land use controls and, indirectly, the regional market for light industrial lands. Conventional light industrial subdivisions in Central Maui are noted to have diminishing developable inventory which may offset some of those impacts. (The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands, and as noted DHHL anticipates a diverse range of uses at the DHHL Project Areas.)

During the EISPN Public Review period, the Maui County Department of Housing and Human Concerns – Housing Division wrote: "The Department has reviewed the Environmental Impact Statement Preparation Notice (EISPN) for the above subject project. Based on our review, we have determined that the subject project is not subject to Chapter 2.96, Maui County Code. The Department has no additional comments to offer."

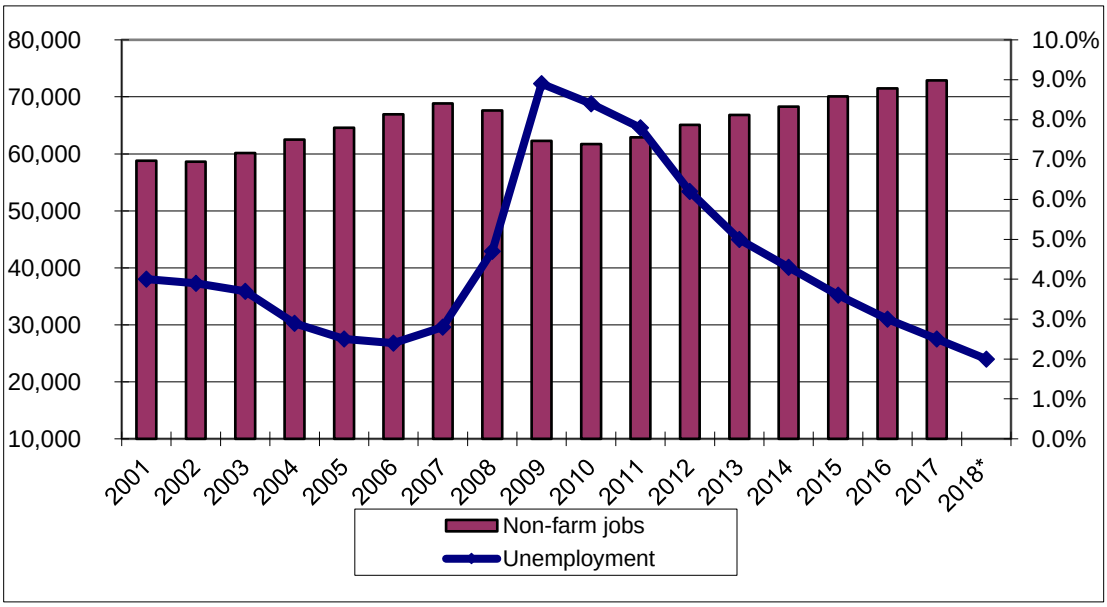
5.10.3 *Economic Overview*

According to the Draft County Forecast the island of Maui is expected to have 73,088 wage and salary jobs in 2020, of which 17,050 or 23 percent would be in the Kīhei-Mākena CP, and 30,538 or 42 percent would be located in the Wailuku-Kahului CP. By 2040, the Draft County Forecast anticipates growth in wage and salary jobs will average 0.8 percent for the island, 1.2 percent in Kīhei-Mākena, and 0.6 percent in Wailuku-Kahului.

The Draft County Forecast also notes that:

- Rates of increase in resident population, housing and employment have been higher than for visitor counts. This is interpreted to mean that the County economy is more diverse and less reliant on tourism than it may have been in the past.
- Per capita income is expected to increase only modestly in terms of constant dollars.

Table 5-7: Historical Employment Trends, Maui Island



** As of July 2018*
Source: State of Hawaii, Department of Industrial and Labor Relations

On Maui Island, the civilian labor force was estimated at 82,650 persons in 2017, with a historically low unemployment rate of 2.5 percent. As of July 2018, the Island's unemployment is estimated to have declined even further, to a seasonally adjusted 2.0 percent.

In 2016, the biggest sectors of nonagricultural jobs were trade, transportation and utilities (21 percent), leisure and hospitality (32 percent) and government (13 percent.)

Presently, the DHHL Project Areas represent fallow agricultural lands and there is no employment supported on-site.

Potential Impacts and Mitigation Measures

While unemployment remains at historically low levels on the island, anticipated growth in population is currently expected to outstrip growth in wage and salaried jobs, particularly in the Kīhei-Mākena and Wailuku-Kahului areas. The Draft County Forecast is based on analyses that do not necessarily reflect specifically proposed developments in each area, and the developments

in the Infrastructure Regional Study Area offer a means of mitigating traffic and other impacts by generating a wide variety of jobs close to areas of population growth.

PBR HAWAII & Associates, Inc. was retained to by the Department of Hawaiian Home Lands to assess the potential economic and fiscal impacts related to the proposed improvements in the Infrastructure Regional Study Area. The results of this study are presented in detail in Appendix J, and summarized in Section 5.10.4.

5.10.4 *Economic and Fiscal Impact Assessment*

The Proposed Action will enable long-term developments by four State agencies, and those developments will in turn generate substantial employment and fiscal benefits during their development and operations. This section summarizes key conclusions of the Economic and Fiscal Impact Assessment (EFIA) of the Pūlehunui Regional Infrastructure Master Plan that was prepared by PBR HAWAII & Associates, Inc., and which is presented in Appendix J.

The analyses undertaken reflect economic multipliers and coefficients derived from the State of Hawai'i, Department of Business, Economic Development and Tourism (DBEDT), "The Hawaii State Input-Output Study: 2012 Benchmark Report," March 2016, and DBEDT's "The 2012 Hawaii Inter-County Input-Output Study," May 2016 (collectively herein, DBEDT 2016).

Study Objective and Reporting Periods

The objective of the EFIA was to estimate the economic and fiscal impacts of the Proposed Action within Maui County (County) and the State of Hawai'i (State). In addition, the EFIA estimates impacts of other projects proposed in the area by DLNR and DAGS/PSD, since those projects may be facilitated by the Proposed Action, depending on the selected infrastructure alternative(s). Factors evaluated include development and operational employment and personal earnings, population impacts, and County and State government net fiscal impacts and revenue/expenditure ratios. Because the Proposed Action involves multiple projects being developed over an extended period of time, conclusions are presented with respect to three time periods:

- **Early Development and Operations (2020-2028)** – This 9-year period encompasses the major planning, master ground leasing, design, financing, and groundbreaking, together with initial construction and operations for the Pūlehunui Projects.

- **Completion of Development, Lease-up and Buildout (2029-2038)** – The next 10-year period encompass full buildout of the Pūlehunui Projects, and stabilization of sub-tenant leases and operations.

- **Stabilization (2039 on)** – This depicts the long-term impacts of the Pūlehunui Projects, after initial developments are complete and operations are stabilized.

Project Elements and Nomenclature

The EFIA evaluates those real estate developments likely to generate employment, income, population movements or government revenues or expenses. These include agricultural homesteads and farms, educational or community facilities, commercial and industrial uses, and the proposed DAGS/PSD Maui Regional Public Safety Complex (MRPSC.) Within the EFIA, the various elements are grouped and referred to as:

- **"Proposed Action"** – The EFIA uses this term as defined elsewhere in this EIS. It refers to the proposed regional infrastructure projects, together with developments contemplated by DHHL on its Pūlehunui South and Pūlehunui North properties.
- **"Other Area Projects"** – This is defined as the developments proposed at DLNR's Industrial and Business Park (DLNR Industrial and Business Park), as well as the DAGS/PSD Maui Regional Public Safety Complex (MRPSC)[8].

- **"The Pūlehunui Projects" –** This refers to all the projects of the Pūlehunui Regional Infrastructure Master Plan that are evaluated in the EFIA, including the Proposed Action and Other Area projects.

- **"Cumulative" / "Cumulative impacts"** – These titles refer to the economic and fiscal impacts of all the Pūlehunui Projects considered together.

Proposed Action

The summaries below are stated in terms of total[9] (direct, indirect and induced) impacts, and all dollar references are stated in 2018 dollars unless otherwise noted.

Project Costs

The Proposed Action is expected to generate some $1.03B in development expenditures in the State, or about $49M to $59.8M per year over the 19-year development period.

Adding in the Other Area Projects, the Cumulative development cost of all Pūlehunui Projects is estimated at $2.34B. In total, these expenditures are expected to average about $141.6M per year between 2020 and 2028, and $106.9M per year between 2029 and 2038.

Most development costs are for construction, representing "hard costs" such as labor and materials. While about 80 percent of direct construction labor is anticipated to come from within the County, materials are typically purchased from off-island and/or out-of-State. Additionally,

[8] The MRPSC is proposed by PSD within lands for which DLNR holds title and DAGS will have some management oversight. This project may be referenced herein with respect to PSD only and is considered for analysis purposes to occur on an approximately 40-acre site.

[9] Indirect and induced impacts incorporate what are popularly referred to as "multiplier effects" of a project's direct impacts. "Total" impacts are the sum of direct, indirect and induced impacts. See Appendix **J** for further explanation of this and other terminology used herein.

development budgets cover "soft costs" such as design, engineering, and legal services, as well as permitting, insurance, administrative and office costs, etc. Substantial shares of these "soft" budgets can be expected to be expended outside of Maui County. Overall, about 58 percent or $599.7M of the Proposed Action development expenditures are anticipated to be realized in Maui County, while the balance could benefit other counties of the State, especially the City and County of Honolulu.

Employment

The Pūlehunui Projects will be the source of many new jobs on-site, and will represent net new job creation in both the County and the State. Considering the Proposed Action impacts:

- **Development employment** - During its buildout, the Proposed Action is estimated to generate some 490 to 600 full-time equivalent (FTE)[4] jobs annually, including positions supported directly and indirectly by its initial development expenditures. About 65 percent of these jobs are expected to be located on Maui, representing about 320 to 390 FTE jobs in an average year between 2020 and 2038.

- **Operational employment** - The employment impacts of a real estate development are often thought of as those that occur at its new facilities. While this is important, and many such on-site jobs will be new, others may be jobs that would have existed, or previously existed, elsewhere in the County and/or State. Therefore, assessment of the operations-related employment impacts is presented two ways: in terms of on-site employment as well as net new employment.

    - **On-site** – By the time of their completion in 2038, the Proposed Action is estimated to support some 3,070 FTE jobs on-site. These would all be direct, ongoing positions.

    - **Net new** – While some of the on-site jobs could represent positions that might have been located elsewhere in the County and/or State even if the Proposed Action was not developed, by buildout in 2038, the Proposed Action is expected to have created some 4,300 FTE positions statewide. Of this statewide total, about 83 percent, or 3,600 positions are estimated to have been created in Maui County. These "net new" jobs include technical, managerial and staff positions at the various Pūlehunui Projects themselves, and many other positions in myriad industries that can be expected to be generated throughout the economy via indirect and induced economic factors. Like the on-site positions, these net new operating benefits are expected to be ongoing.

Personal earnings

Personal earnings are evaluated with respect to the development and net new operational job creation described above.[10] With respect to the Proposed Action:

- **Development-related positions** are expected to support total personal earnings of some $33M to $40M in a typical year, statewide, during the Projects' design and construction. These earnings represent an average of about $67,000 per FTE job, including direct construction-related jobs as well as the indirect and induced opportunities created throughout the economy. The many jobs created directly by the development are expected to enjoy higher salaries than this overall average, in the range of about $86,000 to $87,000 FTE.

  About 65 percent of development earnings can be expected to be realized in Maui County, representing some $21M to $26M per year in development-related earnings during buildout of the Proposed Action.

- **Net new operational positions** at the Proposed Action is projected to support about $198M per year in new earnings for Hawaii residents statewide, at buildout. On average, net new FTE positions are expected to earn about $46,000 to $47,000 each.

  Maui residents are anticipated to realize about 81 percent of the statewide total annual earnings, or about $160M by 2038 and annually thereafter.

Population Movements

Population movements may be driven by the Pūlehunui Projects' employment opportunities as well as the new residential opportunities at the planned agricultural homesteads. In addition to these resident impacts, the possible hotel at Pūlehunui North could be expected to have a de facto population impact, meaning persons present in the County or State on any given day.
Population impacts are of interest in themselves and are also evaluated because additional persons would be expected to require additional State and County resources and services, and the costs of those operations are the subject of analysis in the fiscal impacts section.

- **Employment** - Employment impacts are assessed for the Projects' direct impacts only. Development opportunities are expected to drive some temporary relocations to the County and possibly the State, while operational positions could represent long-term impacts. A small share of those employees who are relocating because of an employment opportunity is assumed to be accompanied by dependent(s).

[10] As used herein, earnings are defined in alignment with the framework of the DBEDT 2016 models. They include wage, salary and proprietary incomes, plus directors' fees and employer contributions to health insurance, less employee contributions to social insurance. Earnings exclude gratuities and bonuses that may also apply to certain types of work.

- **Homesteads** - While DHHL has observed that home development in its agricultural homestead communities is very slow, so as not to under estimate the Pūlehunui Projects' potential population impacts, it is assumed that all 100 planned lots are improved with homes by 2038, and that up to 60 percent of the associated households move from another County because of this homestead opportunity.

- **Resident population impacts -** Altogether, over time the Proposed Action could be associated with up to 490 persons who have relocated to Maui County from another County. Within that group, a subset of some 220 could be persons who relocated from another State. These population impacts are expected to decline after 2038, as the impact of development employment diminishes.

- **Visitor population impacts -** The 200-room possible hotel at Pūlehunui North could also be expected to accommodate some 340 guests on an average day. About 10 percent of these visitors are estimated to be Kama'āina, and while therefore their presence on Maui represents a de facto population impact for the County, it would not be an impact to the State.

Fiscal Impacts

An overall positive fiscal impact is anticipated. The Pūlehunui Projects include many elements that will directly serve or benefit to the important missions of the four State agencies considered here, in qualitative as well as financial terms. However, this section focuses on fiscal impacts, in terms of the creation of new revenues and expenses for the County and State governments. In terms of the Proposed Action impacts:

- **County impacts** - Net additional County operating revenues are projected at $2.3M per year by the time of project buildout, in 2018 dollars. The anticipated additional County revenues are expected to represent two times the additional operating expenses that may result from the Proposed Action's development.

- **State** - With its more diverse taxing powers, fiscal benefits for the State are expected to be even more significant than for the County, in both relative and absolute terms. Towards the anticipated buildout in 2038, when development activity and operations are both still active, net additional operating revenues are estimated to average over $12M per year, with a revenue to expenditure ratio of around eight.

  After completion of the initial buildout, net additional State revenues could continue at about $9M per year, with ongoing new revenues amounting to about six times new expenditures.

The total (including direct, indirect and induced) fiscal impacts of the Pūlehunui Projects are summarized as follows:

Table 5-8: Estimated Total Fiscal Impacts[11]

	2028	2038	Ongoing (stabilized annual)
PROPOSED ACTION:			
Net additional revenues ($mil)			
To the County	$1.3	$2.3	$2.3
To the State	$9.5	$12.6	$9.0
Net revenue/expenditure ratio			
For the County	2	2	2
For the State	11	8	6
CUMULATIVE IMPACTS:			
Net additional revenues ($mil)			
To the County	$5.1	$8.0	$8.1
To the State	$20.7	$31.2	$26.4
Net revenue/expenditure ratio			
For the County	4	3	3
For the State	12	9	8

Source: PBR HAWAII, 2018. See also Appendix K, Exhibits 5-5, 5-6 and 5-7.

In addition to the government revenue and cost impacts quantified above, the Pūlehunui Regional Infrastructure Master Plan will result in the implementation of several needed regional infrastructure projects that will benefit government as well Hawaii residents, as discussed in the accompanying EIS.

5.11 PUBLIC SERVICES AND FACILITIES

During the Draft EIS public review period, DAGS wrote: "The proposed project does not impact any of the Department of Accounting and General Services' existing facilities. We will continue to coordinate our activities with the Department of Public Safety and the Department of Hawaiian Homelands in developing the Maui Regional Public Safety Complex." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

5.11.1 *Schools*

The State Department of Education (DOE) operates several schools in the Kahului and Kīhei regions, as shown in the following Table 5-9.

[11] 2018 dollars, in millions

During the Draft EIS public review period, DOE wrote:

> The HIDOE schools currently servicing the proposed DHHL Project are Kihei Elementary, Lokelani Intermediate, and Maui High. Kihei Elementary and Lokelani Intermediate schools have capacity for roughly 200 and 125 students, respectively. This excess capacity is expected to remain the same over the next five years. Maui High School is over capacity by approximately 400 students. This over capacity is expected to remain the same over the next five years. Though Kihei High School is anticipated to open during this time period, no immediate decrease in student population at Maui High School is anticipated.

Ground breaking occurred earlier this year for the initial phase of the new Kihei High School. This first phase will provide classroom capacity for approximately 800 students; with a maximum design capacity for approximately 1,600 students. The HIDOE anticipates opening this first phase for the 2021 /2022 school year. Once opened, it is anticipated that the high school will gradually reduce the number of students attending Maui High School.

Table 5-9: Educational Facilities

Elementary Schools (Grades K through 5)	
School	**Location**
Kahului	Kahului
Kamali'i	Kīhei
Kihei	Kīhei
Lihikai	Kahului
Pomaikai	Kahului
Intermediate Schools (Grades 6 through 8)	
Lokelani	Kīhei
Maui Waena	Kahului
High School (Grades 9 through 12)	
Maui High	Kahului
Charter Schools (Grades K through 12)	
Kihei PC High School	Kīhei
Source: State of Hawai'i, Department of Education	

In January 2016, the DOE conducted groundbreaking ceremonies for the new Kīhei High School (KHS) which will be situated in North Kīhei, mauka of Pi'ilani Highway. Ground work for new wells and an access road was completed in 2016. The next phase of site construction is anticipated to begin by the end of 2017 or early 2018 (Friends of Kihei High School, 2017).

University of Hawai'i - Maui College, located in Kahului, is the primary higher education institution serving the island of Maui.

Potential Impacts and Mitigation Measures

During the EISPN Public Review period, the Department of Education wrote:

> The Project is located within the Central Maui School Impact Fee District, Wailuku Cost Area. In 2007, the Hawaii State Legislature enacted the school impact fee program allowing for the collection of impact fees from residential projects within School Impact Fee Districts designated by the Board of Education (BOE). The Central Maui School Impact Fee District and impact fee amount was established by the BOE in 2009. A single family unit is assessed a fee of $5,373 and a multi-family unit is assessed a fee of $2,371.

During the Draft EIS public review period, DOE wrote:

> The DEIS incorporates HIDOE previous comments on the Environmental Impact Statement Preparation Notice (EISPN), by memorandum dated January 22, 2018, regarding the Projects location within the Central Maui School Impact Fee District. Since the EISPN, the DHHL Project has been refined to include the development of approximately 80 to 100 agricultural homestead lots at Pulehunui South. When the DHHL Project is mature and unit turn over stabilized, we would expect approximately 49 HIDOE students will reside there.
>
> […]
>
> Chapter 302A-1606, Hawaii Revised Statutes requires the developer of new residential development with 50 or more units, to execute an agreement with the HIDOE. The DHHL is encouraged to meet with the HIDOE as early as possible to execute an Educational Contribution Agreement.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

DHHL will continue to consult with the appropriate Federal, State, and County agencies to determine potential impacts and coordinate mitigation approaches. DHHL recognizes that if residences are constructed at Pūlehunui South, school-aged children from those households will place additional demand for public and private educational facilities. To mitigate potential impacts, as plans for the DHHL Project Areas progress, DHHL will consult the DOE regarding school impact fees and other potential impacts to educational resources. DHHL Project Areas will comply with any applicable impact fee requirements (including an Educational Contribution Agreement, as applicable). The realization of Pūlehunui South may even make a positive impact on educational opportunities. Based on the demand for community uses including cultural education, 33 acres of land have been set aside for educational uses at this property.

Pūlehunui North is not expected to be a direct population generator. As such, it is not anticipated to place additional demand upon educational facilities in the Kahului and Kīhei regions.

5.11.2 *Police*

Pūlehunui is located within the Maui Police Department's (MPD) service area, the headquarters for which are located in Wailuku. The MPD consists of several patrol, investigative, and administrative divisions. The DHHL Project Areas fall within the MPD's District VI, Kīhei that covers the Kīhei - Mākena Community Plan region. The Kīhei District station is located on the eastern side of Piʻilani Highway across the signalized intersection of the highway and Kanani Street.

Potential Impacts and Mitigation Measures

Those working or visiting Pūlehunui at some time may require police protective services at some time. As the County's population grows, there will be a need for the County to allocate resources from real property taxes and other forms of revenue necessary to adequately fund police services. To mitigate potential impacts from the DHHL Project Areas, these additional funds could potentially be allotted from the increased tax revenues resulting from the Proposed Action. In addition DHHL will continue to consult with the appropriate Federal, State, and County agencies to determine potential impacts and coordinate mitigation approaches. As noted in Section 5.10.4, the net additional County operating revenues are projected at $2.3M per year by the time of project buildout, in 2018 dollars. The anticipated additional County revenues are expected to represent two times the additional operating expenses that may result from the Proposed Action's development.

5.11.3 *Fire and Emergency Services*

The Maui County Department of Fire and Public Safety provides fire prevention, suppression, protection, and emergency services to the islands of Maui, Lānaʻi, and Molokaʻi from 14 fire stations and a fire prevention office. The DHHL Project Areas are located midway between Kahului and Kīhei. The Kahului area is served by the Kahului Fire Station located on Dairy Road. The Department's Kīhei station, which services the Māʻalaea and Kīhei areas, is situated on South Kīhei Road adjacent to Kalama Park.

Potential Impacts and Mitigation Measures

Those working or visiting Pūlehunui are likely to require fire protection or emergency medical services at some time. As the County's population grows, there will be a need for the County to allocate resources from real property taxes and other forms of revenue necessary to adequately fund fire prevention and emergency services. These additional funds could potentially be allotted from the increased tax revenues resulting from the Proposed Action. In addition DHHL will continue to consult with the appropriate Federal, State, and County agencies to determine potential impacts and coordinate mitigation approaches. As previously noted, the net additional County operating revenues are projected at $2.3M per year by anticipated buildout, in 2018 dollars. The anticipated additional County revenues are expected to represent two times the additional operating expenses that may result from the Proposed Action's development.

All structures will be designed and built in compliance with all fire protection requirements. Fire apparatus access roads and water supply for fire protection will comply with the Uniform Fire Code.

5.11.4 *Medical*

The Maui Memorial Hospital, located in Kahului, is the only major medical facility on the island of Maui. Acute, general, and emergency care services are provided by the 214-bed facility.

Clinics and offices throughout the Kīhei and Kahului areas offer medical services on a lesser scale.

Potential Impacts and Mitigation Measures

Those working or visiting Pūlehunui at some time may require health care and emergency medical services. Medical services are available in the region.

Pūlehunui North's proposed commercial areas may attract doctors' offices and/or a medical clinic, to serve the community and neighboring areas.

5.11.5 *Public Transportation*

The County of Maui currently operates a public bus system that provides service in and between various Central, South, West, Haʻikū, and Upcountry Maui communities. The DLNR's proposed Industrial and Business Park includes a bike path throughout that project which will connect to an existing bike path on Maui Veterans Highway.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 6. We note that you mention that as your project area progresses, you will explore multimodal transportation networks. We ask that you please develop it with consideration of the Central Maui Pedestrian and Bicycle Master Plan for 2030.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

The Central Maui Pedestrian and Bicycle Master Plan for 2030 was reviewed and it did not appear to extend to the Infrastructure Regional Study Area (State of Hawaii DOH - Healthy Hawaii Initiative, 2012). However, Pūlehunui North's internal roadways will be designed and built to meet County standards and should be able to accommodate the County's public bus transit service. It is hoped that when there is sufficient demand that either the #10 ("Kīhei Islander") or #15 ("Kīhei Villager") bus routes can be extended into the property, as a means of reducing

private vehicular trips on area roads and highways (promoting transportation energy savings), and to provide better transportation and mobility options for those who can and cannot drive.

As plans for the DHHL Project Areas progress, DHHL will investigate opportunities to connect to existing and future multimodal transportation networks such as the existing bicycle and bus infrastructure network. DHHL notes that the DLNR is coordinating with the County of Maui DOT regarding the possibility of creating a bus stop near the DLNR Business and Industrial Park (Munekiyo Hiraga, 2019) and will cooperate with any such efforts relating to the DHHL Project Areas.

5.11.6 *Recreational Facilities*

The County of Maui obtained management and control of 222 acres of State-owned land in Pūlehunui containing the former Puʻunēnē airport runway through an Executive Order (E.O. No. 4024, dated 2003). The land is used for recreational purposes, such as the Pulehunui Motorsports Park and motor bike racing, and is located inland to the east of Maui Veterans Highway in the general proximity to the DHHL Project Areas.

In addition to the Pulehunui Motorsports Park, diverse recreational opportunities are available in the Kahului and Kīhei - Mākena regions.

There are several public park facilities in the Wailuku-Kahului and Kīhei regions. The Wailuku-Kahului region includes Keōpūolani Park, Kanahā Beach Park, and the War Memorial Complex, as well as smaller parks. The Kīhei region includes several beach parks, such as Kalama and Kamaʻole Beach Parks, located to the southeast along the Kīhei coastline. Additional recreational resources available in Kīhei include the Kīhei Community Center, South Maui Park, and various world-class golf courses and tennis centers.

The State also developed a regional recreational park in Central Maui approximately five miles to the northwest that opened in 2016.

DHHL will continue to consult with the appropriate Federal, State, and County agencies to determine potential impacts and coordinate mitigation approaches.

Potential Impacts and Mitigation Measures

Those working or visiting Pūlehunui may utilize existing County and State recreational facilities, but most employees or visitors will reside outside of Pūlehunui, and will likely utilize in recreational facilities closer to their place of residence. If DHHL homesteads are developed at Pūlehunui South, those households will place additional demand for public and private recreational facilities.

Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the

Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea. Large, contiguous commercial lots within Pūlehunui North would be suitable for a more comprehensive commercial or retail complex and/or a visitor attraction destination, cultural center, business hotel or other large visitor industry-based use. For the purposes of preliminary engineering and traffic analyses, a hotel is one of the assumed uses at Pūlehunui North (at the discretion of a future developer) to account for potential developments at this property consistent with DHHL's Maui Island Plan designation.

5.11.7 *Airports and Airfields*

The nearest airfield to the DHHL Project Areas is the approximately 30-acre Puʻunēnē Armory serves the Hawaiʻi Army National Guard (HIARNG) as a recruiting and training area, as well as a staging area for emergency response and related training. Flight paths into and out of the Armory (located across Maui Veterans Highway) may pass over the south portion of Pūlehunui North. Incoming aircraft consist primarily of Chinook and Black Hawk helicopters which typically approach the landing pad from the south.

Potential Impacts and Mitigation Measures

During the Draft EIS public review period, the State of Hawaiʻi Department of Transportation Airports Division (DOT-AIR) wrote:

> The proposed Pulehunui development is approximately four miles from the end of Runway 2 at Kahului Airport (OGG). Pulehunui North also lies below the imaginary transitional airspace surface for OGG. Safety concerns for aircraft operations mandates the DOT-AIR to review all proposed development projects within five miles from airports, as prescribed in the Technical Assistance Memorandum of 2016, created for DOT-AIR with assistance by the Federal Aviation Administration (FAA), Honolulu Airports District Office and the Hawaii State Office of Planning.
>
> Section 5.8.4 of the DEIS, pages 131-136, discusses new retention basins for mitigation to retain storm water at both sites (Pulehunui North and Pulehunui South), independent of outside flows from other properties. Standing water creates a potential wildlife attractant and therefore creates a bird-strike risk to aircrafts flying over the property.
>
> DOT-AIR requests that design and landscaping for the Pulehunui project do not create conditions to attract wildlife. If wildlife is attracted to the project site and poses a potential hazard to aircrafts, the DHHL is requested to take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

DHHL acknowledges that standing water may create a potential wildlife attractant thereby presenting a bird-strike risk to aircraft flying in the region, as well as potentially attracting vulnerable birds to areas inhabited by non-native predators. As noted in Section 4.1, a high proportion of the rainfall that Maui receives each year falls on the northeast facing shores, leaving the central isthmus and southern coastal areas relatively dry. The annual average rainfall in the vicinity of the Infrastructure Regional Study Area (based on readings taken at Kahului Airport) amounts to approximately 11 to 13 inches, and as noted in Section 4.3.1 soils in the region are generally well-drained. Therefore, it is highly unlikely that detention basins will contain standing water in the event of a storm, and any standing water are anticipated to be minimal. At the request of DOT-AIR, DHHL will specify to prospective developers and other site users that design and landscaping at the DHHL Project Areas should not attract wildlife. Should wildlife be determined to present a potential hazard to aircraft, DHHL will take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. DHHL notes FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports.

During the Draft EIS public review period, DOT-AIR also wrote:

> The proposed development may be exposed to fumes, smoke, noise, vibrations, odors, etc., resulting from aircraft flight operations. The DEIS report adequately addressed noise mitigation and disclosure issues, pending actual implementation.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

As noted in Section 5.5, air quality on Maui, and throughout the State of Hawai'i, is considered to be good due to the presence of northeasterly trade winds that tend to disperse pollutants seaward. Regarding regional emissions, the DHHL Project Areas are located in an Attainment/Unclassified area for all National Ambient Air Quality Service (NAAQS) and regional air quality is good. Should DHHL suspect that fumes, smoke, noise, vibrations, odors, and other airport-related exposures may impact the anticipated uses of its lands, more protective mitigation strategies will be considered at such time, depending on the nature of the concern. Should other unforeseen impacts arise from aircraft activities which are not mitigated by the strategies described in this EIS, DHHL will consider additional measures.

Pu'unēnē Armory activities are not anticipated to impact or be impacted by the DHHL Project Areas as the DHHL Project Areas are located a minimum of 200 feet from the armory (and farther from the armory's landing pad) and will include visual and noise buffers as discussed in Sections 5.4 and 5.7.

During the Draft EIS public review period, DOT-AIR also wrote:

> FAA regulation requires the submittal of FAA Form 7460-1, Notice of Proposed Construction or alteration pursuant to the Code of Federal Regulations, Title 14, Part 77.9,

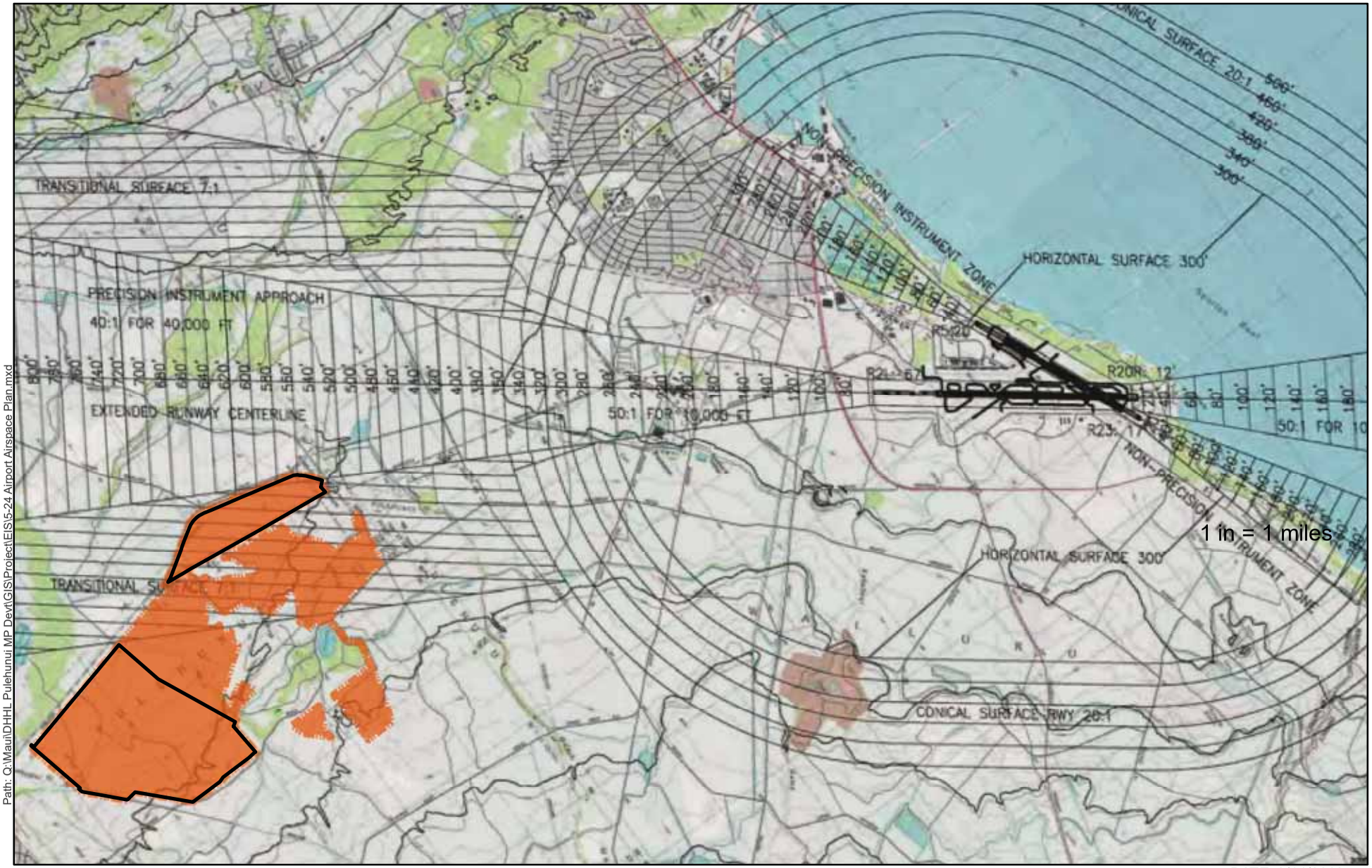
if the construction or alteration is within 20,000 feet of a public use or military airport which exceeds a 100: 1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet.

Large-scale photovoltaic (PV) panel installations have the potential to create glint and glare hazard conditions for aircraft pilots. If the proposed project includes PY installation, it is recommended that the project proponent conduct a glint and glare analysis to ensure that the solar energy installation will not create hazardous conditions to OGG flight operations.

Please see the following website for more information: www.sandia.gov/glare. Large-scale solar energy installations also have the potential to emit radio frequency interference (RFI). Glint, glare, RFI, PY panels and tall equipment such as cranes that may be used during construction can create hazardous conditions to pilots. Any such PY system, construction equipment, and/or other structure that creates a hazardous condition for pilots, must be immediately mitigated by the owner upon notification by the DOT-AIR and/or by FAA.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Figure 5-3 shows a noise exposure map for the Kahului Airport, located a minimum of four miles north of the DHHL Project Areas. Figure 5-24 shows the airport airspace plan in reference to the Infrastructure Regional Study Area, which demonstrates that aircraft may transit over Pūlehunui North but are not anticipated to restrict the anticipated land uses. To prevent potential impacts to airport activities from wildlife, glint/glare hazards, obstructions and other issues, the Federal Aviation Administration (FAA) is being consulted to ensure compliance with any applicable rules and laws including those outlined in the State Office of Planning's technical assistance memorandum regarding airports in the state (State Office of Planning, 2016).



PDF - Q:\Maui\DHHL Pulehunui MP Devt\pdf
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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area

FIGURE 5-24:
Airport Airspace Plan

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (miles)
0 0.25 0.5 1

PBR HAWAII & ASSOCIATES, INC.

Source: Kahului Airport Master Plan Update, 2016.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

6.0 RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AREA

State of Hawai'i and Maui County land use plans, policies, and ordinances relevant to Pūlehunui are described below.

6.1 DHHL PLANNING SYSTEM

In 2004, DHHL adopted the (DHHL) *Maui Island Plan* which examined all DHHL land in terms of development constraints and opportunities and other criteria, in order to assign appropriate Land Use Designations to each parcel. The DHHL *Maui Island Plan* designates Pūlehunui North for commercial and industrial use, noting that homestead residential or subsistence agriculture homesteading would not be appropriate. Although DHHL Beneficiary consultation indicated high housing demand in the region, Beneficiaries identified Pūlehunui North as a prime location for industrial uses due to its location and revenue-generating potential. Moreover, the DHHL Project Areas were identified as less favorable for residential homesteads due to the noise from Maui Veterans Highway and nearby industrial and recreational activities, as well as high wind exposure. The DHHL *Maui Island Plan* noted that availability of water in Central Maui and the distance to existing wastewater treatment facilities may place further constraints on development (Department of Hawaiian Home Lands, 2004). For the above reasons, the DHHL Maui Island Plan concluded that commercial/industrial use is the only primary use suitable for Pūlehunui North, with General Agriculture/Industrial uses at Pūlehunui South. It was determined that agriculture would be an appropriate temporary, secondary land use if market demand would not support more intensive use.

Subsequently, the needs of the Beneficiary community appear to have changed substantially. Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing *Maui Island Plan* designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. The land uses preferred by Beneficiaries at Pūlehunui South correspond to DHHL land use designations of Subsistence Agriculture, Community Use, Supplemental Agriculture, and Commercial Use. Following the completion of the EIS process, DHHL will pursue an amendment of its *Maui Island Plan* to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South. A proposed amendment to the DHHL's *Maui Island Plan*, shown in Figure 3-1, was created to support this preference. See Section 9.0 for more information regarding public engagement and consultation.

6.2 STATE OF HAWAIʻI

6.2.1 *Chapter 343, Hawaiʻi Revised Statutes*

This document has been prepared in accordance with the provisions Chapter 343, HRS (Environmental Impact Statement Law) and Title 11, Department of Health, Chapter 200, Hawaiʻi Administrative Rules (Environmental Impact Rules).

Section 343-5, HRS, establishes nine "triggers" that require compliance with the State's EIS law. The triggers for the Proposed Action include:

- Propose the use of state or county lands or the use of state or county funds.

The Proposed Action is an Agency Action that will be partly funded by Capital Improvement Funds earmarked for infrastructure planning, design, construction, and related site improvements; the use of State or County lands or funds is an action that "triggers" the preparation of an EA or EIS. As plans for the region advance, the Proposed Action may further involve or impact State and/or County lands or funds relating to infrastructure improvements for public facilities, roadways, water, sewer, electrical utilities, drainage, and/or other facilities. While the precise nature or scale of these future improvements is not fully known at this time, the EIS is intended to address current and future instances involving the use of State and/or County lands and funds relating to the Proposed Action.

The consideration of an onsite wastewater treatment facility to serve the Infrastructure Regional Study Area makes it possible that the Proposed Action may include an additional trigger:

- Propose any wastewater treatment unit, except an individual wastewater system or a wastewater treatment unit serving fewer than 50 single-family dwellings or the equivalent.

This ~~Draft~~ Final EIS was preceded by the Pūlehunui Regional Infrastructure Master Plan Draft EIS and Environmental Impact Statement Preparation Notice (EISPN). Section 343-5 (e), HRS (enacted by Act 172 (2012)) allows a Proposing Agency to prepare an EIS rather than an environmental assessment if the Accepting Authority determines, through its judgment and experience, that an EIS is likely to be required. The preparation of such an EIS begins with the preparation of an EISPN, sometimes referred to as an "Act 172 EISPN." Under the provisions of §343-5 (b), HRS DHHL has determined, through its judgment and experience, that an Environmental Impact Statement (EIS) is likely to be required for the Pūlehunui Regional Infrastructure Master Plan based on a review of the significance criteria set forth under Section 11-200-12(b), HAR and listed below:

1. Involves in an irrevocable commitment to loss or destruction of any natural or cultural resource;
2. Curtails the range of beneficial uses of the environment;

3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments there to, court decisions, or executive orders;
4. Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;
5. Substantially affects public health;
6. Involves secondary impacts, such as population changes or effects on public facilities;
7. Involves a substantial degradation of environmental quality;
8. Is individually limited but cumulatively has a considerable effect upon the environment or involves a commitment for larger actions;
9. Substantially affects a rare, threatened, or endangered species, or its habitat;
10. Detrimentally affect air or water quality or ambient noise levels;
11. Affects or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters;
12. Substantially affects scenic vistas and view planes identified in county or state plans or studies; and
13. Requires substantial energy consumption.

Based on the above criteria, DHHL did not expect that it could be affirmatively concluded that activities associated with the Proposed Action would not have a significant effect on the environment. In particular, it is anticipated that the Proposed Action may involve cumulative and/or secondary impacts which may include additional population or effects on public facilities such roads, schools, and recreational facilities which are discussed in Sections 8.2 and 8.3. Further, the Proposed Action is expected to substantially affect the economic and social welfare of the community, in a positive way, impacting the economic welfare of the community and the State.

The State of Hawaii Department of Hawaiian Home Lands submitted the EISPN to the State of Hawaii Office of Environmental Quality Control (OEQC) on December 12, 2018. Notice of the availability of the EISPN was published in the December 23, 2018, edition of the OEQC's *The Environmental Notice*. Copies of the EISPN were provided to the appropriate government agencies and other organizations (See Section 9.2). Public input was sought at a public EIS Scoping Meeting held January 18, 2018. The public comment period for the EISPN began December 23, 2018 and ended January 22, 2018. Comments on the EISPN received during the public comment period are incorporated in this EIS and included in Appendix B.

6.2.2 *State Land Use Law, Chapter 205, Hawai'i Revised Statutes*

The State Land Use Law (Chapter 205, HRS), establishes the State LUC and authorizes this body to designate all lands in the State into one of four Districts: Urban, Rural, Agricultural, or Conservation.

The property is in the Agricultural District. The Hawaiian Homes Commission has ultimate land use authority over Hawaiian Home Lands per the Hawaiian Homes Commission Act, as amended.

6.2.3 *Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes*

The State oversees protection of natural, cultural, and economic resources within the coastal zone, which is defined as all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the United States territorial sea. As such, Pūlehunui lies within the CZM Area.

The relevant objectives and policies of the Hawai'i CZM Program, along with a detailed discussion of how Pūlehunui conforms with these objectives and policies, is discussed below.

During the Draft EIS public review period, the State Office of Planning wrote: "5. CZM objectives and policies are addressed in Section 6.2.3, and Table 6-1, pages 166- 177." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Table 6-1: Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
RECREATIONAL RESOURCES			
Objective: (A) Provide coastal recreational opportunities accessible to the public.			
Policies:			
(A) Improve coordination and funding of coastal recreational planning and management; and			X
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			X
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			X
(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;			X
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
(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;			X

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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;	X		
(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			X
(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 such dedication against the requirements of section 46-6.			X
Discussion: Neither Pūlehunui North or South are located along the shoreline. However, it is acknowledged that all discharges related to project construction or operation activities, whether or not National Pollutant Discharge Elimination system permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55. An application for a National Pollution Discharge Elimination System (NPDES) permit will be submitted to the State Department of Health (DOH) for review and approval as applicable. Pursuant to the "Clean Water Act," a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the proposed action may result in any discharge into navigable waters or as otherwise triggered. All discharges related to the construction and operation of the proposed action will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.			
HISTORIC RESOURCES			
Objective: (A) 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;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	X		
Discussion: 'Āina Archaeology is assisting DHHL in initiating an HRS Chapter 6E consultation for Pūlehunui South. SHPD will be consulted regarding the existing AISs for Pūlehunui North, prior to the developer(s) applying for any permits for that property. Refer to Section 5.1 of this EIS.			
SCENIC AND OPEN SPACE RESOURCES			
Objective: (A) 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;			X
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;			X
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			X
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	X		
Discussion: The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting. The Proposed Action is not coastal dependent and located inland of the shoreline.			
COASTAL ECOSYSTEMS			
Objective: (A) Protect valuable coastal ecosystems, including reefs, 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;			X
(B) Improve the technical basis for natural resource management;			X
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;			X
(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			X
(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.			X
Discussion: Neither Pūlehunui North or South are located along the shoreline. However, it is acknowledged that all discharges related to project construction or operation activities, whether or not National Pollutant Discharge Elimination system permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55. An application for a National Pollution Discharge Elimination System (NPDES) permit will be submitted to the State Department of Health (DOH) for review and approval as applicable. Pursuant to the "Clean Water Act," a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the proposed action may result in any discharge into navigable waters or as otherwise triggered. All discharges related to the construction and operation of the proposed action will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.			
ECONOMIC USES			
Objective: (A) 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;			X
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and			X
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:			X

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(i) Use of presently designated locations is not feasible;			X
(ii) Adverse environmental effects are minimized; and			X
(iii) The development is important to the State's economy.			X
Discussion: While the Proposed Action will provide public facilities and improvements important to the State's economy, it is not located along the shoreline or is coastal dependent.			
COASTAL HAZARDS			
Objective: (A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.			
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;	X		
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	X		
(D) Prevent coastal flooding from inland projects.	X		
Discussion: As noted in Section of 4.4.1 of this EIS, Flood hazards are identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, the vast majority of the DHHL Project Areas is designated Zone X, indicating "areas of minimal flood hazard" outside the 500-year (0.2 percent annual chance) floodplain. (See Figure 4-4). A narrow portion of Pūlehunui North along Maui Veterans Highway is designated Zone XS (0.2 percent annual chance flood). A portion of Pūlehunui South along Maui Veterans Highway is designated Zone AE (100-year flood area), associated with Keāhuaiwi Gulch. At a slightly higher elevation, a portion of Pūlehunui South is designated Zone XS. At the northwestern boundary of Pūlehunui South along Maui Veterans Highway, a small area designated Zone A 100-year (one percent annual chance) is associated with Kolaloa Gulch. Potential drainage infrastructure deficiencies are discussed in Section 5.8.4. Otherwise, the Proposed Action is not subject to hazards from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution. The Proposed Action will be designed to ensure that stormwater runoff does not increase over pre-development quantities.			
MANAGING DEVELOPMENT			
Objective: (A) 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;	X		
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			X
(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.	X		
Discussion: The development of the DHHL Project Areas will not require a Special Management Area Use Permit, however, this EIS is intended to facilitate the development review process, communication, and public participation in the management of the CZM area.			
PUBLIC PARTICIPATION			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Objective: (A) Stimulate public awareness, education, and participation in coastal management.			
Policies:			
(A) Promote public involvement in coastal zone management processes;	X		
(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	X		
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.			X
Discussion: This EIS is intended to facilitate public awareness, education, and participation in coastal management.			
BEACH PROTECTION			
Objective: (A) Protect beaches for public use and recreation.			
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;			X
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			X
(D) 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			X
(E) 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.			X
Discussion: While the Proposed Action will provide public facilities and improvements important to the State's economy, it is not located along the shoreline or affect beaches for public use and recreation.			
MARINE RESOURCES			
Objective: (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;			X
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(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;			X
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and			X
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			X
Discussion: The Proposed Action does not involve the use and development of marine and coastal resources.			

6.2.4 *Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes*

The Hawai'i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. The Plan is divided into three parts: Part I (Overall Theme, Goals, Objectives and Policies); Part II (Planning, Coordination and Implementation); and Part III (Priority Guidelines). Part II elements of the State Plan pertain primarily to the administrative structure and implementation process of the Plan. As such, comments regarding the applicability of Part II to Pūlehunui are not appropriate. The sections of the Hawai'i State Plan directly applicable to Pūlehunui, along with a discussion of how Pūlehunui conforms to the State Plan are included below.

During the Draft EIS public review period, the State Office of Planning wrote: "4. The Draft EIS addresses the project's consistency with the Hawaii State Plan in detail in Section 6.2.4, pages 171-197." Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Table 6-2: Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-1: Findings and Purpose			
HRS § 226-2: Definitions			
HRS § 226-3: Overall Theme			
HRS § 226-4: State Goals. *In order to guarantee, for the present and future generations, those elements of choice and mobility that insure 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:* *(1) A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawaii's present and future generations.* *(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.* (3) *Physical, social and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring and of participation in community life.*			
Discussion: Implementation of the Proposed Action will contribute to a strong, viable economy on Maui, by not only generating places of employment closer to the workforce who may reside in Kīhei (and commute to work in Wailuku-Kahului), but also generate income for DHHL programs and projects. Additionally, the plan for agriculture in Pūlehunui South addresses some DHHL Beneficiaries' expressed interests in farming, community responsibility, of caring and of participation in community life.			
HRS § 226-5: Objectives and policies for population.			
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.*			
Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii'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		

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(3) Promote increased opportunities for Hawaii'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 Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii'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		

Discussion: It is not DHHL's policy to attempt to manage population growth. However, implementation of the Proposed Action will increase economic activities and employment opportunities on the neighbor islands consistent with community needs and desires by generating places of employment closer to the workforce who may reside in Kīhei (and commute to work in Wailuku-Kahului) and vice-versa (workforce living in Wailuku-Kahului and who commute to employment in Kīhei or Wailea). Increased opportunities for employment have the added benefit of allowing Maui residents to pursue their socio-economic aspirations.

The Proposed Action involves undertaking regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable.

HRS § 226-6: Objectives and policies for the economy in general.			
Objectives: *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 Hawaii's people.	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		
Policies:			
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.			X
(2) Expand Hawaii'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 Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			X
(4) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X

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(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			X
(6) Seek broader outlets for new or expanded Hawaii business investments.			X
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			X
(8) Assure that the basic economic needs of Hawaii'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 Hawaii'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 Hawaii.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii'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 Hawaii's workers.			X
(16) Provide equal employment opportunities for all segments of Hawaii'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 Hawaii's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawaii, 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, potential growth industries in particular.			X
(21) Foster a business climate in Hawaii--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: Implementation of the Proposed Action will increase and diversify employment opportunities on Maui towards achieving full employment, increased income and job choice, and improved living standards for Maui resident by generating places of employment closer to the workforce who may reside in Kīhei (and commute to work in Wailuku-Kahului) and vice-versa (workforce living in Wailuku-Kahului and who commute to employment in Kīhei or Wailea). Increased opportunities for employment have the added benefit of diversifying the economic base so that is not overly dependent on a few industries.			
HRS § 226-7: Objectives and policies for the economy – agriculture			
Objectives: *Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*			
(1) Viability of Hawaii's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.	X		

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(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.	X		
Policies:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.	X		
(2) Encourage agriculture by making 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 Hawaii's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii'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 Hawaii'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 Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-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		
Discussion: The primary project purpose is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL's primary intent is repurpose lands that have long been in sugar			

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cane cultivation to both income generation as well as diversified agricultural use. DHHL's plans for proposed agricultural and income generating uses are being developed with consultations with its stakeholders, native Hawaiian Beneficiaries. This EIS will provide information to the Governor and the Legislature "…with information and options needed for prudent decision making for the development of agriculture." The DHHL Project Areas are uniquely located along a route of visitors staying in Kīhei and Wailea and there are potential opportunities for both agricultural and cultural tourism.			
HRS § 226-8: Objectives and policies for the economy – visitor industry			
Objectives: *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 Hawaii's economy.*			
Policies:			
(1) Support and assist in the promotion of Hawaii'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 Hawaii's people.	X		
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii'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 Hawaii's people.	X		
(6) Provide opportunities for Hawaii'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 Hawaii'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 Hawaii's cultures and values.	X		
Discussion: Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea and be a new source of employment for Maui residents.			
HRS § 226-9: Objective and policies for the economy – federal expenditures			
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 Hawaii's economy.*			
Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment.			X
(2) Promote Hawaii's supportive role in national defense in a manner consistent with Hawaii'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 Hawaii's economy.			X

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(3) Promote the development of federally supported activities in Hawaii that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment.			X
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service.			X
(5) Promote federal use of local commodities, services, and facilities available in Hawaii.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii.			X
(7) Pursue the return of federally controlled lands in Hawaii 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
Discussion: Not applicable.			
HRS § 226-10: Objectives and policies for the economy – potential growth activities.			
Objective: *Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaii's economic base.*			
Policies:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii'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 Hawaii 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 Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people.			X
(7) Enhance and promote Hawaii'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, and underground resources and solid waste.			X
(9) Promote Hawaii'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 industries that best support Hawaii's social, economic, physical, and environmental objectives.			X

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(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 Hawaii's ability to attract and develop economic activities of benefit to Hawaii.			X
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaii.			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii'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			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: DHHL's primary intent is repurpose lands that have long been in sugar cane cultivation to both income generation as well as diversified agricultural use.			
HRS § 226-10.5: Objectives and policies for the economy – information industry			
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 Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region.*			
Policies:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaii and between Hawaii and the world, and make high speed communication available to all residents and businesses in Hawaii;			X
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth and innovation in Hawaii'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 Hawaii;			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 Hawaii, 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 Hawaii's people;			X
(7) Provide opportunities for Hawaii'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 Hawaii's economy; and			X
(9) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.			X

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Discussion: Not applicable			
HRS § 226-11: Objectives and policies for the physical environment – land-based, shoreline, and marine resources.			
Objectives: *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 Hawaii's land-based, shoreline, and marine resources.	X		
(2) Effective protection of Hawaii's unique and fragile environmental resources.			X
Policies:			
(1) Exercise an overall conservation ethic in the use of Hawaii'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 Hawaii.			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 DHHL Project Areas are lands that have been heavily utilized by the US military and for sugar cane cultivation. These lands are neither unique nor fragile or contain rare or endangered plant and animal species and habitats native to Hawaii. Moreover, the alternative of no action (leaving the lands in its mostly fallow state) would not represent prudent use of DHHL and Hawaii's land-based resources. Any potential impacts of runoff from the Proposed Action during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the DHHL Project Areas has taken into account any existing intermittent streams or areas of potential flooding, and to avoid development (including farming) in these areas.			
HRS § 226-12: Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.			
Objective: *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.*			
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		

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(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.	X		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	X		

Discussion: As of this writing DHHL will be initiating an HRS Chapter 6E consultation with the State Historic Preservation Division regarding the historical features within the DHHL Project Areas. The proposed diversified agricultural use of Pūlehunui South is consistent with the recent prior use of that property for sugar cane cultivation.

The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

HRS § 226-13: Objectives and policies for the physical environment – land, air, and water quality.			
Objectives: *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 Hawaii's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.			X
Policies:			
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.			X
(2) Promote the proper management of Hawaii's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawaii'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 Hawaii'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 Hawaii'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 Hawaii's people, their cultures and visitors.			X

Discussion: Any potential impacts of runoff from the Proposed Action during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the DHHL Project Areas has taken into account any existing intermittent streams or areas of potential flooding, and to avoid development (including farming) in these areas.

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The operation of the Proposed Action will comply with current aural and air quality public health standards. As noted in Section of 4.4.1 of this EIS, flood hazards are primarily identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, most of the DHHL Project Areas are designated Zone X, which denotes "areas of minimal flood hazard" (See Figure 4-4). There is narrow portion of Pūlehunui North along Maui Veterans Highway that is designated Zone XS (0.2 percent annual chance flood). The southwestern portion of Pūlehunui South is designated both Zone XS and Zone AE (within regulatory floodway of between 14 to 18 feet). Development in those areas in Zone XS will comply with requirements of the Federal Flood Insurance Program. Otherwise, the Proposed Action is not subject to hazards from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters. Existing (Maui Humane Society, Sandwich Isles Communications, Pulehunui Motorsports Park, Pu'unēnē Armory, Pu'unēnē Heavy Industrial Subdivision) and proposed uses (DLNR Industrial and Business Park, DOFAW Baseyard, MRPSC) surrounding Pūlehunui North represent a growing employment generation center. The primary purpose of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui. DHHL's primary intent is repurpose lands that have long been in sugar cane cultivation to both income generation as well as diversified agricultural use.			
HRS § 226-14: Objective and policies for facility systems – in general			
Objective: *Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.*			
Policies:			
(1) Accommodate the needs of Hawaii'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
Discussion: The primary purpose of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui. DHHL's primary intent is repurpose lands that have long been in sugar cane cultivation to both income generation as well as diversified agricultural use.			
HRS § 226-15: Objectives and policies for facility systems – solid and liquid wastes.			
Objectives: *Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:*			

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(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		
Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		
(2) Promote re-use 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
Discussion: The primary purpose of the Proposed Action is to undertake regional infrastructure master planning (including wastewater treatment and disposal with the goal of producing R-1 recycled water) on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui.			
HRS § 226-16: Objectives and policies for facility systems – water.			
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.*			
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		
Discussion: The primary purpose of the Proposed Action is to undertake regional infrastructure master planning (including wastewater treatment and disposal with the goal of producing R-1 recycled water) on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui.			
HRS § 226-17: Objectives and policies for facility systems – transportation.			
Objective: *Planning for the State's facility systems with regard to transportation shall be directed toward 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

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
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 Hawaii'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
Discussion: While these objectives and policies would be better addressed by the State Department of Transportation, DHHL would be supportive of accommodations for bus stops for the County's public transportation system (Maui Bus).			
HRS § 226-18: Objectives and policies for facility systems – energy.			
Objectives: *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 Hawaii's dependence on imported fuels for electrical generation and ground transportation;	X		
(3) Greater diversification of energy generation in the face of threats to Hawaii'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 Hawaii's utility customers a priority.	X		

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies: *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. To further achieve the energy objectives, it shall be the policy of this State to:*			
(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;	X		
(B) Education; and	X		
(C) Adoption of energy-efficient practices and technologies;	X		
(D) Increasing energy efficiency and decreasing energy use in public infrastructure;	X		
(5) Ensure to the extent that new supply-side resources are needed, the development or expansion of energy systems utilizes 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 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 Hawaii'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 Hawaii.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.hawaii.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf) that is consistent with HRS § 226-18.			
HRS § 226-18.5: Objectives and policies for facility systems—telecommunications.			
Objective: *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.*			
Policies: *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. To further achieve the telecommunications objective, it shall be the policy of this State to:*			
(1) Facilitate research and development of telecommunications systems and resources;	X		

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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
Discussion: As an agency serving native Hawaiians, DHHL took early steps to ensure that its Beneficiaries had equal access to the internet and other telecommunications by partnering with Sandwich Isles Communications (SIC). SIC was granted an exclusive license in 1995 to provide telecommunications services on more than 200,000 acres of Hawaiian homelands, and spent years building a fiber network to serve businesses and homes on Hawaiian homelands. DHHL has issued a license to SIC for the use of one acre at the north end of Pūlehunui North, near the Humane Society. The SIC uses the land for the operation of a transmitting tower that serves DHHL's Upcountry and Kahikinui communities. It is anticipated that SIC would retain its license and use at Pūlehunui North.			
HRS § 226-19: Objectives and policies for socio-cultural advancement – housing.			
Objectives: *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 Hawaii'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 affordable housing is made available to very low-, low- and moderate-income segments of Hawaii'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 Hawaii's people.			X
Policies:			
(1) Effectively accommodate the housing needs of Hawaii'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 Hawaii 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 Hawaii.			X

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: It is DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities." Moreover, in the case of Pūlehunui South, it is DHHL goal to facilitate diversified agriculture, while providing some opportunities for Homestead leases.			
HRS § 226-20: Objectives and policies for socio-cultural advancement – health			
Objectives: *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 Hawaii's communities.	X		
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
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		
Discussion: While most of the above objectives and policies are not applicable to the Proposed Action, perhaps indirectly, the diversified agricultural (particularly fresh food) components of Pūlehunui South, would have a positive impact on both native Hawaiian and other populations' health. In addition, DHHL contracts with the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) to provide educational and technical assistance programs to Hawaiian Home Lands agricultural and pastoral homestead lessees, including ag diagnostic services, disease control and pesticide use. Refer to https://www.ctahr.hawaii.edu/site/ExtHHL.aspx. During the construction phase, contractors will apply any pesticides only during dry periods or low rainfall to minimize chemical runoff. Pesticides will be applied only by certified applicators.			
HRS § 226-21: Objectives and policies for socio-cultural advancement – education.			

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Objectives: *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.*			
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 Hawaii's cultural heritage.	X		
(5) Provide higher educational opportunities that enable Hawaii'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 Hawaii's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea.			
HRS § 226-22: Objective and policies for socio-cultural advancement – social services			
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*.			
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 Hawaii's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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
Discussion: The HALE Program, established in 2014 by DHHL aids Beneficiaries with financial literacy services. HALE supports the department's primary mission of placing Beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawai'i. Currently HALE offers two types of services for Beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support Beneficiaries in times of need. DHHL acknowledges that Beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			
HRS § 226-23: Objectives and policies for socio-cultural advancement – leisure.			
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.*			
Policies:			
(1) Foster and preserve Hawaii'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 Hawaii'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 Hawaii'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 Hawaii's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Discussion: Not applicable.			
HRS § 226-24: Objective and policies for socio-cultural advancement – individual rights and personal well-being.			
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.*			

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
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
Discussion: Not directly applicable, although the regional infrastructure planning component of the Proposed Action, would benefit the construction of MRPSC.			
HRS § 226-25: Objectives and policies for socio-cultural advancement – culture.			
Objective: *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 Hawaii's people.*			
Policies:			
(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.	X		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii'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 Hawaii.			X
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.	X		
Discussion: Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea.			
HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.			
Objectives: *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 Hawaii's people.			X

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies related to public safety:			
(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
Policies related to criminal justice:			
(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
Policies related to emergency management:			
(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
Discussion: Not directly applicable, although the regional infrastructure planning component of the Proposed Action, would benefit the construction of MRPSC.			
HRS § 226-27: Objectives and policies for socio-cultural advancement – government.			
Objectives: *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		
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 Hawaii.			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 primary purpose of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. Through this EIS and through public meetings, DHHL has sought input on the Proposed Action from its Beneficiaries, as well as the general public.			

PART III. PRIORITY GUIDELINES

The purpose of this part of the Hawai'i State Plan is to establish overall priority guidelines to address areas of statewide concern. The Hawai'i State Plan notes that 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 five major areas of statewide concern which merit priority attention: 1) economic development; 2) population growth and land resource management; 3) affordable housing; 4) crime and criminal justice; and 5) quality education (§226-102). The priority guidelines applicable to Pūlehunui are discussed below:

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
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 Hawaii's present and future present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, and quality education.*			
HRS § 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii'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 Hawaii residents.			X
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			X
(i) Present or former residents acting as entrepreneurs or principals;			X
(ii) Academic support from an institution of higher education in Hawaii;			X
(iii) Investment interest from Hawaii residents;			X
(iv) Resources unique to Hawaii 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			X

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
scientific evidence indicates that public health, safety, and welfare would not be adversely affected.			
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii 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 Hawaii's unique location and available physical and human resources.			X
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			X
(C) An industry that is willing to hire and train Hawaii'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 Hawaii business.			X
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii'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 Hawaii'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 Hawaii'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 Hawaii's significant natural, scenic, historic, and cultural resources.	X		
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			X

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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 Hawaii.			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 Hawaii's agricultural community.			X
(6) Seek favorable freight rates for Hawaii'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 Hawaii'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

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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 Hawaii.	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 and peripherals, 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 Hawaii'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: ***Commercial/Industrial Uses –*** Commercial/light industrial use is anticipated to occupy up to 135 acres at Pūlehunui North (including 40 acres for a possible cultural center/visitor attraction), plus five acres for a possible hotel at the discretion of a future developer), and approximately 115 acres at Pūlehunui South. Commercial/industrial use provides for the most flexible use of the DHHL Project Areas and could support retail, agribusiness processing, packaging, and/or marketing of agricultural goods produced at Pūlehunui South and throughout Central Maui. Light industrial-zoned lots on other Maui properties accommodate retail uses. Large, contiguous commercial lots within Pūlehunui North would be suitable for a more comprehensive commercial or retail complex and/or a visitor attraction destination, cultural center, business hotel or other large visitor industry-based use. In addition to revenue generation to support DHHL activities, DHHL proposes to provide commercial/light industrial use areas in Pūlehunui South devoted to use by smaller businesses including those of DHHL Beneficiaries, to support Beneficiary economic development initiatives. Activities in this area will build capacity in the small business community by providing a space for individual businesses or Beneficiary individuals or organizations to produce and sell products and services in a highly-visible and central location off Maui Veterans Highway.

Open Space and Agricultural Uses - Between roughly 30 and 40 acres of open space have been assumed in the development plan to meet drainage needs at Pūlehunui North. The majority of Pūlehunui South will be used for agriculture, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility.

The primary purpose of the Proposed Action is to undertake regional infrastructure (including potable, non-potable and recycled water) master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. To ensure the wise use of limited resources, both water and energy conservation practices will be implemented. As an agency serving native Hawaiians, DHHL took early steps to ensure that its Beneficiaries had equal access to the internet and other telecommunications by partnering with Sandwich Isles Communications (SIC). SIC was granted an exclusive license in 1995 to provide telecommunications services on more than 200,000 acres of Hawaiian homelands, and spent years building a fiber network to serve businesses and homes on Hawaiian homelands. DHHL has issued a license to SIC for the use of one acre at the north end of Pūlehunui North, near the Humane Society.			
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 insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.			X
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii'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

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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 Hawaii 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 Hawaii'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 Hawaii's shoreline, open spaces, and scenic resources.			X
Discussion: The Proposed Action will facilitate employment opportunities between Wailuku-Kahului and Kīhei. While the Proposed Action involves the intensification of land uses on Pūlehunui North or South, neither property is designated: IAL, a critical environmental area, shoreline, conservation lands or other limited resource area.			
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
Discussion: Not directly applicable, although the regional infrastructure planning component of the Proposed Action, would benefit the construction of MRPSC.			
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

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii'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 Hawaii'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 Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.			X
Discussion: Not applicable.			
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 work force;			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:			
• *The electronic exchange of information;*			X
• *Statewide electronic mail; and*			X
• *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 Hawaii'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: Not applicable.			
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		

Hawai'i STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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 Hawaii.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.hawaii.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf) that is consistent with HRS § 226-108.			

6.2.5 *State Functional Plans*

The Hawai'i State Plan directs State agencies to prepare functional plans for their respective program areas. There are 14 state functional plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the Hawai'i State Plan. The functional plans applicable to Pūlehunui, along with each plan's applicable objectives, policies, and actions, are discussed below.

Table 6-3: State Functional Plans

Hawaii State Functional Plans		S	N/S	N/A
AGRICULTURE FUNCTIONAL PLAN				
Objective A:	Achievement of increased agricultural production and growth through cultural and management practices.	X		
Objective B:	Achievement of an orderly agricultural marketing system through product promotion and industry organization.			X
Objective C:	Achievement of increased consumption of and demand for Hawaii's agricultural products through consumer education and product quality.			X
Objective D:	Achievement of optimal contribution by agriculture to the State's economy.	X		
Objective E:	Achievement of adequate capital, and knowledge of its proper management, for agricultural development.			X
Objective F:	Achievement of increased agricultural production and growth through pest and disease controls.	X		
Objective G:	Achievement of effective protection and improved quality of Hawaii's land, water, and air.			X
Objective H:	Achievement of productive agricultural use of lands most suitable and needed for agriculture.	X		
Objective I:	Achievement of efficient and equitable provision of adequate water for agricultural use.	X		
Objective J:	Achievement of maximum degree of public understanding and support of agriculture in Hawaii.			X
Objective K:	Achievement of adequate supply of properly trained labor for agricultural needs.			X
Objective L:	Achievement of adequate transportation services and facilities to meet agricultural needs.			X
Objective M:	Achievement of adequate support services and infrastructure to meet agricultural needs.	X		
Discussion: The primary objective of the Proposed Action is to undertake regional infrastructure master planning (including potable, irrigation and recycled water) on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. For DHHL's Pūlehunui South property, it is DHHL goal to facilitate diversified agriculture, while providing some opportunities for Homestead leases. DHHL contracts with the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) to provide educational and technical assistance programs to Hawaiian Home Lands agricultural and pastoral				

Hawaii State Functional Plans		S	N/S	N/A
homestead lessees, including ag diagnostic services, disease control and pesticide use. Refer to https://www.ctahr.hawaii.edu/site/ExtHHL.aspx				
CONSERVATION LANDS FUNCTIONAL PLAN				
Objective IA:	Establishment of data bases for inventories of existing lands and resources.			X
Objective IB:	Establishment of criteria for management of land and natural resources.			X
Objective IIA:	Establishment of plans for natural resources and land management.			X
Objective IIB:	Protection of fragile or rare natural resources.			X
Objective IIC:	Enhancement of natural resources.			X
Objective IID:	Appropriate development of natural resources.			X
Objective IIE:	Promotion and marketing of appropriate natural resources designated for commercial development.			X
Objective IIF:	Increase enforcement of land and natural resource use laws and regulations.			X
Objective IIIA:	Develop and implement conservation education programs for the general public and visitors.			X
Objective IIIB:	Increase access to land and natural resource data by the public and increase cooperation between agencies by making access to land and natural resource information more efficient.			X
Discussion: Not applicable. The DHHL Project Areas do not involve Conservation lands.				
EDUCATION FUNCTIONAL PLAN				
Objective A(1):	**Academic Excellence.** Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X
Objective A(2):	**Basic Skills.** Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning. Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.			X
Objective A(3):	**Education Workforce.** Initiate efforts to improve the quality of education by improving the capabilities of the education workforce.			X
Objective A(4):	**Services and Facilities.** Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X
Objective B(1):	**Alternatives for Funding and Delivery.** Explore alternatives for funding and delivery of educational services to improve the overall quality of education.			X
Objective B(2):	**Autonomy and flexibility.** Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.			X
Objective B(3):	**Increased Use of Technology.** Increase and improve the use information technology in education and encourage programs which increase the public's awareness and understanding of the impact of information technologies on our lives.			X
Objective B(4):	**Personal Development.** Support education programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X

Hawaii State Functional Plans		S	N/S	N/A
Objective B(5):	**Students with Special Needs.** Provide appropriate educational opportunities for groups with special needs.			X
Objective C(1):	**Early Childhood Education.** Develop resources and programs for early childhood education.			X
Objective C(2):	**Hawaii's Cultural Heritage.** Promote educational programs which enhance understanding of Hawaii's cultural heritage.	X		
Objective C(3):	**Research Programs and [Communication] Activities.** Support research programs and activities that enhance the education programs of the State.			X
Discussion: Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space.				
EMPLOYMENT FUNCTIONAL PLAN				
Objective A:	Improve the qualifications of entry-level workers and their transition to employment.			X
Objective B:	Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce.			X
Objective C:	Improve labor exchange.			X
Objective D:	Improve the quality of life for workers and families.			X
Objective E:	Improve planning of economic development, employment and training activities			X
Discussion: Not applicable.				
ENERGY FUNCTIONAL PLAN				
Objective A:	Moderate the growth in energy demand through conservation and energy efficiency.	X		
Objective B:	Displace oil and fossil fuels through alternate and renewable energy resources.	X		
Objective C:	Promote energy education and legislation.			X
Objective D:	Support and develop an integrated approach to energy development and management.	X		
Objective E:	Ensure State's abilities to implement energy emergency actions immediately in event of fuel supply disruptions. Ensure essential public services are maintained and provisions are made to alleviate economic and personal hardships which may arise.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.hawaii.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf).				
HEALTH FUNCTIONAL PLAN				
Objective 1:	Health promotion and disease prevention. Reduction in the incidence, morbidity and mortality associated with preventable and controllable conditions.			X
Objective 2:	Prevention and control of communicable diseases. Reduction in the incidence, morbidity, and mortality associated with infectious and communicable diseases.			X

Hawaii State Functional Plans		S	N/S	N/A
Objective 3:	Health needs of special populations with impaired access to health care. Increased availability and accessibility of health services for groups with impaired access to health care programs.			X
Objective 4:	Community hospitals system. Development of a community hospital system which is innovative, responsive and supplies high quality care to the constituencies it serves.			X
Objective 5:	Environmental programs to protect and enhance the environment. Continued development of new environmental protection and health services programs to protect, monitor, and enhance the quality of life in Hawaii.			X
Objective 6:	DOH leadership. To improve the Department of Health's ability to meet the public health need of the State of Hawaii in the most appropriate, beneficial and economical way possible.			X
Discussion: Not applicable.				
HIGHER EDUCATION FUNCTIONAL PLAN				
Objective A:	A number and variety of postsecondary education institutions sufficient to provide the diverse range of programs required to satisfy individual and societal needs and interests.			X
Objective B:	The highest level of quality, commensurate with its mission and objectives, of each educational, research, and public service program offered in Hawaii by an institution of higher education.			X
Objective C:	Provide appropriate educational opportunities for all who are willing and able to benefit from postsecondary education.			X
Objective D:	Provide financing for postsecondary education programs sufficient to ensure adequate diversity, high quality, and wide accessibility.			X
Objective E:	Increase program effectiveness and efficiency through better coordination of educational resources.			X
Discussion: Not applicable.				
HISTORIC PRESERVATION FUNCTIONAL PLAN				
Objective A:	Identification of historic properties.	X		
Objective B:	Protection of historic properties.	X		
Objective C:	Management and treatment of historic properties.	X		
Objective D:	Provision of adequate facilities to preserve historic resources.			X
Objective E:	The establishment of programs to collect and conserve historic records, artifacts, and oral histories and to document and perpetuate traditional arts, skills, and culture.			X
Objective F:	Provision of better access to historic information.	X		
Objective G:	Enhancement of skills and knowledge needed to preserve historical resources.			X
Discussion: As of this writing DHHL will be initiating an HRS Chapter 6E consultation with the State Historic Preservation Division regarding the historical features within the DHHL Project Areas.				
HOUSING FUNCTIONAL PLAN				
Objective A:	Increase and sustain the supply of permanent rental housing that is affordable and accessible to Hawaii residents, particularly those with incomes at or below 80% AMI. Attain the legislative goal of 22,500 rental housing units by 2026.			X

Hawaii State Functional Plans		S	N/S	N/A
Objective B:	Increase the homeownership rate.	X		
Objective C:	Address barriers to residential development			X
Objective D:	Maintain a statewide housing data system for use by public and private agencies engaged in the provision of housing.			X
Discussion: The HALE Program, established in 2014 by DHHL aids Beneficiaries with financial literacy services. HALE supports the department's primary mission of placing Beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawai'i.				
HUMAN SERVICES FUNCTIONAL PLAN				
Objective A:	To sustain and improve current elder abuse and neglect services.			X
Objective B:	To increase cost-effective, high quality home and community based services.			X
Objective C:	To increase home-based services to keep children in their homes and to increase placement resources for those children who must be temporarily or permanently removed from their homes, due to abuse or neglect.			X
Objective D:	To address factors that contribute to child abuse and other forms of family violence.			X
Objective E:	To provide affordable, accessible, and quality child care.			X
Objective G:	To provide AFDC recipients with a viable opportunity to become independent of the welfare system.			X
Objective H:	To facilitate client access to human services.			X
Objective I:	To eliminate organizational barriers which limit client access to human services.			X
Discussion: Not applicable.				
RECREATION FUNCTIONAL PLAN				
Objective I.A:	Address the problem of saturation of the capacity of beach parks and nearshore waters.			X
Objective I.B:	Reduce the incidence of ocean recreation accidents.			X
Objective I.C:	Resolve conflicts between different activities at heavily used ocean recreation areas.			X
Objective I.D:	Provide adequate boating facilities. Balance the demand for boating facilities against the need to protect the marine environment from potential adverse impacts.			X
Objective II.A:	Plan, develop, and promote recreational activities and facilities in mauka and other areas to provide a wide range of alternatives.			X
Objective II.B:	Meet special recreation needs of the elderly, the disabled, woman, single-parent families, immigrants, and other groups.			X
Objective II.C:	Improve and expand the provision of recreation facilities in urban areas and local communities.			X
Objective III.A:	Prevent the loss of access to shoreline and upland recreation areas due to new developments.			X
Objective III.B:	Resolve the problem of landowner liability that seriously hampers public access over private lands.			X
Objective III.C:	Increase access to State Forest Reserve lands over federal property, leased State lands, and other government lands.			X
Objective III.D:	Acquire, develop, and manage additional public accessways.			X
Objective IV.A:	Promote a conservation ethic in the use of Hawaii's recreational resources.			X

Hawaii State Functional Plans		S	N/S	N/A
Objective IV.B:	Prevent degradation of the marine environment.			X
Objective IV.C:	Improve the State's enforcement capabilities.			X
Objective IV.D:	Mitigate adverse impacts of tour helicopters on the quality of recreational experiences in wilderness areas.			X
Objective V.A:	Properly maintain existing parks and recreation areas.			X
Objective V.B:	Promote interagency coordination and cooperation to facilitate sharing of resources, joint development efforts, clarification of responsibilities and jurisdictions, and improvements in enforcement capabilities.			X
Objective V.C:	Assure adequate support for priority outdoor recreation programs and facilities.			X
Objective VI.A:	Increase recreational access and opportunities in Hawaii's wetlands.			X
Objective VI.B:	Develop an adequate information base to assist the County planning departments and other regulatory agencies in make decisions regarding wetlands.			X
Objective VI.C:	Assure the protection of the most valuable wetlands in the state.			X
Discussion: Not applicable the Proposed Action does not involve ocean recreation areas, upland recreation areas (or access to those areas), parks or wetlands.				
TOURISM FUNCTIONAL PLAN				
Objective I.A:	Development, implementation and maintenance of policies and actions which support the steady and balanced growth of the visitor industry.			X
Objective II.A:	Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities, and adequately serviced by infrastructure and support services.	X		
Objective III.A:	Enhancement of respect and regard for the fragile resources which comprise Hawaii's natural and cultural environment. Increased preservation and maintenance efforts.			X
Objective IV.A:	Support of Hawaii's diverse range of lifestyles and natural environment.			X
Objective IV.B:	Achievement of mutual appreciation among residents, visitors, and the visitor industry.			X
Objective V.A:	Development of a productive workforce to maintain a high quality visitor industry.			X
Objective V.B:	Enhancement of career and employment opportunities in the visitor industry.			X
Objective VI.A:	Maintenance of a high customer awareness of Hawaii as a visitor destination in specific desired market segments.			X
Discussion: Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea and be a new source of employment for Maui residents.				
TRANSPORTATION FUNCTIONAL PLAN				
Objective I.A:	Expansion of the transportation system.			X
Objective I.B:	Reduction of travel demand through zoning and decentralization initiatives.			X

Hawaii State Functional Plans		S	N/S	N/A
Objective I.C:	Management of existing transportation systems through a program of transportation systems management (TSM).			X
Objective I.D:	Identification and reservation of lands and rights-of-way required for future transportation improvements.			X
Objective I.E:	Planning and designing State highways to enhance inter-regional mobility.			X
Objective I.F:	Improving and enhancing transportation safety.			X
Objective I.G:	Improved transportation maintenance programs.			X
Objective I.H:	Ensure that transportation facilities are accessible to people with disabilities.			X
Objective II.A:	Development of a transportation infrastructure that supports economic development initiatives.			X
Objective III.B:	Expansion of revenue bases for transportation improvements.			X
Objective IV.A:	Providing educational programs.			X
Discussion: Not applicable as these objectives may be better directed to the State Department of Transportation. However, coordination is occurring with the State Department of Transportation and the County of Maui Department of Transportation.				
WATER RESOURCES DEVELOPMENT FUNCTIONAL PLAN				
Objective A:	Enunciate State water policy and improve management framework.			X
Objective B:	Maintain the long-term availability of freshwater supplies, giving consideration to the accommodation of important environmental values.			X
Objective C:	Improve management of floodplains.			X
Objective D:	Assure adequate municipal water supplies for planned urban growth.			X
Objective E:	Assure the availability of adequate water for agriculture.			X
Objective F:	Encourage and coordinate with other water programs the development of self-supplied industrial water and the production of water-based energy.			
Objective G:	Provide for the protection and enhancement of Hawaii's freshwater and estuarine environment.			X
Objective H:	Improve State grant and loan procedures for water program and projects.			X
Objective I:	Pursue water resources data collection and research to meet changing needs.			X
Discussion: Not applicable as these objectives may be better directed to the State Department of Land and Natural Resources (Commission of Water Resources Management, Engineering Division) and County of Maui Departments of Water Supply and Public Works).				

6.2.6 *Hawaii State Environmental Policy and Guidelines, Chapter 344-3 and 344-4, HRS*

The State Environmental Policy provides guidelines for agencies to 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 Hawaii. The environmental Guidelines (§344-4, HRS) suggest that insofar as practical, in the development of programs consider: population; land, water, mineral, visual, air, and other natural resources; flora and fauna; parks, recreation, and open space; economic development; transportation; energy; community life and housing; education and culture; and, citizen participation.

Table 6-4. Hawaii State Environmental Policy and Guidelines, Chapter 344-3 and 344-4, HRS

State Environmental Policy, Chapter 344, Hawaii Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
STATE ENVIRONMENTAL POLICY			
§344-3 Environmental policy. It shall be the policy of the State, through its programs, authorities, and resources to:			
(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 Hawaii.	X		
(2) Enhance the quality of life by:			
(A) Setting population limits so that the interaction between the natural and artificial environments and the population is mutually beneficial;			X
(B) Creating opportunities for the residents of Hawaii to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;	X		
(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; and	X		
(D) Establishing a commitment on the part of each person to protect and enhance Hawaii's environment and reduce the drain on nonrenewable resources.			X
Discussion: The DHHL Project Areas are lands that have been heavily utilized by the US military and for sugar cane cultivation. These lands are neither unique nor fragile or contain rare or endangered plant and animal species and habitats native to Hawai'i. Moreover, the alternative of no action (leaving the lands in its mostly fallow state) would not represent prudent use of DHHL and Hawai'i's land-based resources. Any potential impacts of runoff from the Proposed Action during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the DHHL Project Areas has taken into account any existing intermittent streams or areas of potential flooding, and to avoid development (including farming) in these areas.			

State Environmental Policy, Chapter 344, Hawaii Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
GUIDELINES			
§344-4 Guidelines. In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines:			
(1) Population.			
(A) Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation;			X
(B) Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.			X
Discussion: Not applicable.			
(2) Land, water, mineral, visual, air, and other natural resources.			
(A) Encourage management practices which conserve and fully utilize all natural resources;	X		
(B) Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;	X		
(C) Promote the recycling of waste water;	X		
(D) Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas;			X
(E) Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves;			X
(F) Maintain an integrated system of state land use planning which coordinates the state and county general plans;			X
(G) Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.	X		

Discussion: The Proposed Action will be designed to efficiently utilize all natural resources such as water and soil. Regional infrastructure planning for water source development, storage and delivery will include potable, non-potable and recycled water (from treated effluent) sources.

During construction, a job-site recycling plan will be developed and, as much as possible, construction and demolition waste will be recycled. Separate containers will be provided for separate types of construction waste, which will be separated from municipal solid waste. Maui Scrap Metal accepts cardboard and metal for recycling. Maui Earth Compost & Soil Mixes accepts drywall. Maui Eko Systems, Inc., and Campaign Recycle Maui accept clean, untreated lumber. Remaining types of wastes may be recycled if a local recycling vendor is available. Otherwise, non-recyclable construction wastes will be disposed in the construction and demolition landfill near Mā‘alaea.

After construction, DHHL will implement strategies from the County’s Integrated Solid Waste Management Plan (2009) for diverting solid waste from landfills by providing options for recycling. The goal for waste management is to appropriately reduce, reuse and recycle materials, to minimize generation of solid waste and achieve diversion from landfills. As such, in conformance with Chapter 344-4(2), HRS, Pūlehunui will promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling.

State Environmental Policy, Chapter 344, Hawaii Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(3) Flora and fauna.			
(A) Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard;			X
(B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.	X		
Discussion: Based on biological surveys conducted for the DHHL Project Areas, no significant impacts on biological resources are expected. Where feasible, any new landscaping for Pūlehunui North will include planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.			
(4) Parks, recreation, and open space.			
(A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;			X
(B) Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities;			X
(C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.	X		
Discussion: The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.			
(5) Economic development.			
(A) Encourage industries in Hawaii which would be in harmony with our environment;			X
(B) Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands;	X		
(C) Encourage federal activities in Hawaii to protect the environment;			X
(D) Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment;			X
(E) Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms;			X
(F) Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands.			X
Discussion: DHHL's primary intent is repurpose lands that have long been in sugar cane cultivation to both income generation as well as diversified agricultural use. DHHL's plans for proposed agricultural and income generating uses are being developed with consultations with its stakeholders, native Hawaiian Beneficiaries.			
(6) Transportation.			
(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State;			X

State Environmental Policy, Chapter 344, Hawaii Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(B) Adopt guidelines to alleviate environmental degradation caused by motor vehicles;			X
(C) Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.			X
Discussion: Not applicable as these objectives may be better directed to the State Department of Transportation. However, coordination is occurring with the State Department of Transportation and the County of Maui Department of Transportation.			
(7) Energy.			
(A) Encourage the efficient use of energy resources.	X		
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.hawaii.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf).			
(8) Community life and housing.			
(A) Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods which reflect the culture and mores of the community;			X
(B) Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation;	X		
(C) Encourage the reduction of environmental pollution which may degrade a community;	X		
(D) Foster safe, sanitary, and decent homes;			X
(E) Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.	X		
Discussion: Implementation of the Proposed Action will contribute to a strong, viable economy on Maui, by not only generating places of employment closer to the workforce who may reside in Kīhei (and commute to work in Wailuku-Kahului) and vice-versa, but also generate income for DHHL programs and projects. Additionally, the plan for agriculture in Pūlehunui South addresses some DHHL Beneficiaries' expressed interests in farming, community responsibility, of caring and of participation in community life. Any potential impacts of runoff from the Proposed Action during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the DHHL Project Areas has taken into account any existing intermittent streams or areas of potential flooding, and to avoid development (including farming) in these areas. The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.			

State Environmental Policy, Chapter 344, Hawaii Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(9) Education and culture.			
(A) Foster culture and the arts and promote their linkage to the enhancement of the environment;	X		
(B) Encourage both formal and informal environmental education to all age groups.	X		
Discussion: Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space.			
(10) Citizen participation.			
(A) Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and			X
(B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.	X		
Discussion: Through this EIS and through public meetings, DHHL has sought input on the Proposed Action from its Beneficiaries, as well as the general public.			

6.3 COUNTY OF MAUI

County-specific land use plans and ordinances pertaining to Pūlehunui include the *Countywide Policy Plan, Draft Maui Island Plan,* and the *Kīhei-Mākena Community Plan*.

6.3.1 *Countywide Policy Plan*

The *Countywide Policy Plan* was adopted in March 2010 and is a comprehensive policy document for the islands of Maui County to the year 2030. The plan replaces the *General Plan of the County of Maui 1990 Update* and provides the policy framework for the development of the *Maui Island Plan* as well as for updating the nine detailed Community Plans.

The *Countywide Policy Plan* provides broad goals, objectives, policies and implementing actions that portray the desired direction of the County's future. Goals are intended to describe a desirable condition of the County by the year 2030 and are intentionally general. Objectives tend to be more specific and may be regarded as milestones to achieve the larger goals. Policies are not intended as regulations, but instead provide a general guideline for County decision makers, departments, and collaborating organizations toward the attainment of goals and objectives. Implementing actions are specific tasks, procedures, programs, or techniques that carry out policy.

Discussion of how the Proposed Action conforms to the relevant goals of the *Countywide Policy Plan* is provided below.

A. PROTECT THE NATURAL ENVIRONMENT

Goal: *Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.*

Discussion: The DHHL Project Areas are lands that have been heavily utilized by the US military and for sugar cane cultivation. These lands are neither unique nor fragile or contain rare or endangered plant and animal species and habitats native to Hawaii. Moreover, the alternative of no action (leaving the lands in its mostly fallow state) would not represent prudent use of DHHL and Hawai'i's land-based resources.

The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

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.*

Discussion: DHHL's primary intent is repurpose lands that have long been in sugar cane cultivation to both income generation as well as diversified agricultural use. DHHL's plans for proposed agricultural and income generating uses are being developed with consultations with its stakeholders, native Hawaiian Beneficiaries.

Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. Besides the opportunities for agricultural and cultural tourism in Pūlehunui South, one potential income generating use being contemplated in Pūlehunui North is a cultural center, such as the Polynesian Cultural Center or the Paradise Cove. Such a use would attract visitors staying in Kīhei and Wailea.

C. IMPROVE EDUCATION

Goal: *Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.*

Discussion: Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing Maui Island Plan designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space.

E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS

Goal: *Quality, island-appropriate housing will be available to all residents.*

Discussion: The HALE Program, established in 2014 by DHHL aids Beneficiaries with financial literacy services. HALE supports the department's primary mission of placing Beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawai'i. Currently HALE offers two types of services for Beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support Beneficiaries in times of need. DHHL acknowledges that Beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.

F. STRENGTHEN THE LOCAL ECONOMY

Goal: *Maui County's economy will be diverse, sustainable, and supportive of community values.*

Discussion: Implementation of the Proposed Action will contribute to a strong, viable economy on Maui, by not only generating places of employment closer to the workforce who may reside in Kīhei (and commute to work in Wailuku-Kahului), but also generate income for DHHL programs and projects. Additionally, the plan for agriculture in Pūlehunui South addresses some DHHL Beneficiaries' expressed interests in farming, community responsibility, of caring and of participation in community life.

G. IMPROVE PARKS AND PUBLIC FACILITIES

Goal: *A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.*

Discussion: During the EISPN Public Review period, the Maui County Department of Parks and Recreation wrote:

> Because this project is intended as a Regional Infrastructure Plan, the DPR recommends that the needs of the motorsports park's users and facilities are considered as part of the project study area. Although the county does not currently have a funding source to

develop the park's infrastructure; it would, nonetheless, be prudent and reasonable to integrate it into the calculation of infrastructure needs.

At the County's request, the water and sewer demand from the Pulehunui Motorsports Park are being included in the regional infrastructure planning.

H. DIVERSIFY TRANSPORTATION OPTIONS

Goal: *Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.*

Discussion: DHHL would be supportive of accommodations for bus stops for the County's public transportation system (Maui Bus).

I. IMPROVE PHYSICAL INFRASTRUCTURE

Goal: *Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.*

Discussion: The primary objective of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable.

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.*

Discussion: The Kīhei-Mākena Community Plan is one of nine community plans developed to address the unique aspects of each region. According to the Kīhei-Mākena Community Plan Land Use Map, Pūlehunui North is designated Project District 10 and Pūlehunui South is designated Agricultural (See Figure 6-2).

The Kīhei-Mākena Community Plan was adopted in 1998 when sugar cane cultivation was still viable. The Plan designated Project District 10 for sugar cane cultivation as long as sugar was a viable option.

The Kīhei-Mākena Community Plan was adopted in 1998 when sugar cane cultivation was still viable. The Plan designated Pūlehunui North for sugar cane cultivation as long as sugar was a viable option: For Pūlehunui North, the Kīhei-Mākena Community Plan describes Project District 10:

> The remaining 189 acres, between Maui Veterans Highway and Hemahema *(sic)* Loop, are almost all in sugar cane cultivation and shall remain as such until sugar production no longer remains a viable commodity within the State. The objective of this project district is to establish a master planned recreational and industrial expansion to meet future recreational needs and to provide areas for industrial activities, including government facilities, whose locations are better suited away from urban areas. Site planning shall seek to maximize the range of potential user groups while minimizing potential for incompatibilities between recreational, governmental, and industrial activities. (County of Maui, 1998)

Pūlehunui North will contribute positively to the intent of Project District 10 by supporting land uses which are compatible with plans for the region, and by contributing to a comprehensive network of infrastructure. Since sugar cane cultivation is no longer considered a viable industry by Maui's last operating plantation, conversion of Pūlehunui North to other land uses is an appropriate option. Pūlehunui South will remain in agricultural and supporting uses with some community uses per DHHL Beneficiary feedback (Section 9.2).

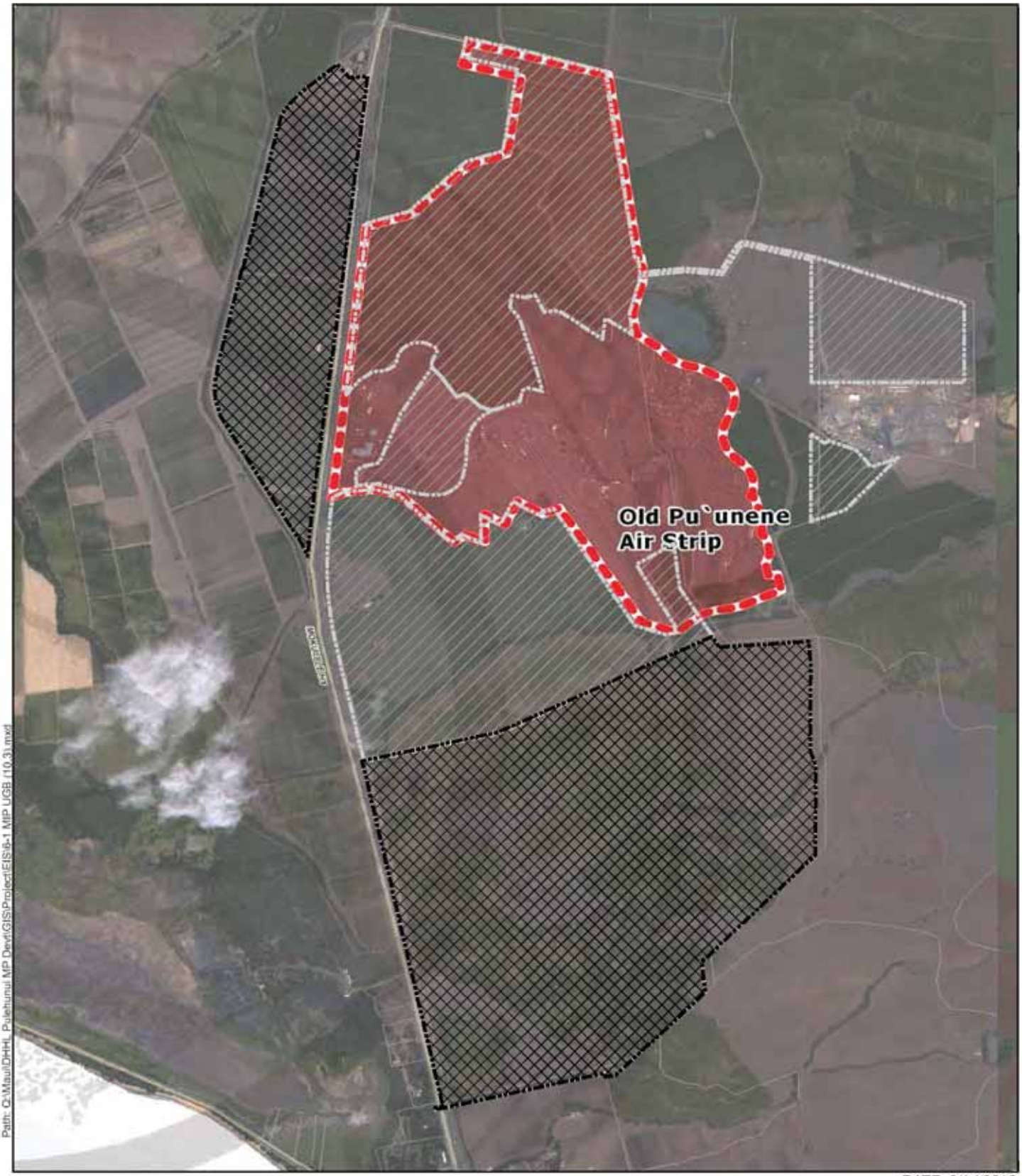
K. STRIVE FOR GOOD GOVERNANCE

Goal: *Government services will be transparent, effective, efficient, and responsive to the needs of residents.*

Discussion: The primary objective of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore, a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable.

6.3.2 *County's Maui Island Plan*

The Maui Island Plan derives its framework from Maui County's Countywide Policy Plan adopted in 2010. The Maui Island Plan establishes urban and rural growth areas in order to promote future growth while preserving natural resources and character. There are three Growth Boundary types: Urban, Small Town, and Rural.



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area
- Urban Growth Boundary (Maui Island Plan)

Figure 6-1:
Maui Island Plan

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)
0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: Urban Growth Boundary: Maui Island Plan, 2012.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

During the Draft EIS public review period, the County of Maui Planning Department wrote:

> 3. The Maui Island Plan discusses "Smart Growth" principles, locating jobs near population centers and existing infrastructure. The proposed commercial and industrial uses are in conflict with "Smart Growth" principles.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

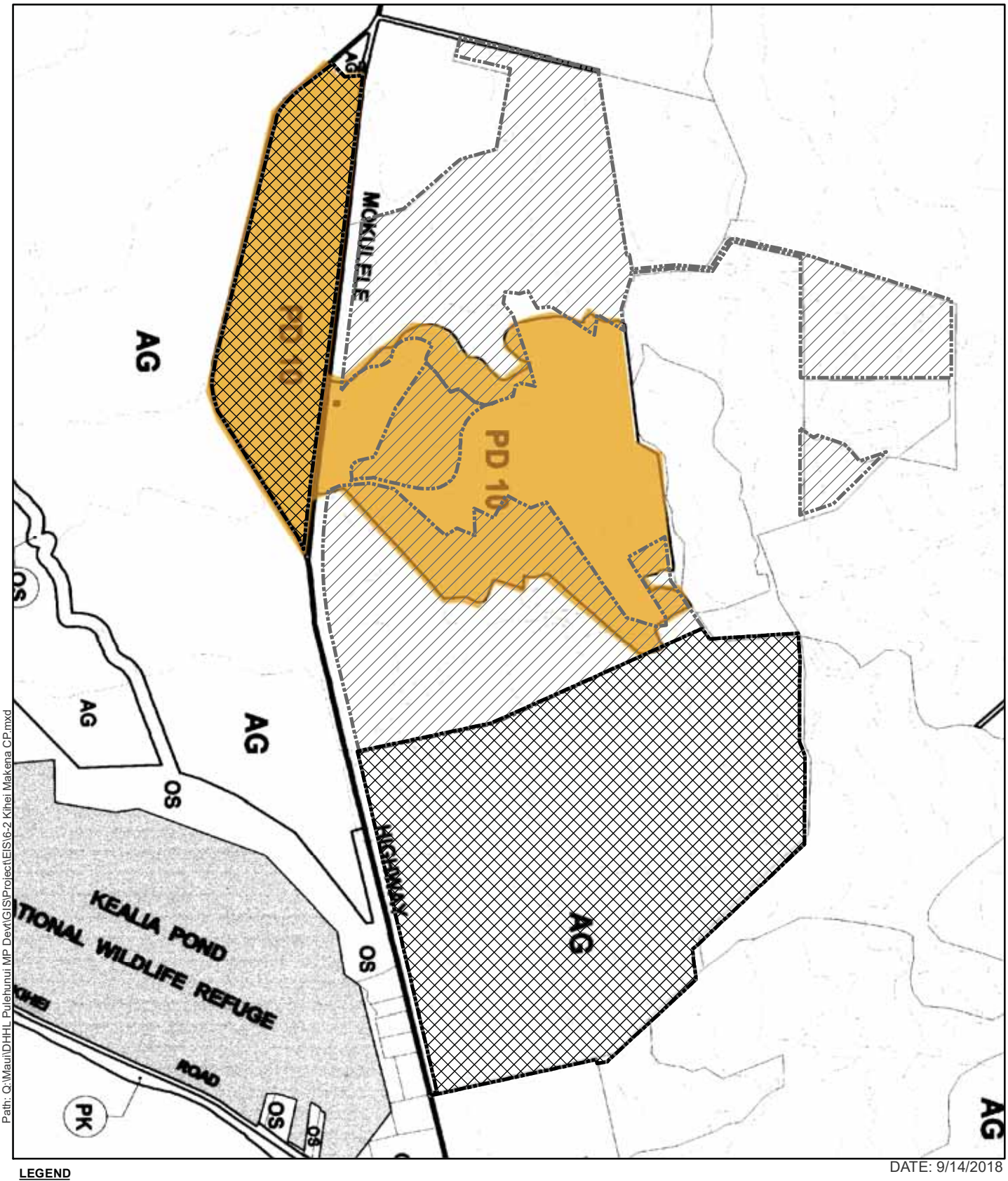
The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands, and the anticipated land uses are generally consistent with the Department's existing Maui Island Plan. The anticipated amendment to the Department's Maui Island Plan is being sought to refine the plan for agriculture and supporting uses at Pūlehunui South, based on outreach to DHHL Beneficiaries which is detailed in Section 9.2.

It should be noted that much of the Infrastructure Regional Study Area is in an area identified for Urban Growth in the County's Maui Island Plan. The DHHL Project Areas lie outside of any current growth boundary. Pūlehunui North was within the Urban Growth Boundary (UGB) for many years, until 2012, when a vote was taken to expand the UGB surrounding Pulehunui Motorsports Park to include the future DLNR Pūlehunui Industrial Park/Maui Regional Public Safety Complex (described in Section 3.3.2). In the same motion, Pūlehunui North was removed from the UGB despite designation by DHHL for industrial use, compatible surrounding land uses, and its inclusion in Project District 10 which provided for urban land uses (see Figure 6-1).

Therefore, in the context of the County's Maui Island Plan, DHHL believes our Department's anticipated land uses are prudent given future commercial/industrial uses in Pūlehunui (including State projects anticipated within the Infrastructure Regional Study Area, that are outside the purview of DHHL).

6.3.3 *Kīhei-Mākena Community Plan*

The *Kīhei-Mākena Community Plan* is one of nine community plans developed to address the unique aspects of each region. According to the Maui County Code, "The intent of a project district development is to provide for a flexible and creative planning approach rather than specific land use designations, for quality developments. The planning approach would establish a continuity in land uses and designs while providing for a comprehensive network of infrastructural facilities and systems." (Chapter 19.45, MCC) According to the *Kīhei-Mākena Community Plan* Land Use Map, Pūlehunui North is designated Project District 10 and Pūlehunui South is designated Agricultural (See Figure 6-2).



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DATE: 9/14/2018

LEGEND

- DHHL Project Areas
- Infrastructure Regional Study Area
- Kīhei-Mākena Community Plan Project District 10

Figure 6-2:
Kīhei-Mākena Community Plan

PŪLEHUNUI REGIONAL INFRASTRUCTURE MASTER PLAN

Department of Hawaiian Home Lands — Island of Maui

North

Linear Scale (feet)
0 500 1000 2000

PBR HAWAII & ASSOCIATES, INC.

Source: Kīhei-Mākena Community Plan, 1998.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

The Kīhei-Mākena Community Plan was adopted in 1998 when sugar cane cultivation was still viable. The Plan designated Pūlehunui North for sugar cane cultivation as long as sugar was a viable option: For Pūlehunui North, the Kīhei-Mākena Community Plan describes Project District 10:

> The remaining 189 acres, between Maui Veterans Highway and Hemahema *(sic)* Loop, are almost all in sugar cane cultivation and shall remain as such until sugar production no longer remains a viable commodity within the State. The objective of this project district is to establish a master planned recreational and industrial expansion to meet future recreational needs and to provide areas for industrial activities, including government facilities, whose locations are better suited away from urban areas. Site planning shall seek to maximize the range of potential user groups while minimizing potential for incompatibilities between recreational, governmental, and industrial activities. (County of Maui, 1998)

Pūlehunui North will contribute positively to the intent of Project District 10 by supporting land uses which are compatible with plans for the region, and by contributing to a comprehensive network of infrastructure. Since sugar cane cultivation is no longer considered a viable industry by Maui's last operating plantation, conversion of Pūlehunui North to other land uses is an appropriate option. Pūlehunui South will remain in agricultural and supporting uses with some community uses per DHHL Beneficiary feedback (Section 9.2).

6.3.4 *County of Maui Zoning*

The DHHL Project Areas are in the County's Agricultural District. The purpose of the agricultural district is to promote agricultural development, preserve and protect agricultural resources, and support the agricultural character and components of the County's economy and lifestyle. Permissible uses include storage, wholesale, and distribution, processing of agricultural products, farmer's markets, agriculture, and utility facilities (19.30A, MCC).

While the property is in the Agricultural District, and the proposed land uses for Pūlehunui North are industrial and/or commercial, the Hawaiian Homes Commission has ultimate land use authority over Hawaiian Home Lands per the Hawaiian Homes Commission Act, as amended.

6.3.5 *Special Management Area*

Pūlehunui is not located within the Special Management Area (SMA), but implementation of Wastewater Alternative (Kīhei WWRF), the site of either collection, treatment and/or disposal, may involve a corridor or improvements to County wastewater facilities located within the SMA.

6.4 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for ~~Pūlehunui~~ the Proposed Action is presented below.

Table 6-5. Anticipated Permits and Approvals

RESPONSIBLE AGENCY	PERMIT/APPROVAL
Governor, State of Hawai'i DHHL	Chapter 343, HRS Compliance
State Department of Health – Clean Water Branch	National Pollutant Discharge Elimination System (NPDES) Permit
State Department of Health – Disability and Communication Access Board	Review
State Department of Health – Indoor and Radiological Health Branch	Community Noise Permit (if applicable)
State Department of Health – Safe Drinking Water Branch	New Raw Water Source Capacity review
State Department of Health – Wastewater Branch	Review
State Department of Land and Natural Resources – State Historic Preservation Division	Chapter 6E, HRS Compliance
State Department of Land and Natural Resources – Commission on Water Resource Management	Surface Water Use Permit
State Department of Transportation	Permit to Perform Work within a State Right-of-Way (ROW) Use and Occupancy Agreement Permitted Access
County of Maui Department of Public Works	Grading/Subdivision/Building/Electrical Permits, plan review
County of Maui Department of Water Supply	Review
County of Maui Planning Department and/or Planning Commission	~~Special Flood Hazard~~ Flood Development Permit (if applicable)
County of Maui Wastewater Reclamation Division	Review

During the Draft EIS public review period, The County of Maui Planning Department wrote:

> 12. We note that on page 219, it says that Special Flood Hazard Development Permits may be required, if applicable. We would like to inform you that you will be required to apply for a Flood Development Permit for any parcel that is not located within Flood Zone X or XS.

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Depending on the selected infrastructure alternatives, additional permits and approvals may be needed. As noted by the County of Maui Planning Department, a Flood Development Permit will be applied for any parcel that is not located within Flood Zone X or XS.

During the Draft EIS public review period, PSD wrote:

> Missing discussion for Future Jails and/or Correctional Facilities if a County Special Use Permit (CUP) needs to be filed with the Maui County, Dept. of Planning. Please also discuss possible additional permits associated with the Land Use Commission with the State of Hawaii need to also be filed? Ref: Chapter 19.510.010 MCCC Application and Procedures; Chapter 19.510.020 MCCC, Application for Public Hearing; Chapter 19.501.070 Special Use Permit

Refer to Appendix B-2 for a copy of the comment and DHHL's response.

Since the Proposed Action does not include the planning, design and construction of the MRPSC, a listing of anticipated permits and approvals for the MRPSC has not been added to Table 6-5. The Pūlehunui Regional Infrastructure Master Plan incorporates by reference other **available** project information, **if** provided by DLNR, and DAGS/PSD for their respective proposed developments in the region. See Section 3.3.2.

The State Office of Planning wrote:

> I. The regional infrastructure study area is entirely within the State Agricultural District. At some point in the future, the study area will require a State Land Use District Boundary Amendment. OP represents the State as a mandatory party in proceedings before the Land Use Commission (LUC). In developing its position, OP evaluates whether the project meets the LUC decision-making criteria in HRS § 205-17, as well as its conformance with Coastal Zone Management (CZM) objectives and policies in HRS § 205-A-2.

Refer to Appendix B-2 for a copy of the comments and DHHL's response. The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawai'i State Constitution, vests DHHL with exclusive authority to control its lands. Non-DHHL projects within the Infrastructure Regional Study Area are pursuing the necessary permits and entitlements (including State Land Use District Boundary Amendment) independently for their respective proposed uses. A discussion of permitting and/or approvals associated with a specific project within the Infrastructure Regional Study Area should be included in environmental reporting documents specific to that project, in compliance with Chapter 343, HRS. A list of permits and approvals anticipated to be needed for the Proposed Action under this EIS is included in Table 6-5. Section 6.3.2 addresses conformance with the CZM Act, HRS Chapter 205A.

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7.0 ALTERNATIVES TO THE PROPOSED ACTION

Under HAR Title 11, DOH, Chapter 200, EIS Rules, Section 11-200-17(F), an EIS must contain a section discussing alternatives that could attain the Proposed Action's objectives, regardless of cost, in sufficient detail to explain why the specific alternative was rejected. Alternatives to the Proposed Action, along with reasons why each alternative was rejected are described below.

The primary objective of the Proposed Action is to undertake regional infrastructure master planning on behalf of DHHL, Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services on behalf of Department of Public Safety (DAGS/PSD), to facilitate the efficient development of certain lands managed by those agencies in Pūlehunui, Central Maui. DHHL anticipates that regional infrastructure improvements may be beneficial to serve regional lands managed by said agencies and those agencies' respective proposed developments. Therefore a regional approach to infrastructure planning will facilitate development at Pūlehunui in a manner that is financially and environmentally efficient, maximizing the use of State funds while minimizing environmental impacts to the extent practicable.

An additional, and as important objective is DHHL's role in serving its Beneficiaries, pursuant to the Department's mission.[12] Recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing *Maui Island Plan* designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. The land uses preferred by Beneficiaries at Pūlehunui South correspond to DHHL land use designations of Subsistence Agriculture, Community Use, Supplemental Agriculture, and Commercial Use. Following the completion of the EIS process, DHHL will pursue an amendment of its Maui Island Plan to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South. See Section 9.0 for more information regarding public engagement and consultation.

7.1 NO ACTION ALTERNATIVE

Under the No Action alternative, there would be at least two possible outcomes; firstly, regional infrastructure master planning would not occur. Each State agency (DLNR, DAGS/PSD, DHHL) would need to develop individual potable water, wastewater and traffic improvements. Since individual infrastructure improvements may be more expensive than regional improvements, this could result in an inefficient use government revenue. Secondly, DHHL's lands underlying the DHHL Project Areas would not be developed and the property would remain as vacant lands,

[1212] It is DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities."

underutilized in terms of meeting DHHL Beneficiaries' need for diversified agricultural opportunities and income generation (per the DHHL's *Maui Island Plan*).

The potential benefit of the No Action alternative is that while remaining mostly vacant, the property would provide open space. Implementation of this alternative will avoid: infrastructure impacts (solid waste, water demand, wastewater and additional stormwater runoff generated on-site); visual impacts (appearance of the property changing from its fallow condition to more intensively farmed and income-generating uses); traffic impacts; and construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and the potential for fugitive dust and soil erosion).

The No Action alternative was rejected because it is not consistent with the objectives of the proposed mixed-use development nor does it meet the objectives of DHHL's *Maui Island Plan*.

7.2 ALTERNATIVES REQUIRING ACTIONS OF A SIGNIFICANTLY DIFFERENT NATURE THAT WOULD PROVIDE SIMILAR BENEFITS WITH DIFFERENT ENVIRONMENTAL IMPACTS

There are at least two possible alternatives to the Proposed Action for Pūlehunui South that are of a significantly different nature, which would provide similar benefits, with different environmental impacts:

1) Convert the areas for "Homestead Agriculture" to non-"Homestead" agricultural use (which would entail no residences within Pūlehunui South).
2) Lease out all non-commercial/industrial areas of Pūlehunui South to one or a few, larger, experienced farmers.

In both of the above scenarios, the benefits associated with agricultural use would be similar to the Proposed Action, however, in the first scenario under this alternative, those DHHL Beneficiaries who desire to live on the lots they farm would not be satisfied. However, from an agricultural use standpoint, the first scenario under this alternative may result in greater agricultural use of DHHL lands in Pūlehunui South. Implementation of the "no Homestead" agricultural alternative will result in reduced infrastructure impacts (solid waste, water demand, wastewater and additional stormwater runoff generated on-site); visual impacts (appearance of portions of the property changing from a rural character, associated with homestead use, to a more consistent agricultural character). Depending on the intensity of the agricultural practice, more intensive agricultural use (compared with Homestead diversified agricultural use) may have very similar impacts to construction-related impacts (such as from harvesting soil preparation machinery), farm equipment noise and exhaust emissions, and the potential for fugitive dust and soil erosion).

The second scenario under this alternative would provide similar benefits with similar environmental impacts. Larger, experienced farmers would more likely yield greater productivity on a per acre or per square foot basis than a multitude of less experienced farmers.

7.3 ALTERNATIVES RELATED TO DIFFERENT DESIGNS OR DETAILS OF THE PROPOSED ACTION THAT WOULD PRESENT DIFFERENT ENVIRONMENTAL IMPACTS

DHHL is leading a regional infrastructure planning effort for the following State-owned lands at Pūlehunui:

- DHHL Pūlehunui North – 184 acres
- DHHL Pūlehunui South – 646 acres
- DLNR Industrial and Business Park – 280 acres
- Maui Regional Public Safety Complex (MRPSC) – 40-45 acres

This regional infrastructure planning effort is evaluating the following water and wastewater alternatives to service the various State-owned lands at Pūlehunui.

Water - The preferred regional water system alternative may be Alternative 1, which is to have DWS supply water for the Infrastructure Regional Study Area. However DHHL is still evaluating the range of water alternatives described above. A major advantage of Alternative 1 would be that DWS owns and operates their water system and therefore State users of the system would not need to construct or operate a water treatment facility. With Alternatives 2 and 3, a private company would need to be hired to operate the on-site treatment facilities. An additional advantage to Alternative 1 is that the Proposed Action would be serviced by a large water system which can more easily accommodate disruptions in the system, e.g., a power failure at a well or a treatment facility. From a cost standpoint, Alternative 1 may be favorable pending further research. Despite these advantages, Alternative 1 is also the alternative with the greatest uncertainty with respect to implementation timeframes as it relates to offsite storage tank and new source development requirements. DHHL will coordinate with the County of Maui Department of Water Supply (DWS) before identifying a preferred water alternative.

DHHL expects that a regional approach to water infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination.

~~***Wastewater -*** The preferred wastewater system alternative is currently Alternative 4, which is to connect to and coordinate on the County's newly proposed Central Maui WWRF. The primary advantage of Alternative 4 is that the MOU parties will not have to operate and maintain a wastewater treatment facility. Further, wastewater Alternative 4 has the advantage of being serviced by a large water system which can more easily accommodate disruptions in the system (similar to water Alternative 1). WWRD would be operating and maintaining this wastewater treatment facility and has expressed agreement with the State connecting to this facility. The use of R-1 water quality effluent for irrigation within the Infrastructure Regional Study Area is not considered to be feasible under Alternative 4, due to the considerable distance across which R-1 water would have to be transmitted from the WWTF. The expectation is that any R-1 effluent produced by the WWTF would be used for irrigation during most of the year, thereby reducing~~

~~the demand for irrigation water.~~

Wastewater - Based on subsequent consultation with agency stakeholders and continuing technical studies, the preferred alternative is currently Alternative 2A-1 which represents a refinement of wastewater Alternatives 2A and 2C. Unlike the previously preferred wastewater Alternative 4, Alternative 2A-1 does not have the advantage of being serviced by a larger system and will require the State to operate and maintain the treatment facility. However Alternative 2A-1 has several advantages. First, it will be designed to accommodate substantial interim regional demand and is appropriately sized for temporary use. Construction of Alternative 2A-1 could be completed well in advance of regional demand, with a target completion date of 2023 if construction commences in fall 2020. Second, it will be designed to maximize use of currently available funding. Third, the use of R-1 water for irrigation is possible under the current preferred design. The expectation is that any R-1 effluent produced by the WWRF would be used for irrigation during most of the year, thereby reducing the demand for irrigation water. To keep up with wastewater demand the Alternative 2A-1 treatment facility may be expanded, relocated, and/or repurposed in the future, at which point impacts would be more similar to those under Alternative 2A, 2C, or 4. This EIS therefore addresses the impacts of a range of future improvements with respect to Alternative 2A-1.

DHHL expects that a regional approach to wastewater infrastructure will be preferred, unless individual agency constraints necessitate separate development timelines or uncertainty in phasing precludes MOU party coordination.

7.4 ALTERNATIVE OF POSTPONING ACTION PENDING FURTHER STUDY

Further study of any proposed development on the DHHL Project Areas would delay the Department's response to the wishes of the DHHL Beneficiary community. Regionally, postponing action pending further study would only be delaying what has long been proposed. In 2004, DHHL adopted the (DHHL) *Maui Island Plan* which examined all DHHL land in terms of development constraints and opportunities and other criteria, to assign appropriate Land Use Designations to each parcel. The DHHL's *Maui Island Plan* designates Pūlehunui South primarily for General Agriculture use with 100 acres designated for Industrial use. (Department of Hawaiian Home Lands, 2004). At Pūlehunui North, the DHHL's *Maui Island Plan* designates Parcel 36 for Industrial use. The adjacent Parcels 8 and 35 were acquired subsequent to the DHHL's *Maui Island Plan* , and it was amended to designate Commercial and Industrial uses on those parcels. However more recent feedback from the Beneficiary community showed overwhelming support for subsistence agricultural, diversified agriculture, and other community uses at Pūlehunui South (Section 9.2). A proposed amendment to the DHHL's *Maui Island Plan*, shown in Figure 3-1, was created to support this preference.

Similar to the No Action alternative, if the Proposed Action is postponed, there would be at least two possible temporary outcomes; firstly, regional infrastructure master planning would be delayed. Each State agency (DLNR, DAGS/PSD, DHHL) would need to develop individual potable water, wastewater and traffic improvements. Since individual infrastructure improvements may

be more expensive than regional improvements, this could result in an inefficient use government revenue. Secondly, development of DHHL's lands underlying the DHHL Project Areas would be delayed and those properties would remain as vacant lands, underutilized in terms of meeting DHHL Beneficiaries' for diversified agricultural opportunities and income generation (per DHHL's *Maui Island Plan*).

The potential temporary benefit of the Alternative of Postponing Action Pending Further Study is that while remaining mostly vacant, the property would provide open space. Implementation of this alternative will temporarily avoid: infrastructure impacts (solid waste, water demand, wastewater and additional stormwater runoff generated on-site); visual impacts (appearance of the property changing from its fallow condition to more intensively farmed and income-generating uses); traffic impacts; and construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and the potential for fugitive dust and soil erosion).

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8.0 CONTEXTUAL ISSUES

This chapter presents key issues within the context of the Proposed Action.

8.1 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF HUMANITY'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The relationship between the short-term uses of the environment and the long-term productivity of the development of Pūlehunui North and Pūlehunui South primarily involve the short-term impacts during construction and the transition of each site from its current fallow state to income generating property (Pūlehunui North) or reinstating productive agricultural and supporting uses (Pūlehunui South). Short-term impacts during construction include temporary noise, and air quality impacts from required sitework and site preparation, and construction of any new buildings. Groundwork will disturb soils and construction must stop if any inadvertent archaeological finds are unearthed. Traffic may also be impacted temporarily during construction when materials and equipment are transported to the DHHL Project Areas and if any lane or road closures are required (Section 5.3).

Mitigation measures to these short term impacts are detailed in Sections 4.2, 4.3, 4.5, 5.1, 5.4, 5.5, 5.6, 5.8, 5.9, and 5.10, and include the requirement that contractors shall be required to adhere to all federal, State, and County regulations and to ensure the use of proper equipment and regular vehicle maintenance reduce noise, vibration and airborne contaminates. Best practices shall be employed to minimize soil erosion, sediment runoff, and dust such as installation of dust screens and silt fences/bales and careful dewatering practices will be implemented. Construction will also be limited to daylight hours to minimize noise impacts during construction and potential traffic impacts will be coordinated with State and County traffic control operations.

These short-term impacts will cause temporary inconveniences that will be mitigated as much as possible during demolition and construction, that, unfortunately, must be endured in order to redevelop presently underutilized sites that will benefit hundreds of DHHL Beneficiaries directly (by providing agricultural infrastructure for farming), or indirectly, by providing the necessary infrastructure for income-generating uses that fund DHHL projects and programs.

8.2 CUMULATIVE IMPACTS

Cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The following section briefly describes the potential cumulative impacts the Proposed Action may have in conjunction with other area improvements and projects, including non-DHHL developments that may occur in the Infrastructure Regional Study Area.

- The cumulative intensification of development of Pūlehunui will likely alter the landscape and visual character of the region. Cumulative noise impacts related to traffic and an increased intensity of land uses may also occur. Noise buffer areas on either side of the highway will serve as visual buffers as well. Portions of the buffer areas along Maui Veterans Highway will help to mitigate visual impacts, and can also be designed to include grade-separated bike paths and include areas for stormwater management.
- Positive cumulative economic impacts are anticipated. The cumulative development cost of all anticipated projects in the Infrastructure Regional Study Area is estimated at $2.34B. In total, these expenditures are expected to average about $141.6M per year between 2020 and 2028, and $106.9M per year between 2029 and 2038. Positive cumulative impacts may occur on the economy (and to DHHL) as the mix of uses in the area diversifies and is able to support additional businesses and services. The surrounding (non-State owned) land values may also increase due to increased activity and densities. New activity and density may potentially increase tax revenues for both the State and the County in general excise tax, income tax, and property tax collections. However, because the DHHL Project Areas are State-owned, it will not contribute to increased property tax revenues except for the onsite commercial and industrial uses.
- Energy use and increased traffic may create secondary and/or cumulative impacts such as increased greenhouse gas emissions due to energy use and vehicle noise and emissions. The anticipated need for a new electrical substation is discussed in Section 5.8.6. Energy saving strategies and use of alternative/renewable energy will be considered. DHHL will investigate ways to connect to existing and future public and multimodal transportation networks.
- To mitigate temporary cumulative impacts related to construction (air quality, stormwater runoff, noise, and traffic) DHHL will coordinate with State and County traffic control operations (including the Police Department) to mitigate such impacts. There may also be cumulative impacts related to shortages of construction materials, skilled contractors, and other related inputs during the construction phases should multiple projects be under construction at the same time. Coordination amongst the agencies party to the MOU may help to mitigate potential shortages. A substantial mitigation to cumulative construction impacts is the Proposed Action itself; the regional approach to infrastructure master planning offers the possibility of a coordinated development of water, wastewater, and traffic improvements within the Infrastructure Regional Area. Refer to Section 5.8.

8.3 SECONDARY IMPACTS

Secondary impacts include those that are indirectly caused by the action and are later in time or are farther removed in distance but are still reasonably foreseeable. The following section briefly describes the potential secondary impacts that may result indirectly from the Proposed Action.

- No adverse secondary socio-economic impacts are anticipated, therefore no mitigation is proposed. The Proposed Action is expected to generate some $1.03 billion in development expenditures in the State, or about $49.0 million to $59.8 million per year over the 19-year development period.

- Secondary impacts to public services, such as the County's Police Department, Fire Department, and the public school system may occur in the form of increased demands on public service budgets and workforce to serve the DHHL Project Areas. Public services, such as the County's Police Department, may need to increase budgets or reallocate resources and staff as a secondary impact to serve the increased employee and visitor/customer population at Pūlehunui North, with less secondary impacts on the Police Department's resources from DHHL Beneficiaries farming/working at Pūlehunui South. Similarly, the increased Pūlehunui North employee and visitor/customer population may have the secondary impact of the increased need for medical services, which may bring additional businesses and employees to the area. Mitigation includes consultation with Federal, State, and County agencies to determine potential secondary impacts. DHHL will coordinate with these agencies accordingly. Additional funds to support certain public services could potentially be allotted from the increased tax revenues resulting from the Proposed Action.
- No adverse secondary social impacts are anticipated, therefore no mitigation is proposed. The increased (mostly daytime) employee and visitor/customer population at the DHHL Project Areas combined with similar impacts from other State projects, may result in increased safety in the area as increased activity creates less desirable circumstances for illicit activities. More community activities and opportunities to meet people from diverse backgrounds may also stimulate new social networks and relationships between future employees, visitors, and future business patrons to the area.
- Secondary impacts related to increased regional utility and infrastructure demand may include induced jobs as discussed above for those utilities and infrastructure systems serving the Proposed Action such as telecommunication services, water, wastewater, energy and solid waste, green waste, and recycling handlers and processors who will receive the increased materials from the Proposed Action. Related is the anticipated possible shifting of demand on existing resources and services from other areas of Maui. However, the Proposed Action is not anticipated to increase the overall population of Maui as it is anticipated that any future residents of Pūlehunui South will already reside in Maui. In this case, the secondary impact is the shifting of demand on existing resources and services from other parts of the island.
- Increased energy use and increased traffic may create secondary and/or cumulative impacts such as increased greenhouse gas emissions due to energy use and vehicle noise and emissions. The anticipated need for a new electrical substation is discussed in Section 5.8.6. Energy saving strategies and use of alternative/renewable energy will be considered. DHHL has developed and is implementing its own renewable energy policy, Hoʻomaluō Energy Policy, to enable native Hawaiians and the broader community to lead the state's effort to achieve energy self-sufficiency and sustainability. DHHL will investigate ways to connect to existing and future public and multimodal transportation networks. Increased GHG due to electrical demand generated by the Pūlehunui North and Pūlehunui South and vehicle noise and emissions due to increased traffic are

discussed in more detail in Sections 5.3 and 5.5. POTENTIALLY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementation of the Proposed Action will involve the irreversible and irretrievable commitment of certain State and County land and State fiscal resources. Major resource commitments include land and capital resources, construction materials, non-renewable resources, labor, and energy required for construction. These construction-related impacts will be temporary and will be offset by the urgently required income-generating potentials (Pūlehunui North and South) and opportunities for farming (Pūlehunui South) that would be presented by implementing the Proposed Action.

There will also be an increased demand for energy and water to service the DHHL Project Areas, which will both be designed to maximize energy and water efficiency to help mitigate these impacts. There are also opportunities to reduce system demand which are further detailed in Sections 5.8.6 and 5.8.1.

The impacts associated with the irreversible and irretrievable commitment of resources should be weighed against the significant positive and recurring benefits that will derive from the implementation of the Proposed Action. These include but are not limited to: 1) income generation for DHHL's projects and programs (positively impacting DHHL's Beneficiaries); and 2) returning fallow land (Pūlehunui South) to productive diversified agricultural use.

While Pūlehunui North will largely be urbanized, Pūlehunui South will return to more productive agricultural uses (it has lain fallow since sugar cane cultivation was discontinued in 2016).

The impacts represented by the commitment of resources should be weighed against the significant positive and recurring benefits to DHHL and its Beneficiaries that will be derived from the Proposed Action versus the consequences of either taking no action or pursuing another less beneficial use of the property.

Any irreversible and irretrievable commitment of resources should also be weighed against the consequences of taking no action which would continue to leave a valuable landholding in the DHHL inventory unused.

8.4 PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Potential environmental impacts resulting from the development of the DHHL Project Areas have been discussed throughout this EIS, and mitigation measures have been provided for adverse impacts. Probable adverse environmental effects that cannot be avoided are discussed below.

Land Use/Visual Character

While the Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan, Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will

be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility. See Section 9.2. Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

While the Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan, Pūlehunui North will change the visual character of that DHHL property from mostly vacant lands to income-generating land uses, such as commercial and/or industrial uses. Pūlehunui North will be extensively landscaped as part of the development improvements, to ensure visual buffering and softening of the built landscape, however, compared to recently, when lands have lain fallow, the land use and visual character of both Pūlehunui North will be altered.

Similarly, the visual character of Pūlehunui South will change from fallow land to a return to more intensive agricultural and agriculturally-supportive activities, such as agriculture processing and sales. While the proposed use will be agricultural, it will be different from monocultural farming.

Traffic

The proposed development of the DHHL Project Areas will generate traffic (vehicle trips) that will be added to the background traffic (increases in non-DHHL Project Area-related traffic). While measures to mitigate impacts on Maui Veterans Highway are proposed, many residents will have concerns about ever-growing traffic on Maui's roadways. It is inevitable that with Maui's growing resident and visitor population, traffic on Maui Veterans and other roads is expected to increase even if DHHL's plan for the DHHL Project Areas were not implemented. As noted in section 5.3, the State of Hawaii Department of Transportation's (~~HDOT~~ DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) dated July 2014 (hereinafter referred to as "~~HDOT~~ DOT 2035 Transportation Plan") estimated that by the year 2035, traffic volumes on Maui Veterans Highway will increase by over 80 percent due to nearby population and land development growth in the area. To increase highway capacity and accommodate this traffic growth, the ~~HDOT~~ DOT 2035 Transportation Plan ~~recommended~~ conceptually identified the widening of Maui Veterans Highway to construct two additional travel lanes on Maui Veterans Highway from Kuihelani Highway in Kahului to Piʻilani Highway in Kīhei by Year 2035 (which coincides with the full buildout of the DHHL Project Areas). Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038. The timeline of the improvement remains unresolved.

Noise

The dominant noise experienced in the DHHL Project Areas will continue to be traffic along Maui Veterans Highway.

Within Pūlehunui South, a planned 1,900 foot buffer distance to the highway's centerline will mitigate future traffic noise levels at the planned agricultural homesteads, which is predicted to not exceed 55 DNL by 2038, and will be controlled by traffic moving within Pūlehunui South and on perimeter roadways. The area designated for Education within Pūlehunui South is planned to be located with minimum 750 foot buffer distance from the centerline of Maui Veterans Highway. The lots adjacent to the highway right-of-way designated for Culture and Arts within Pūlehunui South are expected to be exposed to incompatible traffic noise levels from Maui Veterans Highway, which exceed 65 DNL. The lots adjacent to the highway right-of-way and designated for commercial uses within Pūlehunui South are predicted to be exposed to traffic noise levels between 65 and 70 DNL, which is considered to be "Marginally Compatible" but not “Incompatible” (see Figure 2 of Appendix F). Traffic noise levels at the interior lots of the Culture and Arts and Commercial portions of Pūlehunui South will probably become “Compatible” for their planned uses as man-made structures provide noise shielding effects from the highway noise. The use of sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces, and DHHL will consider re-locating sensitive uses within the property as needed. Traffic noise levels at the planned industrial lots within Pūlehunui South should be “Compatible” due to their larger setbacks from the highway. Risks of adverse noise impacts from future traffic noise are considered to be low for all uses within Pūlehunui South, except at the Culture and Arts frontal lots.

Pūlehunui North includes a possible hotel (at the discretion of a future developer) in addition to commercial/light industrial uses. The hotel should be "Compatible" with 2038 highway noise levels as long as a minimum 215 feet setback is maintained from the centerline of the highway, so as to not exceed 65 DNL. If a Hotel is developed, it will likely include air conditioning, which means that windows will be closed and serve to attenuate noise from traffic along Maui Veterans Highway and stationary noise from other uses at Pūlehunui North. Commercial/Light Industrial uses on Pūlehunui North should not be exposed to “lncompatible” highway noise levels of 75 DNL because of their minimum setback distance of 110 feet from the highway centerline. Risks of adverse noise impacts from future traffic noise at Pūlehunui North are considered to be very low. In addition, the use of sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces.

To mitigate potential impacts of Pūlehunui Motorsports Park (PMP) activities on potential residences and other sensitive noise receptors that may be associated with the proposed land uses, a noise study that meets the requirements of 24 CFR Part 51, Subpart B will be conducted prior to construction of buildings that will house any such uses. The study will address noise standards and any appropriate mitigation required under 24 CFR Part 51, Subpart B. Following the recommendation of the Acoustic Study, disclosure about the audibility of the PMP’s activities will be provided to future users at the DHHL Project Areas.

With the recommended mitigation measures, the proposed development of the DHHL Project Areas is not anticipated to have an adverse impact on noise in the vicinity of the Infrastructure Regional Study Area. Refer to Appendix F.

Water
While the DHHL Project Areas were once under sugar cane cultivation, and irrigated, most recently, the lands have lain fallow and have not been irrigated. The proposed development of the DHHL Project Areas will require both potable and non-potable water for DHHL's proposed income-generating and diversified agricultural uses. Refer to Section 5.8.

Solid Waste
As detailed in Section 5.8.5, there will be solid waste generated during and after construction at the DHHL Project Areas, but DHHL is committed to limiting the environmental impact of the DHHL Project Areas by reducing solid waste. DHHL will work with contractors to minimize the amount of solid waste generated during the construction.

8.5 RATIONALE FOR PROCEEEDING WITH THE PROPOSED ACTION NOTWITHSTANDING UNAVOIDABLE EFFECTS

In light of the above mentioned unavoidable effects, the Proposed Action should proceed because the probable adverse impacts are offset by substantial positive factors, including:

- Providing income-generating uses that supports DHHL projects, programs, and Beneficiaries.

- Providing farming/gardening opportunities for DHHL Beneficiaries.

- Planning for needed community facilities (educational/meeting facility) to meet Maui Beneficiaries' needs.

- **Development employment** - During its buildout, the Proposed Action is estimated to generate some 490 to 600 full-time equivalent (FTE)[4] jobs annually, including positions supported directly and indirectly by its initial development expenditures. About 65 percent of these jobs are expected to be located on Maui, representing about 320 to 390 FTE jobs in an average year between 2020 and 2038.

- **Operational employment** - The employment impacts of a real estate development are often thought of as those that occur at its new facilities. While this is important, and many such on-site jobs will be new, others may be jobs that would have existed, or previously existed, elsewhere in the County and/or State. Therefore, assessment of the operations-related employment impacts is presented two ways: in terms of on-site employment as well as net new employment.

    - **On-site** – By the time of their completion in 2038, the Proposed Action is estimated to support some 3,070 FTE jobs on-site. These would all be direct, ongoing positions.

- **Net new** – While some of the on-site jobs could represent positions that might have been located elsewhere in the County and/or State even if the Proposed Action was not developed, by buildout in 2038, the Proposed Action is expected to have created some 4,300 FTE positions statewide. Of this statewide total, about 83 percent, or 3,600 positions are estimated to have been created in Maui County. These "net new" jobs include technical, managerial and staff positions at the various Pūlehunui Projects themselves, and many other positions in myriad industries that can be expected to be generated throughout the economy via indirect and induced economic factors. Like the on-site positions, these net new operating benefits are expected to be ongoing.

- **Development-related positions** are expected to support total personal earnings of some $33M to $40M in a typical year, statewide, during the Projects' design and construction. These earnings represent an average of about $67,000 per FTE job, including direct construction-related jobs as well as the indirect and induced opportunities created throughout the economy. The many jobs created directly by the development are expected to enjoy higher salaries than this overall average, in the range of about $86,000 to $87,000 FTE.

  About 65 percent of development earnings can be expected to be realized in Maui County, representing some $21M to $26M per year in development-related earnings during buildout of the Proposed Action.
- **Net new operational positions** at the Proposed Action is projected to support about $198M per year in new earnings for Hawaii residents statewide, at buildout. On average, net new FTE positions are expected to earn about $46,000 to $47,000 each.

- Maui residents are anticipated to realize about 81 percent of the statewide total annual earnings, or about $160M by 2038 and annually thereafter.

- **County impacts** - Net additional County operating revenues are projected at $2.3M per year by the time of project buildout, in 2018 dollars. The anticipated additional County revenues are expected to represent two times the additional operating expenses that may result from the Proposed Action's development.

- **State** - With its more diverse taxing powers, fiscal benefits for the State are expected to be even more significant than for the County, in both relative and absolute terms. Towards the anticipated buildout in 2038, when development activity and operations are both still active, net additional operating revenues are estimated to average over $12M per year, with a revenue to expenditure ratio of around eight.

  After completion of the initial buildout, net additional State revenues could continue at about $9M per year, with ongoing new revenues amounting to about six times new expenditures.

The proposed development of the DHHL Project Areas also represents the efficient use of public resources (State-owned land) by leveraging sister State agencies in sharing in the costs of infrastructure. It attempts to balance the potential impacts of the intensification of uses of DHHL's lands at the DHHL Project Areas with environmental considerations and offsetting direct and indirect benefits.

8.6 MITIGATION MEASURES PROPOSED TO AVOID, MINIMIZE, RECTIFY OR REDUCE IMPACT

Climate

Significant impacts are not anticipated. To mitigate a localized heat island effect in the DHHL Project Areas, proposed landscaping and landscaped buffers will be integrated into the non-agricultural components of proposed improvements in Pūlehunui North and Pūlehunui South. Refer to Section 4.1.

Geology and Topography

Significant impacts are not anticipated. Future design work will respect existing topography to the extent practicable, to minimize extensive cut and fill activity. The proposed drainage plan for the DHHL Project Areas is anticipated to positively impact current runoff conditions. Refer to Section 5.8.4. Low-impact Development (LID) strategies will be considered at the DHHL Project Areas, which would further mitigate potential impacts. A discussion of possible interagency coordination on grading efforts is provided in Section 5.8.4.

Soils

The return of Pūlehunui South to agricultural uses will mitigate long term soil erosion through the use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. To mitigate impacts to soil resources in the DHHL Project Areas, the following best management practices (BMPs) will be considered by contractors during the construction phase:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Keep runoff onsite.
- Construction exceeding one acre is required to comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements.
- Contractors will be required to provide BMPs as part of their contracts.

Natural Hazards

No habitable structures will be built in the Zone AE portion of Pūlehunui South. The Pūlehunui community will not exacerbate any hazard conditions. Potential damage caused by earthquakes and hurricanes will be mitigated, for structures in compliance with the County Building Code.

Streams and Surface Water

The Proposed Action is not anticipated to adversely impact downgradient perennial streams, major drainageways, wetlands or waterbodies (and in particular Keālia Pond). There is no anticipated increase in runoff from the DHHL Project Areas towards Keālia Pond. In implementing the proposed design for Pūlehunui South, the total onsite runoff from that property will be reduced by 96 percent compared to existing conditions. To further mitigate impacts to water resources, the BMPs noted above under Soil mitigations will be considered by contractors during the construction phase. Refer to Section 4.5.

Flora Resources

No mitigations were recommended regarding the botanical resources in the DHHL Project Areas. As noted in Sections 5.2 and 5.8.1, DHHL will embrace the use of native plants as a means of water conservation and to support cultural practices; this may positively impact flora resources.

Fauna Resources

To mitigate potential impacts to the ʻōpeʻapeʻa (Hawaiian bat), contractors at the DHHL Project Areas will be instructed to avoid site clearing activities between June 1 through September 15. If site clearing must occur during this time, the DLNR Division of Forestry and Wildlife will be consulted before disturbance, removal or trimming of woody vegetation taller than 15 feet. Barbed wire will not be used for fencing, to mitigate potential harm caused by entanglement. To mitigate impacts to the Blackburn's sphinx moth, tree tobacco plants should be examined again between November and April (the latter part of the wet season) to get a more definitive reading of their presence or absence. USFWS guidance will be followed and, if necessary, consultation with the USFWS will be sought prior to site clearing to address an appropriate plan for removal of existing tobacco plants. (The USFWS will be contacted for additional guidance, should moths or host plants over three feet in height be identified. DHHL notes that should no moths or host plants be identified, USFWS has indicated that measures should be taken to avoid attracting moths and prohibit tree tobacco from entering the property.) Any nēnē transiting through the DHHL Project Areas will not be bothered or harassed, and will be allowed to leave at their own convenience. To mitigate general impacts to seabirds, Pulehunui South will utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting. Where feasible, outdoor lights at Pulehunui South will be fully shielded so the bulb can only be seen from below bulb height, and only used when necessary. Nighttime construction will not occur between September 15 and December 15. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting. DHHL will encourage prospective developer(s) to use outdoor lights that are fully shielded so the bulb can only be seen from below bulb height, and only used when necessary. DHHL will advise against nighttime construction between September 15 and December 15. Measures will also be

taken to prevent the creation of habitat conditions (e.g., standing water) which may be attractive but ultimately detrimental to wildlife. As noted in Section 4.1, the occasions that detention basins will contain standing water for long periods of time are anticipated to be minimal. At the request of DOT-AIR, DHHL will specify to prospective developers and other site users that design and landscaping at the DHHL Project Areas should not attract wildlife. Should wildlife be determined to present a potential hazard to aircraft, DHHL will take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. DHHL notes FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports. Proper eradication will occur in compliance with HAR Chapter 11-26 prior to site clearing at the DHHL Project Areas.

Archaeological and Historic Resources

As noted in Section 5.1, SHPD consultation is ongoing. DHHL and/or future developer(s) will comply with the recommended strategies to mitigate adverse impacts to archaeological and historic resources.

Cultural Resources

The CIA recommended the following cultural mitigations with the goal of honoring the traditional landscape while protecting cultural resources. DHHL will employ these strategies to the extent practicable:

- Use traditional place names when possible in DHHL Project Area design, signage, and related materials.
- Minimize coastal resource degradation that may result from flooding (the PER will assist greatly in this effort). Monitor and record rain and weather patterns which may assist with future land use decisions.
- Increase awareness of the connectivity between the mauka and makai weather patterns of Kula Moku.
- As a part of farm planning, the use of appropriate native ground cover in non-cultivated areas should be considered to minimize dust pollution that may result from modern agricultural practices and carried by the winds through the central valley.
- Foster and encourage a mālama ʻāina land stewardship ethic that extends beyond the physical boundaries of DHHL's lands. Strategies to accomplish this could include BMP monitoring/enforcement, continued agency consultation, and environmental outreach/education programs where possible. Prospective developers or tenants at Pūlehunui North who embrace this land ethic should be favorably considered from a cultural standpoint.
- Prior to the initiation of land development, whether residential, business, or agriculture, appropriate blessings should be carried out as the central isthmus and lower region of Pūlehunui is known as a place in which the spirits reside. As water from off-site resources continues to be investigated as a possible water source, the CIA recommended continued consultation with Native Hawaiian communities and

other stakeholders that may hold appurtenant and riparian rights within the originating watershed(s).

- Embrace the re-introduction and cultivation of suitable native plants, in support of laʻau lapaʻau (traditional Hawaiian medicine) practices and traditional crafts.
- Consider traditional trail systems during lot design. The DHHL Project Areas have not been used for traditional trail access within the last century; this mitigation embraces a revival of trail system access to the shoreline, as well as between Waikapū and upland Kula.

The proposed drainage improvements for Pūlehunui South are anticipated to mitigate some concerns related to drainage. Refer to Section 5.8.4 for a full discussion of existing and proposed drainage conditions.

Traffic

As noted in Sections 5.3 and 8.4, the State of Hawaii Department of Transportation's (~~HDOT~~ DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) dated July 2014 (hereinafter referred to as "~~HDOT~~ DOT 2035 Transportation Plan") estimated that by the year 2035, traffic volumes on Maui Veterans Highway will increase by over 80 percent due to nearby population and land development growth in the area. To increase highway capacity and accommodate this traffic growth, the ~~HOOT~~ DOT 2035 Transportation Plan ~~recommended~~ conceptually identified the widening of Maui Veterans Highway to construct two additional travel lanes on Maui Veterans Highway from Kuihelani Highway in Kahului to Piʻilani Highway in Kīhei by Year 2035 (which coincides with the full buildout of the DHHL Project Areas). Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038. However the improvement, if/when implemented, would serve to better regional traffic conditions. In addition the signal timing plans at Maui Veterans Highway/Mehameha Loop (North)/ Kamaʻāina Road, Maui Veterans Highway/DHHL North Access/DLNR Access and Maui Veterans Highway/Mehameha Loop (South)/Pulehunui Motorsports Park Access Road intersections should be optimized to provide favorable throughput progression along Maui Veterans Highway. Roundabouts are not considered feasible as discussed in Section 5.3.

- ~~By 2035, Maui Veterans Highway needs to be widened to include a third travel lane, with some intersections needing double left-turn lanes (this coincides with the full build-out of the DHHL Project Areas).~~
- Traffic signal timing plans will be optimized to improve traffic flow along the highway.
- DHHL will coordinate with ~~HDOT~~ DOT on its fair share of improvements.
- DHHL and DLNR will coordinate the Proposed Action with the Statewide Transportation Improvement Program (STIP) and with the DOT to address the need for additional regional capacity for the Maui Veterans Highway. DHHL will also coordinate with DLNR regarding the proposed new intersection on Maui Veterans Highway that will provide access to both agencies' lands to ensure the proposed access roads to each property align and are acceptable to DOT.

- DHHL will investigate ways to connect to existing and future public and multimodal transportation networks.

Noise

With the recommended mitigation measures, the proposed development of the DHHL Project Areas is not anticipated to have an adverse impact on noise in the vicinity of the Infrastructure Regional Study Area. With the following mitigations, the DHHL Project Areas are not anticipated to impact offsite land uses.

- Pūlehunui South
    - A 1,900 foot buffer distance to the highway will mitigate future traffic noise levels at agricultural homesteads.
    - Education uses will be located with minimum 750 foot buffer distance from the highway.
    - Noise from Maui Veterans Highway may constrain uses fronting to the highway, particularly Culture and Arts uses; sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces. DHHL will consider re-locating sensitive uses within the property as needed.
    - A HUD compliant noise study will be conducted to determine whether the FHA/HUD noise standard of 65 DNL will be exceeded at noise sensitive uses at Pūlehunui South.

- Pūlehunui North
    - A minimum 215 foot setback to the highway will be established if a hotel is constructed.
    - Air conditioning will mean windows will be closed and further mitigate noise impacts from the highway and other uses at Pūlehunui North.
    - A minimum setback distance of 110 feet from the highway will mitigate highway noise impacts to Commercial/Light Industrial uses.
    - Sound attenuating walls and/or berms may also be used as a traffic noise mitigation measure for both indoor and outdoor spaces.

Man-Made Hazards

To address potential man-made hazards due to former military uses, at the appropriate stage(s) in the development process, DHHL will coordinate with the DOH and USACE regarding other possible former uses at the former NAS Puunene and will adhere to applicable technical guidance. DHHL will consult the DOH regarding any anticipated residential or other sensitive uses of the DHHL Project Areas.

Land Use/Visual Character

The Proposed Action will not impact any Scenic Corridors identified in the Maui Island Plan. Pūlehunui North will change the visual character of the property from vacant lands to income-generating land uses, such as commercial and/or industrial uses. However, Pūlehunui North will be extensively landscaped as part of the development improvements which will ensure visual buffering and softening of the built landscape. It is likely that those in vehicles travelling along Maui Veterans Highway will be focusing their attention on the road, the West Maui Mountains, and/or Haleakalā. The majority of Pūlehunui South will be used for agriculture and supporting uses, with some of its open space supporting agricultural crops selected to avoid impacting visual resources or business visibility.

Another potential impact concerns the use of exterior lighting and the potential for light pollution. Prospective developer(s) at Pūlehunui North will be encouraged to utilize appropriate exterior lighting such as hooded lights and avoidance of excessive lighting, to mitigate visual impacts such as light pollution. Pūlehunui South will utilize appropriate exterior lighting.

Water

There will also be an increased demand for water to service the new facilities proposed at the DHHL Project Areas, but these facilities will be designed to maximize water efficiency to help mitigate these impacts. These are detailed below and in Section 5.8.1. Water efficiency strategies will help to mitigate the impacts of the Proposed Action on water resources, and DHHL will consider the following:

- Design buildings and landscaped areas to reduce overall water demand as much as possible.
- Use the most appropriate water quality for the projected need (balance potable and non-potable uses).
- From a regional infrastructure standpoint, it is noted that post-treatment products such as RO concentrate or R-1 recycled water, or untreated non-potable water could be used to irrigate certain areas, thereby decreasing overall potable system demand.
- Opportunities to reduce projected demands by installing rainwater catchment systems will be considered. (Given rainfall rates of 11 to 13 inches per year it is not anticipated that stormwater will be a dependable source of irrigation water. However, DHHL is open to considering potential alternative water sources such as rainwater catchment.
- Other opportunities to increase overall system efficiency may exist and DHHL will consider any that may be feasible.

Site users at the DHHL Project Areas will be encouraged to consider the following water conservation measures:

- Facility design to maximize water efficiency;
- Water efficient fixtures;

- Dual flush toilets;
- Leak detection sensors and alarms;
- Minimizing landscaped areas requiring extensive irrigation;
- Use of landscaping materials with low water needs (xeriscaping and embracing the use of native plants);
- Smart irrigation systems and moisture sensing feedback technology; and
- Use of automatic drip irrigation as the predominant delivery system.

To mitigate impacts to surface and groundwater resources best management practices (BMPs) will be considered by contractors during the construction phase. Refer to Section 5.8.1.

Drainage

The proposed drainage plan is designed to mitigate a number of drainage deficiencies. These are discussed in detail in Section 5.8.4.

Solid Waste

As previously noted, DHHL will work with contractors to minimize the amount of solid waste generated during the construction. After construction, DHHL will implement strategies from the County of Maui Integrated Solid Waste Management Plan (2009) for diverting solid waste from landfills by providing options for recycling.

- DHHL will work with contractors to minimize the amount of solid waste generated during the construction. Green waste will be managed appropriately.
- After construction, DHHL will implement strategies from the County of Maui Integrated Solid Waste Management Plan (2009) for diverting solid waste from landfills by providing options for recycling.

Agriculture

- Overall positive impacts to agriculture are anticipated. Agricultural use at Pūlehunui South will require a water supply for irrigation as well as windbreaks to protect the proposed agricultural uses from strong winds and mitigate soil erosion. Long term soil erosion can also be mitigated through use of windbreaks and crop rotation cycles that avoid leaving fallow land open and exposed to wind. Temporary BMPs will be implemented to minimize soil loss and erosion hazards during the construction period, thereby mitigating adverse impacts to future agricultural activities and properties downwind or downstream. Refer to Section 5.9 for a detailed discussion of agricultural impacts.

Public Services and Facilities

- Mitigation of impacts to public services and facilities includes consultation with Federal, State, and County agencies to determine potential secondary impacts. DHHL will coordinate with these agencies accordingly. Additional funds to support certain public

services could potentially be allotted from the increased tax revenues resulting from the Proposed Action.

- The DHHL Project Areas may have overall positive impacts to recreational and educational facilities, given anticipated land uses considered under the Proposed Action. To mitigate any adverse impacts, as plans for the DHHL Project Areas progress, DHHL will consult the DOE regarding school impact fees and other potential impacts to educational resources. DHHL Project Areas will comply with any applicable impact fee requirements.
- To mitigate impacts to site users related to airports and airfields, should DHHL suspect that fumes, smoke, noise, vibrations, odors, and other airport-related exposures may impact the anticipated uses of its lands, more protective mitigation strategies will be considered at such time, depending on the nature of the concern. Should other unforeseen impacts arise from aircraft activities which are not mitigated by the strategies described in this EIS, DHHL will consider additional measures.
- Measures will also be taken to prevent the creation of habitat conditions (e.g., standing water) which may be attractive but ultimately detrimental to wildlife. As noted in Section 4.1, the occasions that detention basins will contain standing water for long periods of time are anticipated to be minimal. At the request of DOT-AIR, DHHL will specify to prospective developers and other site users that design and landscaping at the DHHL Project Areas should not attract wildlife. Should wildlife be determined to present a potential hazard to aircraft, DHHL will take appropriate measures to ensure the proper mitigation of the potential wildlife hazard. DHHL notes FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, provides guidance for developments and wildlife management near airports. Proper eradication will occur in compliance with HAR Chapter 11-26 prior to site clearing at the DHHL Project Areas.

Mitigation of Cumulative and Secondary Impacts

- As noted previously, the Proposed Action may have cumulative and/or secondary impacts, mitigations for which are discussed in Sections 8.2 and 8.3.

8.7 UNRESOLVED ISSUES

Water/Wastewater

While this EIS seeks to address alternatives for regional, sub-regional, and "independent" approaches to infrastructure development , it is possible that one or more State entities will decide to implement an "independent" solution for either drinking water facilities and/or wastewater treatment. Moreover, if unforeseen circumstances affect the selection process for the preferred alternative(s), it is possible that the preferred alternative(s) identified in this EIS may not ultimately be selected. This EIS therefore addresses the impacts of a range of future improvements with respect to infrastructure; it is intended to address environmental impacts regardless of the alternative selected

Agricultural Homesteads and other anticipated uses at Pūlehunui South
Following the completion of the EIS process, DHHL will pursue an amendment of its Maui Island Plan to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South.

Highways
As noted in sections 5.3, 8.4 and 8.6, the State of Hawai‘i, Department of Transportation's (DOT) *Federal Aid Highways 2035 Transportation Plan for the District of Maui* (Plan) recommended construction of two additional travel lanes on Maui Veterans Highway from Kahului to Pi‘ilani Highway to increase the highway capacity in order to accommodate the estimated increase in traffic. ~~It should be noted that the additional lanes in both the north and south direction are not currently on the list of projects on the Statewide Transportation Improvement Program (STIP) for the current Federal Fiscal Year 2015 through 2018.~~ Because it is currently not a funded improvement and is not programmed in the latest Statewide Transportation Improvement Program (STIP), this widening improvement was not included in the TIAR; the TIAR does not assume its implementation by 2038. However the improvement, if/when implemented, would serve to better regional traffic conditions. Due to the uncertainty of when the additional travel lanes may be constructed, DHHL and DLNR will coordinate the Infrastructure Regional Study Area with the STIP and with the DOT to address the need for additional regional capacity for the Maui Veterans Highway.

In addition to the improvements described above the County of Maui’s *Maui Island Plan* conceptually identifies two future regional roadways that may further alleviate traffic conditions in the region: the Upcountry-Kīhei Corridor and the Kīhei Mauka Bypass Collector Road. These two regional roadways have not been funded or designed and therefore are excluded from the traffic analysis (Section 5.3). The anticipated land uses at Pūlehunui South do not preclude accommodation of the Kīhei Mauka Bypass Collector Road through roadway easements and/or right-of-way acquisition. DHHL is open to coordination with other agencies to further explore accommodating the Kīhei Mauka Bypass Collector Road.

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9.0 PUBLIC ENGAGEMENT & CONSULTATION

9.1 AGENCY COORDINATION

The regional planning effort is being carried out in a manner consistent with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, wherein these parties agreed to "make their best efforts to work in a collaborative manner". The MOU was intended to allow the aforementioned agencies to benefit from economies of scale, joint infrastructure financing, planning and development, and provide significant economic benefits to the Maui community.

The agencies party to the MOU (see Appendix K) have engaged in ongoing coordination for planning of the Infrastructure Regional Master Plan as well as other proposed agency actions relating to the MOU. These agencies have also consulted Maui County Parks, which manages the Maui Motorsports Park (PMP) located in the vicinity of the Infrastructure Regional Master Plan area. Coordination between these agencies will continue throughout the Proposed Action as well as any future actions in the vicinity to maintain compatible uses with surrounding properties and to coordinate on infrastructure needs.

9.2 PUBLIC ENGAGEMENT

The regional infrastructure master planning effort included a community engagement process, including consultation with DHHL Beneficiaries, community leaders and Maui residents. Public input was sought at a public EIS Scoping Meeting held January 18, 2018.

The public EIS Scoping Meeting was held during the public comment period for the Proposed Action's EISPN. The meeting included background information on the Proposed Action, an overview of the MOU and each agency's lands within the Infrastructure Regional Study Area, the scope of the Pūlehunui Regional Infrastructure Master Plan, and a review of schedule milestones. Attendees were oriented on the SmartComment website, a way to comment on the EISPN online, and were also given the opportunity to fill out comment cards and ask questions.

DHHL Beneficiary consultation regarding land use programs at the DHHL Project Areas was conducted through the aforementioned public EIS Scoping Meeting, an online survey, two Beneficiary Planning Workshops held on April 21 and 28, 2018, and a follow-up meeting on September 5, 2018, where the Pūlehunui South Conceptual Plan was received with majority support for the purposes of the EIS. Refer to Appendix A for attendance sheets from Beneficiary events hosted by DHHL.

The online survey provided Beneficiaries the opportunity to share their manaʻo and vision for the Pūlehunui region and to express interest in agricultural and supporting land uses at Pūlehunui South. The first workshop on April 21 followed the survey and provided an orientation of the Infrastructure Regional Study Area, region, and the planning process. DHHL solicited further

details regarding Beneficiaries' vision for Pūlehunui through comment cards, group discussions, presentations, and maps. At the April 28 workshop, Beneficiaries had the opportunity to respond to three alternative concept plans for Pūlehunui South which had been drafted in response to the first workshop. A final concept plan (Figure 3-3) was drafted in response to feedback received at the April 28 workshop and was shared with Beneficiaries on September 5, 2018, where it was received with majority support for the purposes of the EIS.

Overall, this recent Beneficiary feedback indicated that the preferred land use program at Pūlehunui South should include a much higher diversity of uses than those provided for under the existing (DHHL) *Maui Island Plan* designation which only includes General Agriculture and Industrial uses. In addition to the existing designations, Beneficiaries expressed a strong preference for agricultural homesteads, agricultural support, and community uses such as cultural education and a central community gathering space. The land uses preferred by Beneficiaries at Pūlehunui South correspond to DHHL land use designations of Subsistence Agriculture, Community Use, Supplemental Agriculture, and Commercial Use. Following the completion of the EIS process, DHHL will pursue an amendment of its *Maui Island Plan* to accommodate the proposed agricultural homesteads and other new uses at Pūlehunui South. A proposed amendment to the DHHL's *Maui Island Plan*, shown in Figure 3-1, was created to support this preference.

The master plan has been prepared largely in concert with the tenets of the updated *General Plan*, including the *Draft Maui Island Plan* and Directed Growth Strategy.

During the Draft EIS public review period, Ms. Kekoa Enomoto wrote:

> I would like to see perhaps 10 times more agricultural beneficiaries at Pulehunui North and/or South than proposed in the Pulehunui draft EIS, to mitigate the list of 4,663 beneficiaries waiting for Maui ag homestead awards.
>
> I propose that some 800 beneficiaries live on and cultivate two-thirds of the Pulehunui acreage, or 556 acres, versus the proposed 80 to 110 beneficiaries on 29 percent of the land, or 238 acres.
>
> To wit, Page 1-3 (digital Page 332) of Austin, Tsutsumi & Associates' Preliminary Engineering Report in the draft EIS states, "The agricultural homestead area, located on the mauka portion of the site, will feature approximately 80-110 homestead lots for DHHL Beneficiaries with the intent of agricultural use. These agricultural units will typically have an area of up to two acres with an overall area totaling 238 acres" of the total 830 Pulehunui North (184 acres)/South (646) acres.
>
> On my proposed two-thirds, or 556 homesteaded acres, there could be from 278 two-acre farms up to 1,112 half-acre farmlets, or some 800 mixed half- to two-acre-sized farms. After all, the mission of the 1921 Hawaiian Homes Commission Act federal trust is

to reconnect native Hawaiians with their ‘aina, not place light industrial on trust acres. Under my proposal, the remaining 274 non-homesteaded Pulehunui acres would feature roads, parks, education, culture, cooperative farming, community pasturing of livestock and mercantile/retail.

For Pulehunui North/South, my mana‘o is that beneficiary-driven, community-based planning that involves community hikes and focus-group discussions should follow the EIS.

Moreover, my mana‘o is that Pulehunui ag-homestead awardees should be required to 1) reside on the subsistence-ag lots, and 2) submit, and within two years abide by, an ag plan.

Refer to Appendix B-2 for a copy of Ms. Enomoto’s comment and DHHL’s response.

9.3 CONSULTATION

Various Federal, State, and County agencies, as well as organizations and members within the community, were consulted with or provided comments on the Draft EIS and EISPN which aided in preparation of the ~~Draft~~ Final EIS (see Table 9-1 and Table 9-2 below). Additionally, a public scoping meeting was held on January 18, 2018.

The EISPN was sent to the following agencies, organizations, and individuals indicated below in the table with a (X). The EISPN was also available on the OEQC website. The public comment period on the EISPN was from December 23, 2017 to January 22, 2018. Where indicated (Comment Date), an agency, organization, or individual submitted comments.

Table 9-1: EISPN Distribution & Comments

Agency	EISPN Sent	Comment Date
State		
Department of Accounting and General Services	X	12/29/2017
Department of Agriculture	X	-
Department of Business, Economic Development and Tourism (DBEDT)	X	-
DBEDT – Land Use Commission	X	-
DBEDT – Office of Planning	X	-
Department of Defense	X	-
Department of Education	X	1/22/2018
Department of Health (DOH)	X	-
DOH, Environmental Planning Office		1/18/2018

Agency	EISPN Sent	Comment Date
Department of Health, Environmental Health Administration	X	-
DOH – Office of Environmental Quality Control	X	-
Department of Labor and Industrial Relations	X	-
DLNR	X	1/25/18
DLNR – State Historic Preservation Division	X	-
Department of Public Safety	X	-
Department of Transportation	X	2/6/18
Department of Transportation – Highways	X	-
Hawai'i Housing Finance and Development Corporation	X	-
Hawai'i Public Housing Authority	X	-
Hawai'i Tourism Authority	X	-
Office of Hawaiian Affairs	X	-
Federal		
U.S. Army Corps of Engineers	X	1/22/2018
U.S. Fish & Wildlife Service	X	-
Federal Aviation Administration, Hawaii Airports District Office	X	-
Federal Emergency Management Agency	X	-
County of Maui		
Department of Environmental Management	X	-
Department of Fire & Public Safety	X	-
Department of Housing & Human Concerns	X	12/28/2017
Department of Parks & Recreation	X	1/18/2018
Department of Planning	X	-
Department of Public Works	X	1/2/2018
Department of Transportation	X	1/4/2018
Department of Water Supply	X	-
Police Department	X	-
Elected Officials		
Senator Brian Schatz	X	-
Senator Mazie Hirono	X	-
Representative Tulsi Gabbard	X	-
Lt. Governor Shan Tsutsui	X	-
State Representative Kyle Yamashita	X	-
State Senator Rosalyn Baker	X	-
State Senator Gilbert S. C. Keith-Agaran	X	-
State Senator J. Kalani English	X	-
Mayor Arakawa	X	-
Mike White	X	-

Agency	EISPN Sent	Comment Date
Robert Carroll	X	-
Alika Atay	X	-
Elle Cochran	X	-
Stacy Crivello	X	-
Don Guzman	X	-
Riki Hokama	X	-
Kelly King	X	-
Yuki Lei Sugimura	X	-
Libraries		
Legislative Reference Bureau Library	X	-
Hawaii State Library - Hawaii Documents Center	X	-
Kahului Public Library	X	-
Lahaina Public Library	X	-
Kihei Public Library	X	-
DBEDT - Research Division Library	X	-
DBEDT - Strategic Industries Division	X	-
UH Thomas H. Hamilton Library	X	-
UH Maui College Library	X	-
Private Companies, Organizations, and Individuals		
Tiare Lawrence	X	-
Kihei Community Association	X	-
Maui Tomorrow Foundation	X	-
Maui Sierra Club	X	-
Maui Electric Company, Ltd	X	-
Sandwich Isles Communications	X	-
Spectrum	X	-
A&B	X	-
HC&S / A&B Diversified Ag. Group	X	-
Maui Humane Society	X	-
Hawaiian Cement	X	-
Pacific Rim	X	-
Monsanto Company	X	-
PMG Holdings Inc	X	-
Mana LLC	X	-
Association of Hawaiians for Homestead Lands	X	-
DHHL Beneficiaries	X	-
Aha Moku o Maui Inc.	X	-
Sovereign Councils of the Hawaiian Homelands Assembly	X	-
Mike Atherton	X	-

Agency	EISPN Sent	Comment Date
Hawaiian Telcom	X	-
Maui Electric Company, Ltd.	X	-
Maui/Lānaʻi Islands Burial Council (Chair Keʻeaumoku Kapu)	X	-
Maui Lani Development (Leiane Paci)	X	-
Maui News	X	-
Honolulu Star Advertiser	X	-
Basil Oshiro/Aha Moku o Maui		1/18 and 1/20/2018
Blossom Feiteira/Mokupuni Council/AHHL		1/18/2018
Clifton Hasegawa		12/31/2017
Colleen Curran		1/18/2018
Lucienne De Naie		1/18/2018

Consultation regarding the Draft EIS was distributed to the following agencies, organizations, and individuals indicated below in the table. The Draft EIS was also published on the OEQC website. The public comment period was from November 8, 2018 to December 24, 2018. Where indicated (under Comment Date), an agency, organization, or individual submitted comments.

Table 9-2: Draft EIS Distribution & Comments

Agency	Consulted on Draft EIS	Comment Date
State		
Department of Accounting and General Services	X	11/29/18
Department of Agriculture	X	-
Department of Business, Economic Development and Tourism (DBEDT)	X	-
DBEDT – Land Use Commission	X	-
DBEDT – Office of Planning	X	12/21/18
DBEDT – Strategic Industries Division	X	-
Department of Defense	X	-
Department of Education	X	12/24/18
Department of Health (DOH)	X	-
DOH – Environmental Management Division	X	-
DOH – Environmental Health Administration	X	-
DOH – Clean Water Branch	X	-
DOH – Clean Air Branch	X	-
DOH – Wastewater Branch	X	-
DOH – Safe Drinking Water Branch	X	-
DOH – Solid and Hazardous Waste Branch	X	-

Agency	**Consulted on Draft EIS**	**Comment Date**
DOH – Hazard Evaluation & Emergency Response Office	X	11/21/18
DOH – Environmental Health Services Division	X	-
DOH – Indoor and Radiological Health Branch	X	-
DOH – Sanitation Branch	X	-
DOH – Vector Control Branch	X	-
DOH – Office of Environmental Quality Control	X	-
Department of Labor and Industrial Relations	X	-
Department of Land and Natural Resources (DLNR)	X	12/21/18, 12/24/18
DLNR – State Historic Preservation Division	X	-
Department of Public Safety	X	12/24/18
Department of Transportation (DOT)	X	12/20/18
DOT – Highways	X	-
DOT – State Transportation Planning Office		-
Hawai'i Housing Finance and Development Corporation	X	-
Hawai'i Public Housing Authority	X	-
Hawai'i Tourism Authority	X	-
Office of Hawaiian Affairs	X	-
Federal		
U.S. Army Corps of Engineers	X	-
U.S. Fish & Wildlife Service	X	11/27/18
U.S.D.A. Natural Resources Conservation Service	X	-
U.S. Coast Guard	X	-
U.S. Geologic Survey	X	11/19/18
National Parks Service	X	-
Federal Transit Administration	X	-
Federal Aviation Administration, Hawaii Airports District Office	X	-
Federal Emergency Management Agency	X	-
County of Maui		
Department of Environmental Management	X	12/24/18
Department of Fire & Public Safety	X	-
Department of Housing & Human Concerns	X	-
Department of Parks & Recreation	X	-
Department of Planning	X	12/18/18
Department of Public Works	X	12/14/18
Department of Transportation	X	12/4/18
Department of Water Supply	X	-
Police Department	X	-
Maui Metropolitan Planning Office	X	-

Agency	Consulted on Draft EIS	Comment Date
Elected Officials		
Senator Brian Schatz	X	-
Senator Mazie Hirono	X	-
Representative Tulsi Gabbard	X	-
Lt. Governor Doug Chin	X	-
State Representative Kyle Yamashita	X	-
State Senator Rosalyn Baker	X	-
State Senator Gilbert S. C. Keith-Agaran	X	-
State Senator J. Kalani English	X	-
Mayor Arakawa	X	-
County Council Chairman Mike White	X	-
County Council Vice Chairman Robert Carroll	X	-
County Councilmember Alika Atay	X	-
County Councilmember Elle Cochran	X	-
County Councilmember Stacy Crivello	X	-
County Councilmember Don Guzman	X	-
County Councilmember Riki Hokama	X	-
County Councilmember Kelly King	X	-
County Councilmember Yuki Lei Sugimura	X	-
University of Hawai‘i		
UH Environmental Center	X	-
UH Water Resources Research Center	X	-
Libraries		
Legislative Reference Bureau Library	X	-
Hawaii State Library - Hawaii Documents Center	X	-
Kahului Public Library	X	-
Lahaina Public Library	X	-
Kihei Public Library	X	-
DBEDT - Research Division Library	X	-
UH Thomas H. Hamilton Library	X	-
UH at Hilo Edwin H. Mo‘okini Library	X	-
UH Kaua‘i Community College Library	X	-
UH Maui College Library	X	-
News Media		
Maui News	X	-
Honolulu Star Advertiser	X	-
Hawai‘i Tribune Herald	X	-
West Hawai‘i Today	X	-
The Garden Isle	X	-
Moloka‘i Dispatch	X	-

Agency	**Consulted on Draft EIS**	**Comment Date**
Honolulu Civil Beat	X	-
Private Companies, Organizations, and Individuals		
Tiare Lawrence	X	-
Kihei Community Association	X	-
Maui Tomorrow Foundation	X	-
Maui Sierra Club	X	-
Maui Electric Company, Ltd	X	-
Sandwich Isles Communications	X	-
Spectrum	X	-
A&B	X	-
HC&S / A&B Diversified Ag. Group	X	-
Maui Humane Society	X	-
Hawaiian Cement	X	-
Pacific Rim	X	-
Monsanto Company	X	-
PMG Holdings Inc	X	-
Mana LLC	X	-
Association of Hawaiians for Homestead Lands	X	-
DHHL Beneficiaries	X	-
Aha Moku o Maui Inc.	X	-
Sovereign Councils of the Hawaiian Homelands Assembly	X	-
Mike Atherton, Waikapu Properties, LLC	X	-
Randy Piltz, Office of the Mayor	X	-
Basil Oshiro, Aha Moku o Maui	X	-
Vernon Kalanikau, Aha Moku O Kula Makai	X	-
Kehau Filimoeatu	X	-
Esther Santos	X	-
Norman Abihai	X	-
Andrew Hatchie	X	-
Cheryl Moore, Waiohuli Undivided	X	-
Blossom Feiteira, Mokupuni Council/AHHL	X	-
Mark Adams, Community Interact	X	-
Commissioner Randy Awo	X	-
Adriel Menor, Maui Sports Car Club of America (Maui SCCA)	X	-
Stephen Groff, Maui RC Modelers	X	-
Clifton Hasegawa	X	-
Janai Kealoha, Hawaii Independent Energy, LLC	X	-
Kekoa Enomoto		12/24/18

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10.0 LIST OF PREPARERS

This EIS has been prepared by PBR HAWAII & Associates, Inc., 1001 Bishop Street, ASB Tower, Suite 650, Honolulu, Hawai‘i 96813. The staff involved in the preparation of this document is listed below:

Table 10-1: List of Preparers

Name	Title
Thomas Witten	Chairman
Selena Pang	Project Manager/Planner
Vincent Shigekuni	Senior Vice President
Ann Bouslog	Senior Planner/Economist
Brittany Wheatman	Planner
Kalei Perkins	Graphic Designer
Dionne Talia	Executive Assistant/Office Manager

Several key technical consultants were engaged to provide specific assessments of environmental factors for the Proposed Action. These consultants and their specialty are listed below:

Table 10-2: List of Consultants

Technical Study	Firm
Agricultural Feasibility Study	Agricon
Cultural Impact Assessment	‘Āina Archaeology
Historic Preservation Consultation	‘Āina Archaeology
Preliminary Engineering Report	Austin, Tsutsumi & Associates, Inc.
Traffic Impact Analysis Report	Austin, Tsutsumi & Associates, Inc.
Phase I Environmental Site Assessment	EnviroServices & Training Center, LLC
Economic and Fiscal Impact Assessment	PBR HAWAII & Associates, Inc.
Biological Resources Survey	Robert W. Hobdy
Air Quality Study	Terry A. Hayes Associates
Acoustic Study	Y. Ebisu & Associates

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