

FINAL ENVIRONMENTAL ASSESSMENT

Prepared in Support of Requests for a
State Land Use District Boundary Amendment, Community Plan Amendment,
and Change in Zoning

PU'UNENE HEAVY INDUSTRIAL SUBDIVISION

TMK: (2) 3-8-008: 019

Pu'unene, Maui, Hawai'i



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November 2012



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LIST OF ACRONYMS

A&B	Alexander & Baldwin
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai`i
AMP	Archaeological Monitoring Plan
AMSL	Above mean sea level
AQS	Air Quality Study
BMPs	Best Management Practices
BSM	Blackburn's Sphinx Moth
CATV	Cable Television
CC&Rs	Covenants, Conditions & Restrictions
CF	Cubic feet
CFS	Cubic feet per second
CIA	Cultural Impact Assessment
CIZ	Change in Zoning
COPC	Contaminants of potential concern
CPA	Community Plan Amendment
CWRM	Commission on Water Resource Management
CZMP	Coastal zone management program
DA	Department of the Army
DBA	District Boundary Amendment
dBA	Sound pressure level (A weighting filter)
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DNL	Day-Night Average Sound Level
DOH	Department of Health
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DPS	Department of Public Safety
DPW	Department of Public Works
DU	Decision units
DWS	Department of Water Supply
EA	Environmental Assessment
EAL	Environmental Action Level
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ETC	EnviroServices & Training Center
FONSI	Finding of No Significant Impact
GPD	Gallons per day
GPM	Gallons per minute
HARNG	Hawai`i Army National Guard
HAR	Hawai`i Administrative Rules
HC&S	Hawaiian Commercial & Sugar
HRS	Hawai`i Revised Statutes
IARII	International Archaeological Research Institute, Inc.
ITE	Institute of Transportation Engineers
IWS	Individual wastewater system
KMCP	Kihei-Makena Community Plan
LOS	Level-of-Service



LSB	Land Study Bureau
MCC	Maui County Code
MECO	Maui Electric Company
MEV	Malama Environmental
□g/m ³	Micrograms per cubic meter
uM	Micro-molar
MGD	Million gallons per day
MIP	Maui Island Plan
NAS	Naval Air Station
NRCS	Natural Resources Conservation Services
PAMP	Pu`unene Airport Master Plan
PD 10	Project District 10
PER	Preliminary Engineering Report
PM	Particulate matter
PPT	Parts per thousand
RCRA	Resource Conservation and Recovery Act
REC	Recognized environmental condition
RO	Reverse osmosis
SCS	Scientific Consultant Services
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
TNWRE	Tom Nance Water Resource Engineering
TPH-O	Total petroleum hydrocarbons as oil
UGB	Urban Growth Boundaries
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
V/C	Volume-to-capacity
VPH	Vehicles per hour

I. PROJECT OVERVIEW

A. OVERVIEW OF THE REQUEST

CMBY 2011 Investment, LLC (aka, CMBY), the owner of property identified by Tax Map Key (2) 3-8-008: 019, is requesting the necessary land use entitlements which would allow the property to be used for long-term heavy industrial purposes.

Assuming the entitlements are granted, CMBY plans to subdivide the 86-acre parcel and create a heavy industrial subdivision. Given the unstable and unpredictable behavior of the global economy and economic effects, the actual number and size of the subdivision lots, and the timeframe for filing an application for subdivision approval will be heavily influenced by prevailing market conditions at the time CMBY is ready to proceed with development.

The subject parcel is located on the Central Maui plain in the vicinity of the Old Pu`unene Airport. The site lies approximately 1.0 mile southeast of the intersection of Mokulele Highway, Mehameha Loop, and Kama`aina Road. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. Access from the highway to the site is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. [See Figure 1, Regional Location Map](#), [Figure 2, Aerial Location Map](#), and [Figure 3, Parcel Location Map](#).

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use](#)



[of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

The subject property is currently vacant and undeveloped. The parcel is located in the *State Agricultural District* and is designated for *Agricultural* uses by the Kihei-Makena Community Plan and Maui County zoning. [See Appendix A, Zoning and Flood Confirmation, Figure 12, State Land Use Districts, Figure 14, Kihei-Makena Community Plan, and Figure 15, Maui County Zoning](#). In addition, the project site lies within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#). The subject parcel does not fall within the limits of the Special Management Area (SMA) for the island of Maui. [See Figure 16, Special Management Area](#).

In order to establish the appropriate underlying land use designations for the proposed heavy industrial subdivision, the land owner is seeking a Land Use Commission District Boundary Amendment (DBA) from the *State Agricultural District* to the *State Urban District*, a Community Plan Amendment (CPA) from *Agriculture* to *Heavy Industrial*, and a Change in Zoning (CIZ) from *Agricultural* to *M-3, Restricted Industrial*. The granting of CMBY's request will also increase the limited inventory of lands that are currently available for purely heavy industrial use, as well as create new business and employment opportunities for island residents.

Since the proposed action will involve an amendment to a community plan and the use of State lands (proposed easements across State property), an environmental assessment (EA) has been prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) entitled [Environmental Impact Statements](#) and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) entitled [Environmental Impact Statement Rules](#). Based on consultation with the Maui Planning Department and the State Land Use Commission, the Maui Planning Commission will serve as the approving agency for the environmental review process.

B. PROJECT PROFILE

District: Pu`unene District, Island of Maui

Tax Map Key (TMK): (2) 3-8-008: 019



Project Name: Pu`unene Heavy Industrial Subdivision

Location: Approximately 1.0 mile southeast of the intersection of Mokulele Highway, Mehameha Loop, and Kama`aina Road

Site Area: 86.03 acres

Land Owner/Applicant: CMBY 2011 Investment, LLC
P.O. Box 220
Kihei, HI 96753

Contact: Blanca Lafolette
Phone: (808) 874-5263
Fax: (808) 879-2557

Planning Consultant: Chris Hart & Partners, Inc.
115 N. Market Street
Wailuku, Maui, HI 96793

Contact: Glenn Tadaki
Phone: (808) 242-1955
Fax: (808) 242-1956

Current Land Use Designations: State Land Use Classification – *Agricultural*
Kihei-Makena Community Plan – *Agriculture*
County Zoning – *Agricultural*

Flood Insurance Rate Map: Zone “X”, area of minimal flooding

Existing Land Uses: Vacant and undeveloped

Proposed Land Use: Heavy industrial subdivision

Site Access: Mokulele Highway, Kama`aina Road, South Firebreak Road, Lower Kihei Road

C. APPROVING AGENCY

Agency: Maui Planning Commission
c/o: Maui Planning Department
County of Maui
250 S. High Street
Wailuku, HI 96793



D. REQUIRED APPROVALS

The following permits and approvals will be needed prior to the implementation of the proposed action.

1. Environmental Review by the Maui Planning Commission
2. District Boundary Amendment from the State Land Use Commission
3. Community Plan Amendment from the Maui County Council
4. Change in Zoning from the Maui County Council
5. Work to Perform in the State Highway Right-of-Way from the State Dept. of Transportation
6. Well Drilling and Pump Installation Permits from the State Commission on Water Resource Management
7. Public Water System Approval from the State Dept. of Health, Safe Drinking Water Branch
8. Individual Wastewater System Approval from the State Dept. of Health, Wastewater Branch
9. National Pollutant Discharge Elimination System Permit from the State Dept. of Health, Clean Water Branch
10. Grubbing and Grading Permits, Construction Plans Approval, and Final Subdivision Approval from the Maui Department of Public Works, Development Services Administration

E. EARLY CONSULTATION

As part of the early consultation process for the preparation of the Draft EA, letters requesting comments on the proposed action were sent to following parties.

CONSULTED PARTIES

Federal Agencies

1. Dept. of the Army, Corps of Engineers
2. Dept. of Agriculture, Natural Resources Conservation Service
3. Dept. of the Interior, Fish & Wildlife Service

State Agencies

1. Dept. of Agriculture
2. Dept. of Business, Economic Development & Tourism, Office of Planning
3. Dept. of Hawaiian Home Lands
4. Dept. of Health, Clean Air Branch
5. Dept. of Health, Clean Water Branch
6. Dept. of Health, Indoor Noise & Radiological Health Branch



7. Dept. of Health, Safe Drinking Water Branch
8. Dept. of Health, Solid & Hazardous Waste Branch
9. Dept. of Health, Wastewater Branch
10. Dept. of Health, Maui District Health Office
11. Dept. of Land & Natural Resources, Land Division
12. Dept. of Land & Natural Resources, Maui Land Division
13. Dept. of Land & Natural Resources, Historic Preservation Division
14. Dept. of Transportation
15. Dept. of Transportation, Maui Highways Division
16. Office of Hawaiian Affairs

County Agencies

1. Dept. of Environmental Management
2. Dept. of Fire & Public Safety
3. Dept. of Parks & Recreation
4. Dept. of Planning
5. Dept. of Police
6. Dept. of Public Works
7. Dept. of Transportation
8. Dept. of Water Supply

Others

1. A&B Properties, Inc.
2. Hawaiian Cement
3. Hawaiian Commercial & Sugar Company
4. Hawaiian Telcom
5. Maui Electric Company, Ltd.
6. Kihei Community Association
7. LeSea Broadcasting Corp.

A typical early consultation letter, as well as comment and response letters associated with this process is included in [Appendix R, Early Consultation Letters](#). As indicated in the early consultation letter, a Request for Use of State Lands was filed with the State Department of Land and Natural Resources (DLNR) to request access easements for the subject property. [See Appendix D-1, Request for Use of State Lands \(Original\)](#). The Request for Use of State Lands has since been amended based on consultation with the DLNR. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The Maui Planning Commission is serving as the approving agency for the environmental review process based on consultation with the State Land Use Commission and the Maui Planning Department.



II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The subject parcel is approximately 86 acres and is identified by TMK (2) 3-8-008: 019.

The property is located about 1.0 mile southeast of the intersection of Kama`aina Road, Mehameha Loop, and Mokulele Highway, a divided, four-lane facility linking South and Central Maui. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. Access from the highway to the site is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. [See Figure 1, Regional Location Map](#), [Figure 2, Aerial Location Map](#), [Figure 3, Parcel Location Map](#), and [Figure 4, Site Photographs and Reference Map](#).

B. EXISTING SITE CONDITIONS AND LAND USE

The subject parcel is owned by CMBY 2011 Investment, LLC and is vacant and undeveloped.. [See Appendix B, Topographic Survey Map](#) and [Figure 4, Site Photographs and Reference Map](#)

During World War II, the site was part of the Pu`unene Naval Air Station and was used for military purposes. In more recent times, the property was used for hog farming and scrap metal storage. No productive use or activity has occurred on the site since these activities were discontinued in 2007.

The subject parcel is in the *State Agricultural District* and is designated *Agriculture* by the Kihei-Makena Community Plan. The property is also zoned for *Agricultural District* use by the County of Maui. [See Appendix A, Zoning and Flood Confirmation](#), [Figure 12, State Land Use Districts](#), [Figure 14, Kihei-Makena Community Plan](#), and [Figure 15, Maui County Zoning](#).



The project site also lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#). The subject parcel does not fall within the limits of the Special Management Area for the island of Maui. [See Figure 16, Special Management Area](#).

C. REASONS JUSTIFYING THE REQUEST

On the island of Maui, about 489 acres of land has been zoned for heavy industrial use. In Central Maui, approximately 442 acres have been zoned for this purpose. Much of this heavy industrial zoned land has already been built upon or is being used as work or storage yards. The minimal amount of land that is available is located in areas that are considered unsuitable for heavy industrial use due to proximity impacts to adjacent residential and commercial development. In this case, the highest and best use of this land is for business use, which is currently allowed by heavy industrial zoning.

There has not been any purely heavy industrial development in Central Maui for over a decade. During this period, the focus has been on the light industrial market with an emphasis on commercial retail/office use.

With the exception of the proposed project, no heavy industrial projects are proposed on Maui at this time. With the limited supply of heavy industrial land that is currently available, the proposed heavy industrial subdivision is expected to attract a significant amount of interest. Since there is no residential or commercial development in the vicinity of the site, the proposed project is ideally situated for heavy industrial use and its centralized location provides convenient access to Kahului Harbor and the Kahului Airport.

The subject property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is located in proximity to existing heavy industrial uses at the Central Maui Baseyard and the Hawaiian Cement Quarry. The project site is also located in the vicinity of Project District 10 (Old Pu'unene Airport), a 561-acre recreational and industrial expansion area included in the Kihei-Makena Community Plan which is intended to meet future recreational needs and provide areas for industrial activities whose locations are better suited away from developed urban areas. Within the Project District 10 lies the 222-acre Pu'unene Airport Master Plan



area which is currently in the process of being updated by the County of Maui to provide space for future public and recreational uses. [See Figure 7, Pu`unene Airport Master Plan - Concept Land Uses.](#)

The proposed project is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase lots and build new facilities or expand their current operations.

D. DESCRIPTION OF THE PROPOSED ACTION

1. Request for Land Use Entitlements

The subject property encompasses 86 acres and is identified by TMK (2) 3-8-008: 019. The property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map.](#) The subject parcel does not fall within the limits of the Special Management Area for the island of Maui. [See Figure 16, Special Management Area.](#)

The land owner, CMBY 2011 Investment, LLC (aka, CMBY), is requesting the following land use entitlements which would allow the site to be utilized for heavy industrial purposes: 1) a Land Use Commission District Boundary Amendment (DBA) from the *State Agricultural District* to the *State Urban District*; 2) a Community Plan Amendment (CPA) from *Agriculture* to *Heavy Industrial*; and 3) a Change in Zoning (CIZ) from *Agricultural* to *M-3, Restricted Industrial*. The State Land Use Commission (SLUC) is the decision-making body for the DBA, while the Maui County Council will serve as the decision-making authority for the CPA and CIZ.

On September 21, 2012, the Maui County Council approved a bill for *M-3, Restricted Industrial District* zoning. The bill was signed by the Mayor on September 24, 2012 and was designated Ordinance No. 3977. It should be noted that CMBY's application for the CIZ was initially prepared on the basis of seeking a zoning change from *Agricultural* to *M-2, Heavy Industrial*. However, with the recent adoption of *M-3, Restricted Industrial* zoning, the CIZ application has been amended to request a change to *M-3* zoning.



Generally, *M-3, Restricted Industrial* zoning encompasses those uses that involve the manufacture, processing, storage, or treatment of goods from raw materials. The intent of *M-3* zoning is to provide for manufacturing and nuisance industries and exclude retail and office uses. Some of the uses permitted under *M-3* zoning include: canneries; factories; manufacturing facilities; major utility facilities; landfills, lumber yards; machine shops; rock quarries; and material recycling/processing facilities. The minimum lot size under *M-3* zoning is 10,000 square feet, while the minimum lot width is 75 feet and the maximum building height is 90 feet. Side and rear setbacks are zero feet or the same as the adjoining zoning category whichever is greater. [See Appendix C, *M-3 Restricted Industrial Zoning Regulations*.](#)

A Petition for the DBA will be filed with the SLUC after the publication of the Final EA and Finding of No Significant Impact (FONSI). A consolidated application for the CPA and CIZ was filed with the County of Maui on April 16, 2012 and is being held in abeyance until the processing of the DBA has been completed. Assuming the DBA is granted; the Maui Planning Commission will review the CPA and CIZ and provide their recommendations to the Maui County Council which will then proceed to take action on the land use requests. The approval of the DBA, CPA, and CIZ will provide the land owner with the necessary entitlements to develop and utilize the subject property for heavy industrial purposes.

2. *Proposed Action*

In light of the uncertain volatile nature of the global economy, the actual number and size of the subdivision lots, and the timeframe for filing an application for subdivision approval, will be heavily influenced by prevailing market conditions at the time CMBY is ready to proceed with development.

The proposed land development plan for the proposed heavy industrial subdivision currently calls for subdividing the 86-acre subject parcel to provide 28 developable lots on 66 acres of land including 10 lots ranging in size from 0.5-acre to 1-acre, five lots ranging from over 1-acre to 2-acres in size, and the remaining 13 lots ranging from over 2-acres to 20-acres in size. Preliminarily, about 9 acres will be set aside for a series of drainage retention basins along the western edge of the parcel, while approximately 11 acres have been designated for the subdivision's internal roadway system. [See Figure 5, *Proposed Land Development Plan* and Figure 5A, *Conceptual*](#)



[Site Plan](#). In addition, subdivision street trees will be planted in accordance with Chapter 12.24 of the Maui County Code (*Landscape Planting and Beautification*).

[See Figure 5B, Conceptual Landscape Site Plan](#). Due to the unpredictable nature of the global economy, the preceding plans are subject to change based on market conditions at the time of actual development.

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

Subdivision improvements to be provided by the land owner and improvements that will be the responsibility of individual lot owners are noted below.

1. The subdivision's water system will be privately owned and maintained by an association of lot owners. The private water system will include drinking and non-drinking water wells, booster pumps, and a reverse osmosis purification system, as well as water transmission lines, manholes, and laterals to each lot. The drinking water well will provide water for domestic use, while the non-drinking water well will provide water for irrigation and fire protection.

As lots within the subdivision are developed, each lot owner will be responsible for tying in to the subdivision's water system by connecting to the lateral on their lot. No additional wells will be permitted.

2. As noted in the Draft EA, the subdivision's master wastewater system originally included sewer transmission lines, manholes, and laterals which would convey wastewater flows to a central leach field. Lot owners would be responsible for installing an individual wastewater system (IWS) on their lots and connecting to the master system which would be privately owned and maintained by the Lot Owner's Association.



However, in commenting on the Draft EA, the State Department of Health (DOH) indicated that it will not allow multiple IWS to discharge into a central leach field and that a separate leach field must be provided for each IWS. [See June 19, 2012 letter – Appendix S, Draft EA Comment Period.](#)

As a result, the wastewater treatment plan for the project has been modified to call for the installation of an IWS consisting of an aerobic treatment unit and leach field for each lot. As indicated by the DOH, this type of IWS can be used within 1,000 feet of drinking water sources and wells. The cost and installation of the IWS will be borne by individual lot owners as they develop their lots in the future.

3. The subdivision's drainage system will be privately owned and maintained by the Lot Owner's Association. The private drainage system will include storm water retention basins and storm water transmission lines, manholes, and laterals to each lot. The retention basins will be located along the western edge of the project site.

As lots within the subdivision are developed, each lot owner will be responsible for tying in to the subdivision's drainage system by connecting to the lateral on their lot. Depending on the type of industrial activity on each lot, the lot owner may be required to install appropriate filtering devices to ensure that groundwater is not impacted by pollutants contained in runoff.

4. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. The subdivision's internal roadways will be privately owned and maintained by the Lot Owner's Association.

As lots within the subdivision are developed, each lot owner will be responsible for installing a driveway to connect to the subdivision road fronting their parcel.

5. Electrical, telephone, and CATV lines will be extended to the subdivision from the nearest available service connection. Underground utility lines will be installed within the subdivision's streets and extended to each lot via utility boxes.

As lots within the subdivision are developed, each lot owner will be responsible for their own power, phone, and CATV service by hooking up to the utility boxes on their lot.

6. Landscaping and irrigation for subdivision common areas will be privately owned and maintained by an association of lot owners. Underground irrigation lines will be installed within the subdivision's streets and service laterals will be provided for each lot.

As lots within the subdivision are developed, each lot owner will be responsible for their own landscaping and for tying into the subdivision's irrigation system by connecting to the lateral on their lot.



In addition to its common area landscaping and irrigation system, the subdivision's water, wastewater, drainage, and internal roadway systems will be privately owned and maintained by the Lot Owner's Association. The proposed subdivision improvements shall conform to, or be consistent with, all applicable Federal, State, and County regulations. Provisions for compliance shall be set forth in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision.

All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the CC&Rs and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

The land owner and the Maui Department of Environmental Management (DEM) have had meetings to discuss the possibility of establishing a construction and demolition (C&D) landfill within the proposed subdivision since an existing privately-owned C&D facility at Ma`alaea is nearing capacity and has approximately two years of remaining space. Due diligence work to assess the feasibility of proceeding with the C&D landfill (a permitted use under *M-3* zoning) is currently underway. Should plans for the C&D landfill move forward for implementation, the design, construction, operation, and maintenance of the facility will comply with all applicable regulatory and environmental rules and regulations for its development.

It is important to note that final lot sizes in the proposed heavy industrial subdivision shall be determined by the types of land uses that are proposed in the subdivision and the forecasted demand for the lots based on prevailing market projections approximately six months prior to filing an application for preliminary subdivision approval with the County's Development Services Administration

The preliminary sales price for subdivision lots is projected to be \$20 per square foot in 2011 dollars. Final sales prices will be based upon market conditions at the time final subdivision approval is granted, and would reflect any conditions which may be imposed by the SLUC or the County of Maui as a result of the entitlement process.

In 2011, it was estimated that the land use and subdivision approval process could take approximately four to five years. As such, subdivision construction could begin in 2016 or commence as early 2015. Preliminary subdivision construction costs are



projected to be \$20 million in 2011 dollars, while the forecasted construction period is about 30 months.

The subsequent lot build-out period for the subdivision is expected to last approximately 10 years. An annual average of 65 direct and indirect Maui jobs is projected during the subdivision's construction period, while an annual average of 142 direct and indirect Maui jobs is forecasted for the subdivision's lot build-out phase.

E. ALTERNATIVES

1. No Action Alternative

Analysis: Under the "No Action" alternative, the current agricultural land use classification and physical condition of the subject parcel would be maintained and the property would continue to be under utilized in terms of its potential highest and best use. Since no development would occur under this alternative, the present physical and man-made environment would not be affected and no new or additional demands for public services and infrastructure would be required. Because the "No Action" alternative would preclude the development of the site for heavy industrial use, the availability of land for purely heavy industrial purposes would continue to be in very short supply. As such, the "No Action" alternative is not a viable option and was dropped from consideration.

2. Deferred Action Alternative

Analysis: Deferring development until some point in the future is a variation of the "No Action" alternative as existing conditions would be temporarily maintained. However, future market conditions (poor economy, high interest rates, increased labor and material costs) could affect the feasibility and timing of proceeding with the project and is therefore not practicable. Accordingly, the "Deferred Action" alternative was deemed unfeasible as it does not address the current shortage of heavy industrial-zoned land on Maui.



3. Alternative Locations

Analysis: In Central Maui, approximately 442 acres has been zoned for heavy industrial use. Aside from the HC&S sugar mill in Pu`unene and the future power generation plant site for Maui Electric Company, the remaining 337 acres, is situated around Kahului Harbor and the Kahului Airport. These lands are used for harbor and airport facilities and operations and are not considered to be available to the market. Other heavy industrial areas in Central Maui include the Wakea Industrial Subdivision, Airport Industrial Subdivision, as well as portions of The Millyard and Maui (Kahului) Industrial Subdivision. In addition to the area around Hobron Avenue and near the corner of Kahului Beach Road and Ka`ahumanu Avenue, the land underlying the Queen Ka`ahumanu Center, Maui Mall, and the former Maui Land and Pineapple Company cannery is zoned for heavy industrial use. Most of these areas have been improved with commercial and light industrial uses or are reserved for future development.

The market availability of lands suitable for heavy industrial development is very limited. The existing inventory of heavy industrial-zoned land that is available for sale consists of 16 acres at five sites in Kahului and two locations in Wailuku. The seven sites are located in areas with existing public water, sewer, drainage, and roadway systems. However, these sites are all located in areas deemed unsuitable for heavy industrial uses as adjacent residential and commercial development would likely object to the operational effects (e.g., noise, odor, dust) associated with heavy industrial activities.

With the exception of the subject parcel, there are no other suitable sites that are currently available for the development of a purely heavy industrial subdivision.

4. Alternative Land Uses

Analysis: Although it may be possible to reclassify the subject property for a different type of land use (e.g., residential, commercial) or combination of land uses, such a change would be inconsistent with existing and planned future land uses in the area and would also alter the rural and agricultural-industrial



character of the project site and surrounding area. Depending on the type and intensity of the land use, it could have beneficial effects, affect the environment, and place greater demands on public services and infrastructure. For example, the use of the site for commercial purposes could produce economic benefits in terms of job creation and commercial growth but could also generate short and long-term impacts attributable to increased traffic, water use, and storm water runoff.

In addition to addressing the need for heavy industrial space on Maui, the proposed project is consistent with existing and planned heavy industrial land uses in the vicinity such as the Central Maui Baseyard, Hawaiian Cement Quarry, Project District 10 (Old Pu`unene Airport area) and the *draft* Maui Island Plan.

In light of the foregoing, reclassifying the subject property for a different land use or a combination of different land uses was not deemed feasible.

5. Design Alternative

Analysis: During the preliminary planning and design phase of the project, the applicant considered various criteria to create and evaluate different layouts for the proposed subdivision. For example, the locations of some of the smaller subdivision lots and the alignment of the subdivision's internal roadways have evolved from that of an earlier site plan. [See Figure 6, Earlier Concept Land Plan.](#)

The site planning and design process examined existing topography, soils, drainage patterns, and infrastructure. Spatial relationships, land use, engineering, and infrastructure requirements, lot density, sizes and configurations, traffic and access considerations, and development costs and marketability were examined during this process as well. While there are other plans that could be examined, the proposed subdivision layout is considered the most viable in terms of meeting the applicant's plans for the heavy industrial use of the site while addressing regulatory and infrastructure requirements for the project.



Under current County zoning, the minimum size requirement for an *M-3, Restricted Industrial* lot is 10,000 square feet. For example, if 66 acres of the subject parcel's 86 acres were subdivided into 10,000 square foot lots, a total of 287 lots would be created. If the 66 acres were subdivided into 0.5-acre lots, a total of 132 lots would result. Smaller lot sizes would result in greater site density as the number of lots within the subdivision would increase. A higher density development could increase traffic and trigger the need for additional public services and infrastructure improvements. A potential benefit of having smaller albeit a greater number of lots is that there would be more opportunities to purchase fee simple, heavy industrial land due to the corresponding increase in inventory.

Conversely, increasing lot sizes would produce fewer but larger lots. A potential benefit of having larger lots is that site density would be reduced and demands upon infrastructure and public services would be minimized. However, a lower density development would also require that certain fixed development costs (e.g., design, planning, and engineering studies; off-site infrastructure costs), be amortized over fewer lots which would increase the cost of a lot and its selling price.

6. Agricultural Use

Analysis: The 86 acres comprising the subject parcel represents only 0.0002 percent of all lands in the State Agricultural District on the island of Maui. The soils underlying the property are poorly textured and extremely rocky or stony. This land has an overall productivity rating of "E" (the lowest) and the site is Unclassified (residual land) by the Agricultural Lands of Importance to the State of Hawai'i. The poor soil quality and low productivity rating of the property preclude any feasible agricultural development on the site. Agricultural activities that have occurred on the site in the past include sugar cane cultivation by former land owner HC&S and hog farming by former lessee Maui Factors. No agricultural use has occurred on the site since 2007.

If sugar cane cultivation or a similar agricultural activity were to continue on the site, potential impacts typically associated with this type of use include noise, dust, and smoke from planting and harvesting operations. Given its



seasonal nature, and the property's remote location and distance from the closest residential development, the potential effects of this kind of farming activity on the surrounding area are temporary in nature and are not considered to be adverse.

Since the subject parcel is not being used for agriculture, no agricultural jobs or revenues will be affected by the development of the proposed project. In addition, although the proposed project would reclassify agricultural lands for heavy industrial use, the businesses in the proposed subdivision are expected to generate a significant, ongoing revenue stream which would benefit the State and County through job creation; additional direct and indirect sales expenditures; and increased tax revenues and fees.

In light of the foregoing, the proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for agricultural activities. In addition, when considering the highest and best use of the property in context of the limited supply and latent demand for land that is available for purely heavy industrial purposes, the "Agricultural Use" alternative is not a viable option and was dropped from consideration.

7. Preferred Alternative

Analysis: The proposed project addresses the need for heavy industrial space in Central Maui and is also consistent with existing and planned heavy industrial land uses in the area. For example, the Kihei-Makena Community Plan description of Project District 10 (Old Pu`unene Airport area) states that "*approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use.*" The subject parcel is also included within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan (MIP). The MIP notes that the proposed heavy industrial use of the property is "*compatible with surrounding agricultural operations*" and "*represents a logical expansion of industrial land use in the area*" and that the "*area's location, midway between Kihei and Kahului, makes it an ideal site to serve the island's long term heavy industrial needs.*"



Currently, the proposed project is the only heavy industrial development planned on Maui. In addition to being well received, it is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase fee simple lots and build new facilities or expand their current operations. Furthermore, the development of the proposed subdivision is expected to generate significant expenditures by the land owner, as well as by secondary owners and those involved in the separate development of the heavy industrial lots. These investments are expected to have a beneficial impact upon both State and County economies on a broad scale and in a multitude of ways.

Since future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. However, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices and emergency response plans that are specific to the heavy industrial use on their lots. In addition, project-specific mitigation measures, and mandatory compliance with all applicable regulatory requirements will help minimize potential short and long-term environmental impacts.



III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

Existing Conditions. The subject parcel is bounded by Project District 10 (PD 10) and the Pu`unene Airport Master Plan (PAMP) area on the west, and lands which are designated for *Agricultural* uses (by the State and County) to the north, east, and south. HC&S sugar cane fields border the parcel on the north, east, and south, while the Hawaiian Cement facility lies approximately 0.2 mile to the east of the site. Existing uses within PD 10 include the Maui Raceway Park (drag strip) and other recreational motor sport facilities, a facility for radio-controlled model airplanes, and the Hawaii Army National Guard (HANG) armory.

The subject parcel is located in an area characterized by sugar cane cultivation, as well as industrial, recreational, and public/quasi-public uses. Industrial uses in the area include the Hawaiian Cement Quarry, 0.2 mile to east, and the Central Maui Baseyard, 1.3 miles to the north. Recreational uses include the Maui Raceway Park, 0.4 mile to the west, while public/quasi-public uses include the HANG Armory, 0.7 mile to the west, and the Maui Humane Society, 1.1 miles to the northwest.

There is no residential development in the immediate vicinity of the proposed project. The closest residential areas are in Kihei, 2.3 miles to the south; Ma`alaea, 3.6 miles to the southwest; Kahului, 4.0 miles to the north; and Pukalani, 6.4 miles to the east.

Potential Impacts and Mitigation Measures. The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development.

In 1995, the County of Maui prepared a Pu`unene Airport Master Plan (PAMP) for 222 acres of land in the vicinity of the Old Pu`unene Airport. The land for this area was provided by the State of Hawaii for public and recreational purposes and was



transferred to the County of Maui via Executive Order 4024 in November 2003. The PAMP area lies within PD 10 and is currently in the process of being updated to provide space for future public and recreational purposes. [See Figure 7, Pu`unene Airport Master Plan – Concept Land Uses.](#)

As noted in the Kihei-Makena Community Plan (1998), PD 10 encompasses 561 acres and was established with the purpose of creating a master-planned, expansion area which would meet future recreational (motor sports) needs and provide space for industrial activities (including government facilities) whose locations are better suited away from urban areas. [See Figure 14, Kihei-Makena Community Plan.](#)

The subject property is located within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan (MIP). The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* MIP and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan.](#)

Approximately 939 acres of land surrounding the subject parcel have been included in the Pulehunui Master Plan (August 2012), a cooperative land use and infrastructure development planning document that has been prepared for the DHHL and DLNR for the future development of their lands in the adjacent area. [See Figure 7A, Areas of Potential Future Development.](#) The master plan envisions land uses that support commercial and industrial uses alongside quasi-public and open space areas.

Within this area, the State Department of Hawaiian Home Lands (DHHL) owns approximately 184 acres of land bordered by Mehamaha Loop which is designated for future commercial development. The DHHL also owns 646 acres to the south of the subject parcel – TMK (2) 3-8-008: 034 – of which 100 acres has been included in the Pulehunui Master Plan. Although Parcel 34 is zoned for agricultural homestead lots by the DHHL, the site is neither conducive for residential use or farm dwellings because of prevailing dust and wind conditions. As part of the Pulehunui Master Plan, the DHHL is planning to develop a wastewater treatment plant on the 100-acre portion of Parcel 34 (personal communication with Julie Ann Cachola - DHHL, July 26, 2012).



The State Department of Public Safety's (PSD) plans for the future development of the Maui Prison (aka, Maui Regional Public Safety Complex), which is proposed within PD 10, have been delayed due to the lack of government funding and the absence of infrastructure (*i.e.*, water, sewer) to support this project. In May 2012, the County of Maui recommended that the future Prison be moved from its proposed location near Mokulele Highway to a new site (on DLNR lands) approximately one mile east of the highway (personal communication with Julie Ann Cachola - DHHL, July 26, 2012).

The implementation of the Pulehunui Master Plan will be a long-term process that will involve three phases and take at least 20 years.

The closest residential projects that are planned or approved for future development are in North Kihei, approximately 2.3 miles south of the project site. A&B Properties is proposing to develop a 600-unit residential subdivision on approximately 94 acres of land in North Kihei. Maui County Council action on the land use entitlements for this project is currently pending. In March 2011, the Maui County Council approved Kaiwahine Village, a 120-unit multi-family housing project abutting the Hale Pi'ilani Subdivision. Construction of this project has yet to commence. [See Figure 7A, Areas of Potential Future Development.](#)

As previously noted, existing heavy industrial uses in the project area include the Hawaiian Cement Quarry and the Central Maui Baseyard while future industrial uses include those uses established for PD 10. As indicated by the Kihei-Makena Community Plan (1998), "*The objective of this project district is to establish a master planned recreational and industrial (emphasis added) expansion area to meet future recreational needs and to provide areas for industrial (emphasis added) activities, including government facilities, whose locations are better suited away from urban areas.* In its description of PD 10, the Community Plan also states that "*Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use.*"

The subject parcel is located within the proposed UGB for the *draft* MIP which indicates that the subject parcel is "*compatible with surrounding agricultural operations*" and "*represents a logical expansion of industrial land use in the area*" and



that the “*area’s location, midway between Kihei and Kahului, makes it an ideal site to serve the island’s long term heavy industrial land use needs.*”

The subject parcel is ideally situated for heavy industrial activities given existing and future land uses in the area, its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport. In addition, the use of the subject parcel for heavy industrial purposes is consistent with existing heavy industrial uses in the area and is compatible with land uses for the site that are set forth by the *draft* MIP and the Community Plan.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon surrounding land uses.

2. Climate, Topography and Soils

Existing Conditions. In Hawaii, the annual and daily variation of temperature depends to a large degree on elevation above sea level, location and distance inland, and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. Historical data from the project area indicates that the average daily minimum and maximum temperatures for this area of Maui are 63°F and 86°F, respectively.

Maui lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Because the project area is located in the valley between Haleakala and the West Maui Mountains and the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. The monthly mean wind speed and prevailing wind direction statistics for Kahului Airport indicate that ventilation is good throughout the year with monthly mean speeds ranging from about 11 to 15 miles per hour. Wind speeds in summer tend to be strongest. The monthly prevailing wind direction year round is from the northeast.



Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The climate of the project area is relatively dry. Historical records from the project area show that this area of Maui averages about only 13 inches of precipitation per year, with the summer months being the driest.

The subject parcel slopes in an easterly to westerly direction with on site elevations ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent. [See Appendix B, Topographic Survey Map.](#)

The Waiakoa-Keahua-Moloka'i soils are associated with the subject parcel. These soils are found on low uplands and are characterized by moderately deep and deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured subsoil

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (1972)*, prepared by the United States Department of Agriculture, the following soil series are primarily associated with the subject parcel. [See Figure 8, Soil Classifications.](#)

- Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). This series is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes which is found on smooth, low uplands that are gently sloping to moderately steep except that WID2 is eroded and stones cover 3 to 15 percent of the surface. Runoff is medium and the erosion hazard is severe. This soil is used for pasture and wildlife habitat.
- Alae cobbly sandy loam, 0 to 3 percent slopes (AcB). This series consists of excessively drained soils on alluvial fans on the island of Maui. They are nearly level to gently sloping. Most areas have cobblestones on the surface. On this soil, runoff is slow and the erosion hazard is slight. This soil is used for sugar cane and pasture.

Potential Impacts and Mitigation Measures. Site work for the subdivision's basic infrastructure (e.g. water, drainage, roadways) is expected to be minimal and will be the responsibility of the land owner. As lots within the subdivision are developed, each lot owner will be responsible for the grubbing and grading on their lots. Modifications to the existing landform will unavoidably occur as a result of this work and is not expected to result in any adverse impacts. To the extent possible, earthwork will be kept to a minimum and cut and fill quantities will be balanced to reduce site work costs and maintain existing drainage patterns. In addition, erosion



control measures and Best Management Practices will be implemented in accordance with the Maui County grading ordinance to minimize soil loss and sedimentation during construction.

Provisions for the development of subdivision lots, including conformance with all applicable government requirements, shall be set forth in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision and maintained by the association of subdivision lot owners.

The proposed project is not expected to result in any adverse long-term impacts which would affect the landform.

3. Water Bodies

Existing Conditions. An HC&S irrigation reservoir (Reservoir 90) lies along Lower Kihei Road, just north of, and across the street from, the subject parcel. An earthen embankment dam (State Dam ID MA-0089) regulated by the State Department of Land and Natural Resources (DLNR) holds the irrigation water within the reservoir. The dam is approximately 19 feet tall and 1,250 feet long and is considered small based on dam size criteria – less than 1,000 acre/feet of storage and less than 40 feet in height. A Limited Visual Dam Safety Inspection Summary Report for the dam was prepared by the U.S. Army Corps of Engineers (USACE) and the DLNR in May 2006 based on an inspection the previous month. The report indicated that “There is no immediate threat to the safety of the dam”.

Aside from the reservoir, the closest water bodies in the vicinity are the Pacific Ocean and the Kealia Pond National Wildlife Refuge which are located to the southwest of the subject property. The wildlife refuge encompasses 691 acres and is one of the few natural wetlands in Hawai`i. Kealia Pond serves as a settling basin for a 56 square mile watershed that experiences seasonal intermittent flooding during winter months and drier conditions during the summer. During certain times of the year, the refuge supports a large number of the endangered A`eo or Hawaiian Stilt (*Himantopus mexicanus knudseni*) population (U.S. Fish & Wildlife Service, March 2010). At its closest point, the subject parcel is approximately 1.75 miles from Kealia Pond and about 2.25 miles from the ocean.



During the early consultation phase for the preparation of the Draft EA, the Corps of Engineers indicated that a Department of the Army (DA) Permit must be obtained prior to undertaking any construction, dredging or other activity that affects or occurs in, over, or under navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of 1899. USACE also indicated that a DA Permit must be obtained (prior to construction) for the placement or discharge of dredged and/or fill material into waters of the U.S.(including wetlands) pursuant to Section 404 of the Clean Water Act of 1972. For non-tidal waters, the lateral limits of the Corps jurisdiction extend to the Ordinary High Water Mark or the approved delineated boundary of any adjacent wetlands. [See Appendix R, Early Consultation Letters](#).

Potential Impacts and Mitigation Measures. There are no wetlands, streams, ponds, or other water bodies on the subject parcel. The HC&S irrigation reservoir to the north of the site will not be affected by the proposed project. Runoff within the subdivision will be conveyed to a series of retention basins along the western edge of the site. The drainage system for the subdivision will be designed to accommodate the incremental increase in runoff generated by the development of the entire site and is designed to have no adverse effect on adjacent and downstream properties.

In a letter dated June 19, 2012, USACE indicated that the proposed project will not require a Department of the Army permit since it does not involve any navigable waters of the U.S. subject to the Corp's jurisdiction pursuant to Section 10 nor would it involve the placement and/or discharge of dredged and/or fill material into waters of the U.S. (including wetlands) pursuant to Section 404. [See Appendix S, Draft EA Comment Period](#).

4. Natural Hazards

Existing Conditions. The Federal Emergency Management Agency's flood insurance rate map for this part of the island (Panel Number 1500030580E dated September 25, 2009), indicates that the subject property is situated in Flood Zone "X" which represents areas of minimal flooding. [See Figure 9, Flood Insurance Rate Map](#). In addition, the evacuation maps prepared by the Maui County Civil Defense Agency reveal that the project site does not lie in an area which is subject to tsunami evacuation. The closest Civil Defense warning siren in the area is located about two miles to the southwest near the intersection of North Kihei Road and South Kihei



Road.

Seismic hazards are events related to ground shaking events such as landslides, ground cracks, rock falls, and tsunamis. A system of classifying these hazards has been developed by engineers, seismologists, and architects on the basis of the expected strength of ground shaking and the probability of the shaking occurring within a specified time. The results were included in the Uniform Building Code seismic provisions which contains six seismic zones ranging from 0 (no chance of severe shaking in a 50-year interval) to 4 (10 percent chance of severe shaking within a 50-year interval). The shaking is quantified in terms of g-force, the gravitational acceleration of the earth.

Based on a re-evaluation of seismic hazards by the United States Geological Service in 1992, the seismic hazard for Maui County falls within Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.

Potential Impacts and Mitigation Measures. Pursuant to recommendations made by the State Civil Defense agency in their review of the Draft EA ([See August 2, 2012 letter – Appendix S, Draft EA Comment Period](#)), the applicant will work with the agency to install one omni-directional 121 db(c) siren to provide coverage for the project area.

The subject parcel lies in a low risk flood hazard area and is located well beyond the boundaries of the tsunami evacuation zones for this part of the island. The proposed project will not alter any parameters for defining flood hazard areas or tsunami evacuation zones nor will it contribute toward inland or coastal flooding or impact downstream and adjacent properties. The potential for seismic damage is minimal because of the 10 percent probability that 1/5 of the ground acceleration rate will be exceeded during an earthquake.

5. Flora

Existing Conditions. LeGrande Biological Surveys, Inc. carried out a botanical field survey of the project area in August 2011. The primary objectives of the field survey



were to:

1. Inventory the flora;
2. Provide a general description of the vegetation on the project site;
3. Search for threatened and endangered species as well as species of concern; and
4. Provide recommendations regarding potential impacts to the biological resources of the area in regard to the proposed development of the survey area.

In addition to the subject parcel, two proposed access easements were surveyed during field work. The findings of the field survey were presented in a Botanical Resource Assessment. [See Appendix E, Flora Survey.](#)

The subject parcel is characterized by Dry Kiawe/Bufelgrass vegetation. A total of 50 plant species were observed within the survey area of which 44 species, or 88 percent, are alien (introduced) and 6 species, or 12 percent, are indigenous (native to the Hawaiian Islands and elsewhere).

The following summary describes the plants that were observed in these areas.

Subject Parcel. The dominant onsite vegetation is a kiawe (*Prosopis pallida*)/buffelgrass (*Cenchrus ciliaris*) grassland with a koa haole (*Leucaena leucocephala*) scrub transition between the southern boundary of the property. The northern section appears to have been recently graded with large boulder piles near the gate entrance. Several other weedy native species were scattered throughout the property including: Jimson weed (*Datura stramonium*), cheese weed (*Malva parviflora*), Lion's ear (*Leonotis nepetifolia*), hairy spurge (*Chamaesyce hirta*), *Amaranthus* sp., and golden crownbeard (*Verbesina encelioides*). The few native species that were observed within the survey area include three indigenous species: ilima (*Sida fallax*), popolo (*Solanum americanum*), and uhaloa (*Waltheria indica*).

State Easements. This area encompasses proposed access easements along Kama`aina Road (State owned), South Firebreak Road (State & privately owned), and Lower Kihei Road (privately owned), as well as adjacent sugar cane fields and an HC&S irrigation reservoir. Dominant roadside weeds are buffel grass and koa haole



shrubs. Other species scattered along the roadside and reservoir embankment include partridge pea (*Chamaecrista nictitans* subsp. *patellaria* var. *glabrata*), swollen finger grass (*Chloris barbata*), castor bean (*Ricinus communis*), manienie (*Cynodon dactylon*), kaliko (*Euphorbia heterophylla*), graceful spurge (*Chamaesyce hypericifolia*), obscure morning glory (*Ipomoea obscura*), and smooth rattlepod (*Crotalaria pallida*).

Reservoir Easement. This area encompasses a proposed alternate access easement along the north and east sides of the irrigation reservoir. Monkeypod (*Samanea saman*) and Siris (*Albizia lebbek*) are the dominant tree species around the east boundary of the easement mixed with a Koa haole scrub. At the north end of the reservoir a portion of the easement crosses over a drainage canal. Large Java plum (*Syzygium cumini*) trees dominate the area around the canal. During the survey, `auku`u (Black-crowned night heron) were observed in the Java plum trees. Several other plant species were noted in the area including two indigenous species: milo (*Thespesia populnea*) and hala (*Pandanus tectorius*), as well as Guinea grass (*Panicum maximum*), and banana (*Musa* sp).

As the easement heads north from the subject parcel it crosses a road leading to the Hawaiian Cement Plant and then heads west into sugar cane fields. A drainage ditch near the area where the easement turns west (past the reservoir) contains some plant species that are usually found near standing or running water. They included one native species `ae`ae (*Bacopa monnieri*) and several non-native species such as water morning glory (*Ipomoea aquatic*), kalo (*Colocasia esculenta*), false daisy (*Eclipta prostrata*), and vasey grass (*Paspalum urvillei*).

Potential Impacts and Mitigation Measures. Federal and State listed species status follows the *Federal Register* (2002) and the U.S. Fish and Wildlife Service's (USFWS), *Listed and Candidate Species* (2008). None of the plants observed during the field survey is a threatened or endangered species or a species of concern. The survey area has been impacted over time by agricultural and vehicular use and its biological resources have been altered from its native state. The three essential criteria for defining a Federally recognized wetland are: hydrophytic vegetation, hydric soils, and wetland hydrology. No wetlands were encountered during the botanical field survey and none of the criteria for defining a wetland were present



within the project site.

During the early consultation process for the preparation of the Draft EA, the USFWS commented that host plants for the endangered Blackburn's Sphinx Moth (BSM) may breed and feed within the project area. Their recommendation to carry out the plant survey during or after the rainy season was noted. Host plants such as the introduced tree tobacco were observed very infrequently during the survey. Only a few small plants were seen over the entire subject property. Surrounding areas in Kihei and along the highway in Pu`unene had an abundance of tree tobacco during the same dates as the survey was carried out. The area encompassed by our survey does not appear to be an optimum area for BSM host plants. As such, the botanical resource assessment opines that a follow up survey in the spring is not warranted under the circumstances.

A survey of arthropods in the project area was conducted by Robert W. Hobdy on July 16, 2012. [See Appendix F-1, Arthropod Study](#). The report documenting the findings of the survey indicates that no rare or endangered insects were observed including the endangered Blackburn's sphinx moth (*Manduca blackburni*). In addition, none of the moth's preferred host plants, the tree tobacco (*Nicotiana glauca*) were found, and no adult moths, eggs or larvae were seen.

The proposed alternate access easement on the north and east sides of the irrigation reservoir borders the reservoir for much of its length. If this alternate alignment is selected, a buffer between the reservoir and roadway easement during construction would protect the emergent native vegetation and any native waterfowl present at the reservoir.

The proposed project is not expected to have a significant negative impact upon the botanical resources of the site or the general region.

6. Fauna

Existing Conditions. Phillip Bruner conducted a faunal field survey of the project area in July 2011. The goals of the field survey were to:

1. Document the species of birds and mammals observed on or near the property.



2. Devote special attention to documenting the presence and/or possible use this area by native and migratory species particularly those that are listed as threatened or endangered.

The findings of the field survey were set forth in an Avifaunal and Feral Mammal Survey. [See Appendix F, Faunal Survey.](#)

Native (Indigenous) Land Birds. No native land birds were observed during the field survey. The only species that might occur in this area on rare occasions is the *Pueo* or Hawaiian Short-eared Owl (*Asio flammeus sandwichensis*). The State of Hawai'i lists the *Pueo* as endangered on Oahu but not on Maui. The *Pueo* nests on the ground in high, dense grass and forages over an array of habitats including forest, grasslands, and agricultural fields.

Native (Indigenous) Water Birds. During the field survey, an average of 16 *Auku'u* or Black-crowned Night Heron were observed around the HC&S irrigation reservoir although none were seen on the subject parcel. The *Auku'u*, which is neither threatened nor endangered, forages on a wide variety of prey and frequents wetland habitats.

Migratory Shore Birds. Migratory shore birds winter in Hawai'i between August and April and spend the rest of the year at their breeding grounds in the arctic and subarctic. The only species that could potentially occur in the area would be the *Kolea* or Pacific Golden Plover (*Pluvialis fulva*), which is neither threatened nor endangered. *Kolea* forage for insects on lawns and other habitats in Hawai'i and can be seen on cane haul roads and agricultural fields. A few *Kolea* are likely to occur in the area during August to April. No other migratory shore birds are likely to occur in the area.

Alien (Introduced) Birds. The survey area contains the usual array of alien species seen on similar property in Central Maui. These species, which are neither threatened or endangered, include the following: Cattle Egret (*Bubulcus ibis*), Gray Francolin (*Francolinus pondicerianus*), Black Francolin (*Francolinus francolinus*), Ring-necked Pheasant (*Phasianus colchicus*), Spotted Dove (*Streptopelis chinensis*), Zebra Dove (*Geopelia striata*), Barn Owl (*Tyto alba*), Japanese White-eye (*Zosterops japonicus*), Common Myna (*Acridotheres tristis*), Northern Cardinal (*Cardinalis*)



cardinales), House Finch (*Carpodacus mexicanus*), and Nutmeg Mannikin (*Lonchura punctulata*).

Mammals. The only feral mammal observed during the field survey was the Small Indian Mongoose (*Herpestes javanicus*). Rats (*Rattus spp.*) and Mice (*Mus musculus*) are likely to occur on the site along with feral cats (*Felis catus*). Using an ultrasound detection device, an evening search of the property did not detect the presence of the endangered Hawaiian Hoary Bat, which roosts solitarily in trees. The bats forage for flying insects in a wide range of habitats including forests, agricultural lands, and urban areas, as well as over bays and ponds.

Arthropods: In response to comments from the State Land Use Commission ([See July 2, 1012 letter – Appendix S, Draft EA Comment Period](#)), Robert W. Hobdy conducted a survey to inventory all arthropod species in the project area. [See Appendix F-1, Arthropod Study](#). A total of 15 arthropods were recorded, representing seven Orders of spiders and insects. No rare or endangered insects were observed including the endangered Blackburn's sphinx moth (*Manduca blackburni*). None of the moth's preferred host plants, the tree tobacco (*Nicotiana glauca*) were found, and no adult moths, eggs or larvae were seen.

Potential Impacts and Mitigation Measures. The typical assemblage of non-native birds and mammals were observed during the field survey. No threatened or endangered avian species were observed or expected given the existing resources on the site.

At least two endangered water birds (*Koioa*, *Alaekē`ōke`ō*) utilize the nearby HC&S irrigation reservoir. These water birds did not respond to any traffic noise from South Firebreak Road and Lower Kihei Road which borders the reservoir to the west and south. An embankment and the vegetation around reservoir visually shields and buffers the birds from human disturbance. It should also be noted that water birds might fly over the subject parcel or utilize the proposed drainage basins along the west side of the site as they travel between various water bodies within the region including the adjacent irrigation reservoir and the Kealia Pond National Wildlife Refuge.



The *Kolea* or Pacific Golden Plover, which is neither threatened nor endangered, is the only potential migratory shorebird that might forage along roads and clearings in the Pu`unene area.

There are no known published sightings of the Hawaiian Hoary Bat in the project area. However, since the bat forages over a wide variety of habitats, it is possible that a sighting in the area could occur on rare occasion. The Faunal Survey notes that F. J. Bonaccorso, who has conducted extensive research on the bat, has recommended that trees in a project area not be cut or disturbed between the months of April and August if there is any evidence that bats occur in the area. During this period, the young flightless bats are left in the tree while their mother forages for food. In accordance with recommendations provided by the U.S. Fish & Wildlife Service in their review of the Draft EA ([See August 21, 2012 e-mail – Appendix S, Draft EA Comment Period](#)), the cutting or trimming of trees and woody shrubs over 15 feet in height shall be avoided from June 1 through September 15 to mitigate potential impacts to the Hawaiian Hoary Bat.

As a follow-up to the land owner's response to their early consultation comments ([See August 3, 2011 letter – Appendix R, Early Consultation Letters](#)), the USFWS provided supplemental comments via telephone (personal communication with Ian Bordenave, September 27, 2011). Mr. Bordenave indicated that the endangered *Nene* or Hawaiian goose has been observed in the area around Mokulele Highway and that the *Nene* is drawn to grass seedlings in hydro-mulched areas that are being developed. He recommended holding a pre-construction meeting to inform workers about how to detect the presence of *Nene* and how to avoid them and/or their nesting sites. He also indicated that John Medeiros from the Forestry Division of the State Department of Land and Natural Resources can be called upon for assistance and that the USFWS will identify the exact number of days for a survey to determine if the *Nene* is using the project site for foraging, loafing, or nesting.

In following up on comments from the State Office of Planning, ([See July 9, 2012 letter – Appendix S, Draft EA Comment Period](#)), Robert W. Hobdy conducted a survey of the project area on July 16, 2012 to assess its potential for providing habitat for *Nene* even if only incidental or temporary in nature. [See Appendix F-2, Nene \(Hawaiian Goose\) Survey](#). The report documenting the findings of the survey notes



that the subject parcel is not irrigated and is located in one of the driest regions on Maui. This area experiences long, hot and dry summers during which the grasses and herbaceous plants become seared and withered. Even in a substantial wet season, the vegetation is tough and the greenery is fleeting. The report finds that nothing in this environment would equate to preferred habitat for *Nene* or attract them to feed or breed here. The fact that no *Nene* was observed during the survey was an expected outcome, consistent with the existing environmental resources.

Exterior lighting will be appropriately shielded or directed downward to minimize impacts to any migratory seabirds which may become disoriented when traversing the project area.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon fauna in the project area.

7. Noise

Existing Conditions. The level of ambient noise is an important indicator of environmental quality. In an urban setting, industrial and construction activities, as well as aircraft and automotive traffic can result in adverse noise impacts. In a rural environment, traffic noise, surrounding land uses, and construction activities can impact noise levels based on their proximity to noise-sensitive development. Chronically high noise levels can impact personal health and the ambience and aesthetic appeal of an area.

Noise in the project area is attributable to aircraft traversing the area, vehicles along Mokulele Highway, truck traffic between the highway and the Hawaiian Cement Quarry, and sugar cane planting and harvesting operations in the vicinity.

An Acoustic Study for the proposed project was prepared by Y. Ebisu & Associates in November 2011. [See Appendix H, Noise Study.](#) The primary purpose of the study was to ascertain and assess present and future traffic noise conditions in the project area. Potential noise impacts from onsite activities and short-term construction noise were also examined and recommendations for minimizing noise impacts were provided.



The subject parcel is located in an area characterized by sugar cane cultivation, as well as industrial, recreational, and public/quasi-public uses. Industrial uses in the area include the Hawaiian Cement Quarry, 0.2 mile to east, and the Central Maui Baseyard, 1.3 miles to the north. Recreational uses include the Maui Raceway Park, 0.4 mile to the west, while public/quasi-public uses include the Hawai`i National Guard Armory, 0.7 mile to the west, and the Maui Humane Society, 1.1 miles to the northwest.

There is no residential development in the immediate vicinity of the proposed project. The closest residential areas are in Kihei, 2.3 miles to the south; Ma`alaea, 3.6 miles to the southwest; Kahului, 4.0 miles to the north; and Pukalani, 6.4 miles to the east.

Federal noise standards were used to calculate traffic noise levels along the roads serving the subject parcel. The noise descriptor used to assess environmental noise is the Day-Night Average Sound Level (DNL).

In the project area, traffic noise levels along Mokulele Highway are expected to increase by approximately 1.3 to 1.4 DNL by 2015 as a result of project and non-project traffic. Project traffic will result in an increase of 0.3 to 0.4 DNL, while non-project traffic is expected to contribute 1.0 DNL.

During the same timeframe, traffic noise levels along the roads serving the subject property (Kama`aina Road, South Firebreak Road) are expected to increase to 6.4 DNL due to project-generated traffic.

Potential Impacts and Mitigation Measures. While no significant increase in traffic noise levels along Mokulele Highway is expected as a result of project and non-project traffic by 2015, an increase of 6.4 DNL in project-generated traffic is expected to occur along the roads serving the subject parcel. However, due to the absence of noise-sensitive development along these roads, the 6.4 DNL increase is not expected to result in any adverse noise impacts.

As previously noted, the nearest residential noise receptors are in Kihei (2.3 miles), Ma`alaea (3.6 miles), Kahului (4.0 miles), and Pukalani (6.4 miles). In order to predict worst case subdivision noise emissions at the closest residential receptors, it was assumed that each lot within the subdivision would continuously emit 70 dBA. The



results of the noise modeling indicated that worst case noise levels could fall between 3 and 29 dBA which is well below the 45 dBA at the closest residential receptors. Based on these noise modeling efforts, adverse noise impacts from onsite noise sources are not anticipated.

Predicted worst-case emissions from operating equipment within the proposed subdivision are not expected to exceed noise impact thresholds at the nearest noise-sensitive areas. During construction, no adverse noise impacts are anticipated due to the absence of noise-sensitive development in the neighborhood, as well as the physical separation and distance between the subject parcel and

Because construction activities may be audible within the project site and nearby properties, the quality of the acoustic environment may be temporarily affected if sound level thresholds are exceeded during construction. Construction vehicles, machinery, and equipment, such as tractor-trailers, front-end loaders, excavators, bulldozers, dump trucks, graders, generators, jackhammers, and power tools are the dominant noise sources during the construction phase.

Measures to reduce construction noise to inaudible levels will not be practical in all cases. However, proper equipment maintenance, the use of sound-dampening equipment, and limiting construction activities to daylight working hours will help minimize noise impacts.

Under existing State noise regulations, the maximum sound level for agricultural and industrial-zoned land is 70 dBA. The abbreviation dBA represents a sound pressure level with an A-weighting filter. In measuring sound, an A-weighting filter is commonly used to emphasize frequencies where the human ear is most sensitive. The A-weighting curve has been widely adopted for environmental noise measurement and is standard in many sound level meters.

The development of the proposed project will comply with all applicable regulations pertaining to noise including Chapter 11-46, HAR (*Community Noise Control*). Should noise from construction activities or industrial activities exceed the 70 dBA threshold set by the State Department of Health (DOH), a Community Noise Permit will be obtained from the Department's Indoor & Radiological Health Branch in accordance with Chapter 11-46, HAR.



Because future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including Chapter 11-46, HAR. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In the State of Hawai`i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit is granted, specific terms of compliance are set forth to ensure that the permitted use will not adversely affect the environment. Failure to comply with the terms of the permit could result in enforcement action including penalties or revocation of the permit.

In light of the foregoing, the proposed project is not expected to result in any adverse noise impacts.

8. Air Quality

Existing Conditions. Maui lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Because the project area is located in the valley between Haleakala and the West Maui Mountains and the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. Local winds such as land/sea breezes and/or upslope/down slope winds also influence the wind pattern for the area when the trade winds are weak or absent. At night, winds are often drainage winds that move down slope and out to sea. During winter, occasional strong winds from the south or southwest occur in association with the passage of winter storm systems. The monthly



mean wind speed and prevailing wind direction statistics for Kahului Airport indicate that ventilation is good throughout the year with monthly mean speeds ranging from about 11 to 15 miles per hour. Wind data from Kahului are at least semi-representative of winds at the project site. Wind speeds in summer tend to be strongest. The monthly prevailing wind direction year round is from the northeast.

Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power-generating plants).

The air quality in the Central Maui region is relatively good. Non-point source vehicle emissions do not generate a significant or high concentration of pollutants, as prevailing winds help to disperse emissions quickly. The Central Maui region is currently in attainment of all Federal and State air quality standards.

An Air Quality Study (AQS) for the proposed project was prepared by B.D. Neal & Associates in November 2011. [See Appendix H, Air Quality Study](#). The AQS examined potential short- and long-term air quality impacts that could occur as a result of construction activities and the proposed heavy industrial use of the site. Measures to minimize potential air quality impacts were proffered where possible and appropriate.

Air quality in the immediate project area is primarily affected by pollutants from vehicular, industrial, natural, and/or agricultural sources. Most of the man-made particulate and sulfur oxides emissions on Maui originate from point sources, such as power plants and other fuel-burning industries. Nitrogen oxides emissions are roughly equally divided between point sources and area sources (mostly motor vehicle traffic). The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic, sugar cane burning), while hydrocarbons are emitted mainly from point sources.

The major source of air pollution in the project area is associated with agricultural operations. There are also a small number of industrial sources within a few miles of the site, and air pollution emissions occur from automobile traffic using Mokulele Highway to the west of the project site. Emissions from these sources consist primarily of particulate, carbon monoxide and nitrogen oxides. Volcanic emissions from distant



natural sources on the Big Island also affect the air quality at times during *kona* wind conditions. By the time the volcanic emissions reach the project area, they consist mostly of fine particulate sulfate.

Two size fractions of particulate matter (PM) were measured at the Department of Health's (DOH) monitoring station in Kihei. Particulate matter less than 10 microns diameter (PM-10) and particulate matter less than 2.5 microns diameter (PM-2.5). Annual second-highest 24-hour PM-10 concentrations (which are most relevant to the air quality standards) ranged from 60 to 119 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) between 2005 and 2008. Average annual concentrations ranged from 20 to 26 $\mu\text{g}/\text{m}^3$.

The annual 24-hour 98th percentile PM-2.5 particulate concentrations (which are most relevant to the air quality standards) ranged from 8 to 16 $\mu\text{g}/\text{m}^3$ between 2005 and 2009. Average annual concentrations ranged from 4 to 6 $\mu\text{g}/\text{m}^3$.

Given the limited air pollution sources in the area, it is likely that air pollution concentrations are near natural background levels most of the time, except possibly for locations adjacent to agricultural operations or near traffic-congested intersections.

Potential Impacts and Mitigation Measures. The existing air quality in the project area is predominantly good. Brush fires and agricultural tilling operations have occasionally resulted in the recording of relatively high particulate concentrations at the DOH air quality monitoring station in Kihei.

In the short term, air quality will be temporarily affected by fugitive dust from construction activities. If uncontrolled, estimated fugitive dust emissions could amount to 1.2 tons per acre per month depending on rainfall.

In accordance with Chapter 11-60.1, HAR entitled Pollution Control and Section 11-60.1-33, HAR pertaining to Fugitive Dust, appropriate dust control measures will be implemented during construction to minimize the effects of fugitive dust. Examples of such measures include but are not limited to the following:

1. To control dust, active work areas and any temporary unpaved work roads will be watered at least twice daily on days without rainfall.



2. The use of wind screens and/or limiting the area that is disturbed at any given time will help contain fugitive dust emissions.
3. Mulching or chemical soil stabilizers will be used on disturbed, inactive areas of the site to help control wind-generated erosion.
4. Dirt-hauling trucks will be covered when traveling on roadways to prevent windborne particulates.
5. A routine road cleaning and/or tire washing program will help reduce fugitive dust emissions from trucks tracking dirt onto paved roadways in the project area.
6. Establishing landscape plantings early on during the construction phase will help dust control.
7. Monitoring dust at the project boundary during construction will be considered as a means to evaluate the effectiveness of the project's dust control program. Adjustments will then be made if necessary.
8. During construction, onsite construction equipment, vehicles used by construction workers, and trucks traveling to and from the project will be the primary source of vehicle emissions (carbon monoxide, nitrogen oxides). Increased emissions resulting from traffic disruptions attributable to construction equipment and/or commuting construction workers can be alleviated by moving equipment and personnel onto the site during off-peak traffic hours.

To the extent possible, non-drinking water will be used for dust control during construction activities.

From a long-term perspective, project-related motor vehicle emissions should have a negligible effect on air quality in the project area and worst-case concentrations of carbon monoxide should remain within State and Federal ambient air quality standards. As noted in the AQS, implementing any mitigation measures for long-term, traffic-related air quality impacts is probably unnecessary and unwarranted.

As previously noted, the project area is located in the valley formed by Haleakala and the West Maui Mountains. Since the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. Adverse air quality impacts to existing land uses in the area (Maui Humane Society, Maui Raceway Park, Hawai'i National Guard Armory) are not anticipated as these facilities do not lie directly downwind of the project site and the prevailing trade winds would help to quickly disperse any airborne particulates.



The development of the proposed project will comply with all applicable regulations for the control of air pollution, including Chapter 11-60, HAR (*Air Pollution Control*).

Since heavy industrial uses will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. Nonetheless, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including Chapter 11-60, HAR. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse air quality impacts.

9. Archaeological/Historic Resources

Existing Conditions. Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey (AIS) of the subject parcel and the alignment for the alternate access road. Field work for the inventory survey was undertaken in June 2011. [See Appendix I, Archaeological Inventory Survey](#). A large portion of the project area had been previously surveyed by International Archaeological Research Institute, Inc. (IARII) in 1999 as part of an AIS for the area. The 1999 IARII inventory survey identified two archaeological sites within the project area including a section associated with the former Naval Air Station (NAS) Pu`unene – State Site 50-50-09-4164 – and a post-World War II cattle ranching site – State Site 50-50-09-4801. In addition to leading to the relocation of these two sites, the SCS survey assessed the



presence/absence of features within both sites and identified previously undocumented features within each site.

A majority of the historic features within the project area have been heavily impacted by modern mechanical clearing and ensuing debris removal. In general, most of the features that comprise State Site 50-50-09-4164 were mechanically impacted, abandoned, and neglected. The historic features associated with State Site 50-50-09-4801 were abandoned and neglected, but not mechanically impacted. Archival research has indicated the northern half of the subject parcel had been utilized for hog farming and scrap metal storage site, while the southern half of the property remained fallow.

A total of 15 previously unrecorded features, interpreted as either NAS Pu`unene-related or post-war cattle ranching-related features, were recorded by the SCS survey. Of the 15 newly recorded features, three features were located in the post-war cattle ranching area around State Site 50-50-09-4801, while the remaining 12 features were located in the former NAS Pu`unene area (Housing Area A) around State Site 50-50-09-4164.

To supplement their surface pedestrian survey, a total of 20 stratigraphic trenches were mechanically excavated by SCS. Only one stratigraphic trench (ST-6) revealed the presence of subsurface architecture at Facility 177 (SCS Site T-25). The feature was initially utilized as a military storehouse and converted for animal husbandry purposes.

Potential Impacts and Mitigation Measures. The 2011 SCS inventory survey recorded 15 new features associated with State Site 50-50-09-4164 and State Site 50-50-09-4801 which are significant under Criterion D for their information content. State Site 50-50-09-4164 has also been assessed as significant under Criterion A, as it has yielded information important to the history of Maui. These 15 features have been recorded and subsumed under the existing State site numbers.

Since two inventory surveys of the project area have already been conducted (IARII-1999, SCS-2011), it seems unlikely that any new information would be gleaned from further archaeological investigation. As such, the SCS inventory survey recommends no further archaeological work for the larger portion of the project area. Because the



alignment for the alternate access road was only subject to a pedestrian survey, archaeological monitoring is recommended since the archaeological features that were documented on the east and west sides of the alternate access road could be impacted by ground-altering construction activities.

The SCS inventory survey of the project area was approved by the State Historic Preservation Division (SHPD) on June 18, 2012. [See Appendix I-1, SHPD Approval of Inventory Survey.](#)

SCS prepared an Archaeological Monitoring Plan (AMP) for the proposed project in October 2011. [See Appendix J, Archaeological Monitoring Plan.](#)

The AMP is varied in that full-time archaeological monitoring will be conducted if the alternate access road is constructed. For the remainder of the project area, intermittent monitoring is recommended since two inventory surveys of the area have already been conducted (IARII-1999, SCS-2011) and the area has been subject to intensive ground-altering activities in the past with minimal probability that subsurface deposits would be located.

The AMP has been prepared in accordance with Chapter 13-279, Hawai'i Administrative Rules (*Rules Governing Standards for Archaeological Monitoring Studies and Reports*).

Key provisions set forth in the AMP for the proposed project include the following:

1. A qualified archaeologist intimately familiar with the project area and the results of previous archaeological work conducted in the Pu'unene area will intermittently monitor subsurface construction activities in the proposed project area. Full-time Monitoring is only recommended should the alternate road access be created. During Monitoring, one archaeologist will be required per each piece of ground altering machinery in use. No land altering activities will occur on the parcel until this AMP has been accepted by the SHPD. If significant deposits or features are identified and additional field personnel are required, the archaeological consultants conducting the Monitoring will notify the contractor or representatives thereof before additional personnel are brought to the site.
2. If features or cultural deposits are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is



conducted. SHPD will be contacted to establish feature significance and potential mitigation procedures.

3. Control stratigraphy in association with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and the contracting archaeologist, these deposits will be sampled, as determined by the same.
4. In the unlikely event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD island archaeologist and SHPD Cultural Historian will both be immediately identified as to the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Island Burial Council by the SHPD Maui staff or the contracting archaeologist.
5. To ensure that contractors and the construction crew are aware of this AMP and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.
6. The archaeologist will provide all coordination with the contractor, SHPD, and any other groups involved in the project. The archaeologist will coordinate all Monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.

In a letter dated August 24, 2012, the SHPD approved the monitoring plan for the proposed project. [See Appendix J-1, SHPD Approval of Monitoring Plan.](#)

An archaeological monitoring report will be prepared and submitted to the SHPD within 180 days after the completion of fieldwork. If any cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal significance criteria.

In light of the foregoing, the proposed project is not expected to have an adverse effect on archaeological or historic resources.

10. Cultural Resources

Existing Conditions. In September 2011, Scientific Consultant Services, Inc. (SCS)



prepared a Cultural Impact Assessment (CIA) for the proposed project. [See Appendix K, Cultural Impact Assessment](#). Enacted by the State Legislature in 2000, Act 50 requires that an assessment of cultural practices be included in environmental assessments and environmental impact statements, and that the potential impacts a proposed action may have in an area where cultural activities are currently, or were previously practiced, be considered during project planning. The purpose of the CIA was to identify any extant areas where cultural activities are currently, or were previously conducted within a project site or area, and evaluate the effect a project may have on cultural resources, practices or beliefs; the potential to isolate cultural resources, practices or beliefs from their setting; and the potential for introducing elements which may alter the setting in which cultural practices take place. The CIA was prepared in accordance with the suggested methodology and content protocol set forth in Office of Environmental Quality Control's *Guidelines for Assessing Cultural Impacts* (1997).

As noted in the CIA, the project area is located in the lands of Pulehu Nui which translated literally means “large pūlehu” but since *pulehu* means “broiled” it might refer to the degree of broiling one could receive from the sun in this area (Pukui *et al*, 1974).

The *ahupua`a* of Pulehu Nui extended across the Kula plain up through Makawao, to the edge of Haleakala and would have included fruitful sections and not just arid plains. The word “*kula*” meant “open country or plain” according to Handy and Handy (1972), and was often used to differentiate between dry or *kula* land and wet-taro land. The height and size of Haleakala to the east prevents moisture from reaching its southern and western flanks, causing desert-like conditions throughout the region. As noted by Handy and Handy, “This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams. Kula was always an arid region, throughout its long, low seashore, vast stony *kula* lands, and broad uplands.”

As the sugar industry developed in the mid-1800s, more and more land was leased or purchased for this profitable endeavor. Since the availability of water was an issue, the Hamakua Ditch Company was formed 1876, and within two years, was bringing water from the streams of Haleakala to four plantations in East Maui (Dorrance and Morgan, 2000).



With the success of the Hamakua Ditch, Claus Spreckles formed the Hawaiian Commercial & Sugar (HC&S) Company and decided to construct a ditch system in East Maui (above the Hamakua Ditch) for his newly acquired land (Wilcox 1996). Spreckles' Haiku Ditch extended 30 miles, from Honomanu Stream to the Kihei boundary and the water was used to irrigate his cane lands in the Central Maui plains. Presently, the Haiku Ditch ends at the HC&S reservoir abutting the project area to the north.

After the annexation of Hawai`i in 1898, some of the sugar planters on Maui, including Alexander and Baldwin (A&B), combined their operations to form the Maui Agricultural Company, a co-partnership that initially encompassed seven plantations and two mills. In 1904, five new plantations became part of the Maui Agricultural Company, one of which included the Makawao Plantation Company, which encompassed the section of Pulehu Nui containing the project area. In 1948, Maui Agricultural Company merged with HC&S (Dorrance and Morgan, 2000).

In 1937, a portion of the cane fields to the west of the project area was turned into a civil airfield for the Territory of Hawai`i, as the airfield at Ma`alaea had become too small. Two years later, Inter-Island Airways began service to Maui, landing at the Pu`unene Airport.

In 1940, with the threat of a world war looming on the horizon, the U.S. Navy began using the Pu`unene Airport, along with a small Army Air Corps support base, at the airfield. At this time, the air station was being used to support Squadron VU-3, which towed targets and operated drones for the Pacific Fleet. In 1942, shortly after the United States entered World War II, the project area and other land in the vicinity of the airport was condemned pursuant to a Declaration of Taking that was filed with the U.S. District Court for the Territory of Hawaii. As a result, the Pu`unene Airport was expanded and commissioned as Naval Air Station (NAS) Maui. In addition to lengthening and widening the runways, the Navy added flight simulators (Link trainers) and changed its name to NAS Pu`unene. By 1945, the base supported over 3,300 personnel and 271 aircraft, and encompassed 2,202 acres, two paved runways, taxiways, ramps, hangars, and auxiliary buildings. A total of 106 squadrons and carrier groups passed through NAS Pu`unene during WW II.



In 1947, the U.S. Navy returned the Pu`unene Airport to the Territory of Hawai`i. The airfield was apparently used as the official inter-island Airport for Maui until at least 1952 when the Kahului Airport became available for civil use. However, the Maui/Pu`unēnē airstrip, as it was known, serviced crop-dusters and other smaller aircraft and was not abandoned as a landing strip until sometime between 1961 and 1977. Some former military facilities such as bunkers, revetments, and other remnants still exist today. The land comprising NAS Pu`unene was sold back to HC&S by the State of Hawai`i except for 222 acres which were transferred to the County of Maui for public and recreational purposes under Executive Order 4024.

Existing recreational uses within this 222-acre area include facilities for drag racing, dirt bike racing, go-kart racing, autocross racing, oval (dirt) track racing, and an area for flying radio-controlled model aircraft.

In recent times, the northern half of the subject parcel had been used for hog farming and as a scrap metal storage site, while the southern half of the property remained fallow.

Potential Impacts and Mitigation Measures. The preparation of the CIA involved archival and documentary research, as well as consultation with agencies, organizations, and individuals having knowledge of the project area and its cultural resources, practices. As part of the CIA process, SCS consulted with the State Historic Preservation Division – History and Culture Branch and Maui Cultural Branch; the Office of Hawaiian Affairs (OHA) – Oahu and Maui Branches; the Maui Planning Department; the Maui County Cultural Resources Commission; the Central Maui Hawaiian Civic Club; Hale Mahaolu and Kimokeo Kapahuleua. A Cultural Impact Assessment Notice was also published in *The Honolulu Star-Advertiser* and *The Maui News*, on July 20, 21, and 24, 2011, and the August issue of the OHA newspaper (*Ka Wai Ola*).

Long time Maui resident Hugh Starr was also consulted and provided copies of reference documents and a map pertaining to the World War II use of the area. In addition, OHA did not have any CIA referrals but provided some project-related comments which were provided to the land owner. [See Appendix K, Cultural Impact Assessment.](#) None of the other consulted parties provided any referrals or



information about potential cultural resources or cultural activities occurring in the project area.

The project area has not been used for traditional or historic cultural purposes within recent times and in light of the historical and cultural research that has been conducted for the CIA, it is reasonable to conclude that the exercise of native Hawaiian rights (or any ethnic group) related to gathering, access or other customary activities will not be affected by the development of the proposed project. In addition, since no cultural activities were identified within the project area, no adverse effects are anticipated.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon cultural resources.

11. Scenic and Open Space Resources

Existing Conditions. The subject parcel slopes in an east to west direction with elevations on the site ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent. Sugar cane fields border the site on its east and south, while the undeveloped lands of Project District 10 and the Pu`unene Airport Master Plan area lie to the west. To the north of the property are Lower Kihei Road, an HC&S irrigation reservoir, and sugar cane fields.

As viewed from the subject parcel, Haleakala lies to the east of the site, while the West Maui Mountains can be seen to the west. The Pacific Ocean and the island of Kaho`olawe are visible to the southwest.

The subject property does not contain any natural or man-made scenic features. The site is not located within any important *mauka* or *makai* view corridors along Mokulele Highway. Due to its distance from the highway the project site cannot be seen from surrounding areas.

Potential Impacts and Mitigation Measures. While the visual character of the project area will be modified by the proposed project, it will not have an adverse effect upon scenic resources or view corridors due to its distance from Mokulele Highway and other public roadways in the area.



The maximum building height under *M-3, Restricted Industrial* zoning is 90 feet. Landscaping around the perimeter of the proposed subdivision will help integrate the project with its surroundings. All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

Due to its distance from Mokulele Highway and residential areas in Kahului, Kihei, and Upcountry, the proposed project will not have an adverse visual impact.

While the proposed drainage swale along the west side of the subject parcel constitutes an area of open space, there are no parks, utility easements, shoreline areas, and wetlands on the property which would contribute to the establishment of an open space framework for the area.

12. Hazardous Materials

Existing Conditions. A Phase I Environmental Site Assessment (ESA) of the subject property was conducted by EnviroServices & Training Center (ETC) in March 2011. [See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#)

The Phase I ESA notes that the subject parcel was previously used as a piggery and an unpermitted solid waste management facility. Until its sale in March 2011, the subject property had been owned by A&B Properties, Inc. (A&B) who formerly leased the property to Maui Factors, Inc., who in turn subleased the site to Larry Poffenroth.

The subject property was formerly used as a piggery for over 25 years. As part of an agreement with Maui Factors, Mr. Poffenroth took over piggery operations around 1995 and is believed to have begun solid waste management activities on the property shortly thereafter. The solid waste management activities occurred without the knowledge or consent of A&B. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing, however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In November 1998, the State



Department of Health (DOH), Solid Waste and Hazardous Materials Branch instructed Mr. Poffenroth to halt all salvage operations on the property. Large amounts of food waste were brought in as hog feed, which resulted in discarded empty food packaging materials being spread throughout much of the north part of the property. In late 2007, A&B was finally able to evict Mr. Poffenroth and all the remaining pigs were subsequently removed in 2008. Immediately following the eviction, A&B began solid waste cleanup activities and completed the clean up in February 2011. Based on the former usage of the subject parcel, several specific potential sources of contamination were identified during previous site inspections.

Historic maps and documents provided by A&B indicated that the subject property was part of the former Pu`unene Naval Air Station (NAS) and that a machine gun range used to be located in or around the southernmost part of the property. Earth revetments, presumably in the impact zone of the range, were located near the southern boundary of the property. Residual heavy metals are common contaminants associated with former military firing ranges and are considered a historical recognized environmental condition (REC). While the earth revetments no longer exist there is evidence that the soil in the impact zone has been excavated in the past. Based on information provided by A&B and the DOH, the potential presence of residual contamination from this historical REC cannot be dismissed and is therefore considered a current REC on the property.

ETC conducted a site reconnaissance survey of the subject property in early 2011 to identify the use and/or storage of hazardous materials. With the exception of an existing radio tower and appurtenant structures, no visible structures were observed although several building remnants (concrete slabs) and a non-drinking water well were located on the site. Limited quantities of cathode ray tubes, batteries, and other waste were found inside a metal storage bin located in the northwestern sector of the property. According to A&B, the materials were being prepared for shipment and proper disposal. The storage bin was placed on a concrete slab and no releases were observed in the vicinity of the bin.

The Phase I ESA found no evidence of RECs associated with the subject property except for:



- The potential presence of residual contaminants associated with former solid waste management activities on the subject property.
- The potential presence of residual contamination associated with the historic use of the southernmost part of the property as a machine gun range.

Potential Impacts and Mitigation Measures. As part of the planned cleanup of the subject parcel, A&B contracted with ETC to prepare a Site Investigation Report to determine whether surface soils were impacted by past solid waste management activities. [See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#) The data obtained during this investigation was used to determine whether additional investigation and/or corrective actions are warranted, based on the decision rules developed in the Phase I ESA.

The contaminants of potential concern (COPC) that were identified by the site investigation were eight Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), total petroleum hydrocarbons as diesel, total petroleum hydrocarbons as oil (TPH-O), polynuclear aromatic hydrocarbons, and polychlorinated biphenyls. The media targeted by this site investigation was surface soil.

In order to assess the impacts associated with the former solid waste operations, decision units (DU) were established based on source locations. These source locations include: the shop area (DU1); vehicle and drum storage area (DU2); scrap metal processing area (DU3); miscellaneous scrap metal and debris (DU4); scrap metal stockpiles and transformer storage area (DU5); vehicle/tanker/television/monitors storage area (DU6); miscellaneous hazardous materials storage area (DU7); miscellaneous scrap metal with open areas (DU8); battery storage area (DU9); miscellaneous scrap metal pile (DU10); and the scrap metal and CRT storage area (DU11).

In March 2011, a total of 13 multi-increment soil samples (11 primary samples, two field replicate samples) were collected from the potential contaminant source locations. The samples were submitted to Torrent Laboratory, Inc. in Milpitas, California for select COPC. Analytical results from the initial site investigation activities for the Phase I ESA indicated that elevated concentrations of total petroleum hydrocarbons as oil (TPH-O) were reported for DU6 and DU12 (replicate of



DU3). Specifically, reported average concentration for DU6 (730 mg/kg) and the adjusted value (reported average concentration plus RSD) for DU12 (589 mg/kg) exceeded the State Department of Health (DOH) Environmental Action Level (EAL) of 500 mg/kg pertaining to gross contamination concerns associated with unrestricted land use. The adjusted value for DU6 (1,228 mg/kg) also exceeded the DOH EAL pertaining to leaching (1,000 mg/kg) concerns. Although the initial EAL was exceeded, the DOH EAL pertaining to direct exposure (2,300 mg/kg) concerns associated with unrestricted land use was not exceeded.

During discussions for the sale of the subject parcel property, A&B and CMBY agreed to a commercial/industrial land use limitation for the property. Therefore, gross contamination concerns associated with unrestricted land use would not be considered a significant environmental hazard for the site and was removed from consideration. An adjusted TPH-O value (1,228 mg/kg) was reported at a concentration exceeding the EAL pertaining to soil leaching EALs in DU6 only.

A previous groundwater investigation indicated that none of the regulated drinking water contaminants were identified at levels of concern. In addition, the DOH generally considers soil leaching EALs associated with petroleum-related constituents excessively conservative. For example, as noted in the DOH's *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater* document (EHE Document), TPH-O is considered to be biodegradable and "can be expected to naturally degrade over time," however, it is not accounted for in the model.

The model used is also based on a much higher rainfall than is received in Pu`unene, Maui. In addition, the leaching EAL does not consider drinking water utility status (i.e. drinking water vs. non-drinking water) and as noted in the EHE Document, the leaching EAL is based on the California EPA Los Angeles Regional Water Board proposed action level of 1,000 mg/kg which in fact applies to drinking water aquifers in which the distance above groundwater is less than 20 feet (CRWQCB, 1996).

Note that groundwater status of the subject property is considered to be non-drinking water and is anticipated at a depth greater than 100 feet. Based this information, soil leaching concerns associated with petroleum-related constituents do not appear to be a significant concern. Therefore, soil leaching would not be considered a significant



environmental hazard for the site and was removed from consideration.

In addition to the DU6 findings, analytical results indicated that soil collected from DU11 contained an average total lead concentration of 830 mg/kg, which exceeds the initial AL of 200 mg/kg. The detected total lead concentration also exceeded the DOH EAL of 800 mg/kg pertaining to direct exposure concerns associated with commercial/industrial land use. Based on these findings, ETC proposed additional surface soil sampling within DU11. As a result, ETC returned to the subject parcel in August 2011 to collect a total of 10 multi-increment soil samples (eight primary samples, two field replicate samples) from DU11. The samples were submitted to TestAmerica – Honolulu in Aiea for analysis of total lead content.

Analytical results for the additional investigation of DU11 indicated that average total lead concentrations for all eight DUs were well below the project defined AL of 200 mg/kg. Based on these findings, ETC suspects that the deviation of these results from initial DU11 findings may have been caused by nuggets or discrete pieces of lead within the soil. Therefore, based on the analytical results of the additional sampling activities, ETC suspects that the initial results for DU11 may not necessarily reflect the average lead concentrations that are likely to be encountered throughout DU11. In addition, given the future commercial/industrial land use of the subject property coupled with the results of the additional sampling activities, potential plant uptake is not considered a concern. Therefore, based on the data, lead was removed from consideration as a contaminant of concern for the subject parcel.

Based on review of the data obtained from the site investigation and comparison of COPC concentrations to applicable DOH EALs pertaining to commercial/industrial land use, there appear to be no retained environmental hazards for the site. As such, no further action appears necessary to address concerns associated with the former solid waste operations on the subject property.

In December 2011, the current land owner commissioned Malama Environmental (MEV) to conduct project monitoring and review the environmental documentation prepared by ETC. The scope of MEV's work consisted of the following tasks.

- Review of environmental documents compiled by ETC, including field work plans, sampling plans, Site Investigation Report and limited Phase II Report



by ETC.

- Review of field sample procedures by ETC.
- Conduct field sampling monitoring of ETC personnel.
- Review of sample preparations and chain of custody for the chosen laboratory.
- Review of the laboratory qualifications, analytical methods chosen, and quality assurance/quality controls.
- Review ETC's conclusions.

The Site Investigation Report prepared by ETC in October 2011 will be submitted to the DOH requesting a "no further action" statement and final closure letter. Based on MEV's site reconnaissance and review of ETC's documentation, the former unpermitted solid waste requires no further sampling or environmental investigation for industrial/commercial land use. MEV concurs with this conclusion.

The *Draft Phase II Limited Environmental Site Assessment* (dated 11/16/11) at the former machine gun range will not be submitted to the DOH as it was meant to satisfy the former land owner (A & B) that there is no contamination along the southern boundary of the subject parcel. The work was conducted as a Phase II Environmental Site investigation for the property transaction in order to assess whether the subject property had been impacted by the former range and was considered a recognized environmental condition. It should be noted that if the surface and subsurface soil samples in the location of the former range were determined to be lead contaminated, ETC would have been instructed to notify and consult with the DOH.

In conclusion, the MEV review notes that it is evident that the former machine gun range has not caused any adverse environmental impacts to the subject parcel within the recommended soil fraction size of less than 2 millimeters and requires no further action or submission to the DOH.

In a letter dated January 9, 2012, the DOH indicated that no further action regarding the former solid waste activities that occurred on the site is required since the solid



waste has been removed from the subject property and that impacts associated with the previous solid waste activities have been adequately addressed. [. See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#)

Since heavy industrial uses within the proposed subdivision will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. For example, spilled fluids or accidental releases could accumulate over time if work areas are not properly cleaned and regularly maintained. In outdoor areas, these fluids could be transported offsite during heavy rainfall if there are no mitigation measures in place.

Because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) that are specific to the heavy industrial use on their lots.

For example, to minimize impacts to groundwater resources and adjacent and downstream properties, provisions outlining the responsibility of lot owners for the proper delivery, removal, storage, use, and handling of hazardous materials will be included in the CC&Rs for the subdivision. Examples of such provisions include, but are not limited to, the following.

- Lot owners must utilize appropriate measures to contain spills and prevent hazardous materials from leaching or draining into surface or subsurface drainage areas.
- Lot owners must utilize BMPs to minimize non-point source pollutants.
- Lot owners must implement BMPs to minimize surface and ground water contamination from onsite activities, including the delivery, removal, storage, use, and handling of industrial agents on their property and in common areas.
- The on site storage and/or disposal of hazardous materials (by lot owners) must be approved by the appropriate Federal, State, and/or County agencies prior to commencement.

Should a potentially hazardous material be accidentally released, all work in the vicinity of the spill will halt immediately and the area will be vacated. First responders and all appropriate government agencies will be promptly notified and the affected area will be cordoned off. The release will then be contained and dealt with in



accordance with applicable Federal, State, and County regulations. Lot owners will be required to prepare Emergency Response Plans to address such occurrences if their activities involve the use of any hazardous materials.

In light of the foregoing, the proposed project is not expected to have an adverse effect on soils, groundwater resources, and surrounding properties.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions. The resident population in the State of Hawai'i increased 9.3 percent from 1,108,229 in April 1990 to 1,211,537 in April 2000. During this same period, the resident population in Maui County increased 27.6 percent from 100,504 in April 1990 to 128,241 ten years later. The resident population on the island of Maui experienced similar gains as it grew from 91,361 in April 1990 to 117,644 the following year, an increase of 28.8 percent (State of Hawai'i Data Book 2010).

The resident population in the Kihei-Makena Community Plan region is expected to grow from 22,870 in 2000 to 36,767 in 2030, an increase of nearly 61 percent. Similar growth is expected in the Wailuku-Kahului region as its population increases almost 63 percent from 41,503 in 2000 to 67,565 in 2030 (*Draft Maui Island Plan*, December 2009).

Potential Impacts and Mitigation Measures. The proposed project will not alter population and demographic characteristics neither is it expected to result in inconsistent population growth or will it have any disproportionate impacts upon housing and employment markets. Since the project does not include a housing component, it will not generate a new or secondary demand for housing and the associated increase in population.

2. Economy

Existing Conditions. With the possible exception of Kauai, Maui County is more dependent on tourism than any of Hawai'i's four counties. Hotel occupancy rates for Maui typically exceed other areas in the State with the exception of Waikiki. When



compared to other counties, Maui has a larger visitor industry relative to the size of its economy. Local government and businesses have worked very **hard** at cultivating Maui's worldwide image as a premier vacation destination. In fact, Maui County is the only county that spends money to promote and support tourism.

The September 11, 2001 terrorist attacks on the United States had a drastic impact on Hawai'i's visitor industry. In 2001, Maui's visitor count was 2,104,480. In 2002, the visitor count rebounded slightly to 2,139,427 as visitors slowly returned during the second half of the year. Although visitor totals from 2003 to 2007 showed positive gains, dismal economic conditions contributed to a 15.58 percent decline in visitor arrivals for 2008 and a 9.24 percent decline in 2009. Visitor arrivals in Hawaii and other destinations were severely impacted by the economic recession in the United States and abroad. In 2010, the visitor traffic increased 10.38 percent to 2,132,860 as signs of economic stability emerged. As U.S. and foreign markets recover from the current economic crisis, Maui is once again expected to be **a** favorite travel destination for mainland visitors.

Agriculture on Maui has been dominated by large operations like Maui Land & Pineapple Company (ML&P) and Alexander & Baldwin's Hawaiian Commercial & Sugar Company (HC&S).

In 2007, ML&P shut down the canning portion of its pineapple operations to rely solely on the more profitable fresh fruit segment. Further downsizing occurred in 2008, which resulted in a work force reduction of over 200 employees. In December 2009, ML&P announced the shut down of its agricultural arm, citing continued annual losses. However, a new company, Hali`imaile Pineapple Company, was formed shortly thereafter and immediately took over ML&P's pineapple operations. HC&S survives as Hawaii's only remaining sugar operation due in part to its economies of scale, its land configuration (a relatively compact and contiguous area in the isthmus of the Valley Isle), and its commitment and ability over the years to reinvest and upgrade plant and equipment.

The unemployment rate (not seasonally adjusted) for the State of Hawai'i was 6.6 percent in November 2011 compared to 6.5 percent in November 2010. The unemployment rate for Maui County dropped to 7.7 percent in November 2011 from



8.2 percent in November 2010. During this same period, the unemployment rate for the island of Maui was 7.4 percent compared to 8.1 percent a year earlier. (State Department of Labor and Industrial Relations, December 2011).

A Market Study has been prepared for the proposed project by ACM Consultants, Inc. [See Appendix M, Market Study](#). The objectives of the study were: (1) to define and delineate the market area; (2) to identify and analyze the current supply and demand conditions specific to the subject's market; (3) identify, measure and forecast the effect of anticipated developments or other factors on future supply; and (4) forecast the effect of anticipated economic or other factors on future demand.

On the island of Maui, about 489 acres of land has been zoned for pre-existing *M-2, Heavy Industrial* uses, while in Central Maui, approximately 442 acres has been zoned for this purpose. The HC&S sugar mill in Pu`unene occupies approximately 40 acres, while the future power generation plant site for Maui Electric Company encompasses about 65 acres. Of the remaining 337 acres, much of the heavy industrial land is situated around Kahului Harbor and the Kahului Airport. These lands are used for harbor and airport facilities and operations and were not considered available to the market.

Other heavy industrial areas in the Central Maui area include the Wakea Industrial Subdivision, Airport Industrial Subdivision, as well as portions of The Millyard and Maui (Kahului) Industrial Subdivision. The lands underlying Queen Ka`ahumanu Center, Maui Mall, and the former ML&P cannery are zoned for heavy industrial use, as well as the area around Hobron Avenue and two adjacent properties at the corner of Ka`ahumanu Avenue and Kahului Beach Road. Most of the land in Central Maui that is zoned for heavy industrial use has already been built upon or is being used as work or storage yards. The existing inventory of heavy industrial-zoned land for sale consists of 16 acres at five sites in Kahului and two locations in Wailuku. This land is located in areas that are considered unsuitable for heavy industrial use due to proximity impacts to adjacent residential and commercial development. In this case, the highest and best use of this land would be for commercial retail/office use, which is currently allowed by heavy industrial zoning.



There has not been any purely heavy industrial development in Central Maui for over a decade. During this period, the focus has been on the light industrial market as evidenced by the construction of Maui Business Park, Waiko Baseyard, Consolidated Baseyards, and the Maui Lani Village Center. The most recent development of heavy industrial land was for the Airport Triangle Subdivision, a project containing commercial retail/office centers and car dealerships. At present, the proposed project is the only heavy industrial development planned on Maui. As such, it is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase lots and build new facilities or expand their current operations.

Recently built subdivisions in Central Maui have focused on the light-industrial market and reflect significantly fast absorption rates. The 11 lots released by the developer of Waiko Baseyard in October 2005 totaled just over five acres and were absorbed within five months. This would indicate an absorption rate of 11.90 acres per year. The Consolidated Baseyards was completed in 2006, with 35 marketable lots totaling approximately 22 acres. There were 27 lots, totaling almost 16 acres, immediately sold between October and December 2006. The remaining eight lots, of approximately 6 acres, were sold in 2007. Overall monthly absorption averaged 1.6 acres, which would translate into about 19 acres per year.

The development of Waiko Baseyard and the Consolidated Baseyards occurred during the most recent peak in the real estate market as evidenced by their high absorption rates. Other projects which were brought to market during less robust times have experienced longer marketing periods. To account for the cyclical nature of the real estate market, all commercial/industrial subdivisions which were developed in Central Maui over the last 20 years were analyzed. A total of seven subdivisions were developed during this time. With the exception of the Maui Lani Village Center, which only began closing lots within the last two years, all other subdivisions have been successfully absorbed by the market. Over the last 20 years, approximately 174.74 acres of industrial land has been absorbed, which reflects a straight-line absorption rate of 8.74 acres per year.

Potential Impacts and Mitigation Measures. As previously noted, a Market Study has been prepared for the proposed project. [See Appendix M, Market Study.](#)



The following points summarize the *supply* for heavy industrial real estate in the Central Maui region at this time.

- When compared to the light industrial market segment, there is very little developable heavy industrial land in Central Maui;
- Available vacant land is located in areas that are not conducive to heavy industrial use, due to the proximity of residential and commercial developments;
- Supply has diminished because of continued conversion to higher-order commercial retail/office uses allowed by the pre-existing *M-2, Heavy Industrial District's* "stacked" (or pyramid) zoning;
- Other than the Proposed Project, there are no other heavy industrial projects planned for Central Maui

The following points summarize the *demand* for heavy industrial real estate in the Central Maui region at this time:

- The growth of Maui's population has led to a greater need for light industrial goods and services providers; however, there has not been a coinciding creation of heavy industrial facilities to support light industrial users.
- Mortgage interest rates continue to be at all-time lows, which typically make real estate more affordable; however, there are few choices currently available within the heavy industrial market.
- The pent-up demand from heavy industrial users is expected to generate good interest for the proposed product.
- Potential businesses within the proposed subdivision are expected to be businesses that fabricate, process and manufacture materials needed by light industrial users and the general populace.

As noted in the Market Study, the proposed project is expected to be well received when considering current supply and demand considerations and other factors that are presently influencing the heavy industrial real estate market in Central Maui. The study also anticipates that the heavy industrial lots in the proposed subdivision can be sold within a 10-year period, which would translate into an absorption rate of approximately 6.6 acres per annum.

Economic impacts associated with development activities for the proposed project include the following.



1. Construction of the Subdivision and Complete Build-Out. It is assumed that the entitlement process will take approximately 4 to 5 years, with *subdivision construction* to begin in 2016. According to the land owner, *subdivision construction* costs are projected to be \$20,000,000, while the forecasted construction time is approximately 30 months, with an average construction cost of \$8,000,000 per year.

Based on an average lot size of 102,491 square feet, and an assumed building-to-land ratio of 30 percent, the average building size in the subdivision is projected to be about 31,000 square feet. Assuming the site work cost for each lot is approximately \$307,000 and the building construction cost is \$125 per square foot, the average development cost per building is forecasted to be \$6,232,000 or \$174,504,000 for 28 buildings. It is also assumed that complete *build out of the subdivision* would take about 10 years, resulting in an average cost of \$17,504,000 per year. It is also assumed that the preceding costs are inclusive of all site work, roads, utilities, and landscaping and includes the cost of hiring various engineers (e.g. civil, mechanical, electrical, traffic) and consultants (soils, land use planning, archaeology, real estate appraiser).

2. Indirect Sales. Development and construction activities will also generate indirect sales, through the supply of goods and services to various construction companies and as a result of the “trickle down effect” to families of the employees. By the same token, the suppliers and their families will purchase goods and services from other companies thereby extending the cycle. This cause and effect scenario will continue repeating itself with some revenues eventually leaking out of Hawaii’s economy with each cycle.

Based on State economic multipliers, off-island indirect sales are projected to be about \$5,920,000 per year during the *subdivision construction*, while Maui indirect sales are forecasted to be approximately \$4,144,000 per year.

For the subsequent complete *build out of the subdivision*, off-island indirect sales are projected to be about \$14,348,000 per year. Meanwhile, Maui indirect sales during this period are forecasted to be approximately \$10,044,000 per year.

3. Sales of the Heavy Industrial Lots. The 28 lots will have a total net land area of about 65.88 acres or approximately 2,869,733 square feet of heavy industrial zoned land. With a preliminary assumption of \$20.00 per square foot, lot sales are projected to generate gross sales revenue of about \$57,395,000.
4. Taxable Expenditures and Sales. Sales generated by *subdivision construction* are projected to total \$2,129,000 per year and are assumed to result from the personal spending by construction workers and indirect employees during this period. These sales are subject to the State’s General Excise Tax (GET) of 4.166 percent.



Intermediate sales, taxed at 0.5 percent, would result from construction expenditures and indirect sales related to *subdivision construction*, less personal spending by construction workers and indirect employees. As such, intermediate sales during *subdivision construction* are forecasted to be \$15,935,000 per year. When added to final sales, taxable expenditures and sales would amount to \$18,064,000 annually.

Final sales generated by the subsequent *build out of the subdivision* are projected to total \$10,411,000 per year and are assumed to result from the sales of subdivision lots plus the personal spending by construction workers and indirect employees during this period. These sales are subject to the State's GET of 4.166 percent.

Intermediate sales, taxed at 0.5 percent, would result from construction expenditures and indirect sales related to the *build out of the subdivision* less any personal spending by construction workers and indirect employees. As such, intermediate sales during the *build out of the subdivision* are forecasted to be \$34,731,000 per year. When added to the final sales, taxable expenditures and sales would amount to \$45,142,000 annually.

5. Profits Realized. Projected profit and risk premiums from *subdivision construction* are projected to be \$2,206,000 per year, over the 30 month construction period. Meanwhile, forecasted profit and risk premiums from the complete *build out of the subdivision* are expected to total \$5,387,000 per year over the 10-year period and factor in direct and indirect sales at all levels of business. For example, the land owner, general contractor, subcontractors, and goods and service providers all expect to make a profit for their efforts.
6. Direct and Indirect Employment. The design and entitlement process for the project creates new job opportunities for architects, engineers, surveyors, and land use planners. Site work and infrastructure development typically utilize heavy equipment operators, tractor-trailer drivers and utility personnel. Building construction and onsite improvements will require masons, painters, plumbers, roofers, carpenters, electricians, sheet metal workers, and drywall installers. Finish work will require landscapers, cabinet makers, carpet and tile installers, and interior decorators.

Construction employment will also provide hardware stores, building supply companies, equipment rental companies, and shipping, delivery, and warehousing companies with an opportunity to supplement their labor force. Construction laborers and their families will help support local goods and service providers and create or expand employment opportunities for other businesses in the community.

Based on State economic multipliers, direct jobs on Maui are projected to average 32 jobs annually, while indirect jobs are forecasted to average 33 jobs annually, resulting in an estimated annual average of 65 Maui jobs directly and indirectly tied to the *subdivision construction*. Meanwhile, indirect employment on Oahu could possibly add an average 17 jobs per year.



For the complete *build out of the subdivision*, 70 direct and 72 indirect Maui jobs are projected annually, resulting in an estimated annual average of 142 Maui jobs directly and indirectly tied to *build out of the subdivision*. Meanwhile, indirect employment on Oahu could possibly add an average of 38 jobs per year.

7. Direct and Indirect Payroll. Payroll directly related to *subdivision construction* is estimated to be \$1,962,000 per annum based on statistics from the State Department of Labor and Industrial Relations (DLIR) and previously referenced job counts. It is assumed that most construction positions will be filled by Maui laborers. Indirect Maui payroll is projected to be \$1,206,000 per year, while indirect Oahu payroll is forecasted to be \$703,000 annually. Total direct and indirect payroll attributed to the *subdivision construction* is estimated to be \$3,871,000 per year.

Payroll directly related to the complete *build out of the subdivision* is projected to be \$4,292,000 per annum. Construction positions are expected to be filled by Maui laborers. Indirect Maui payroll is forecasted to be \$2,632,000 per year, while indirect Oahu payroll is estimated to be \$1,570,000 annually. Total direct and indirect payroll attributed to the *build out of the subdivision* is projected to be \$8,494,000 per year.

8. Supported Population. Statistical information obtained from the DLIR indicates that 70 residents per year on Maui are expected to be supported by construction jobs related to *subdivision construction*, while 73 residents per year are expected to be supported through indirect jobs. About 36 Oahu residents are expected to be supported by indirect jobs created by the project. A total of 179 residents per year on Maui and Oahu are expected to be supported by *subdivision construction*.

About 154 residents per year on Maui are expected to be supported by construction jobs associated with the complete *build out of the subdivision*, while as many as 158 residents per year are expected to be supported through indirect jobs. Approximately 80 Oahu residents per year are expected to be supported by indirect jobs created by the project. A total of 392 residents per year on Maui and Oahu are expected to be supported by the *build out of the subdivision*.

9. Supported Households. Statistical information obtained from the DLIR indicates that as many as 24 households per year on Maui may be supported by construction jobs related to *subdivision construction*, while as many as 25 households per year may be supported through indirect jobs. As many as 12 Oahu households per year may be supported by indirect jobs created by *subdivision construction*. A total of 61 households per year on Maui and Oahu may be supported by *subdivision construction*.

About 52 households per year on Maui are expected to be supported by construction jobs associated with the complete *build out of the subdivision*,



while as many as 54 households are expected to be supported through indirect jobs. Approximately 26 Oahu households per year are expected to be supported by indirect jobs created by the *build out of the subdivision*. A total of 132 households on Maui and Oahu are expected to be supported by the *build out of the subdivision*.

Economic impacts at stabilization of the project include the following.

1. Employment and Wages. As previously noted, the average lot size in the proposed subdivision is expected to be 2.353 acres. With a floor area to lot area ratio of 30 percent, the average building in the subdivision is projected to be about 31,000 square feet. Assuming a ratio of 500 square feet per employee, the proposed subdivision is forecasted to have approximately 1,736 employees upon stabilization. Assuming an average annual wage of \$38,025 per employee, the combined annual wages of the subdivision workforce is estimated to be \$66,011,000.
2. Gross Sales Revenue and Profit. Given its proposed heavy industrial use, \$250 gross sales revenue per square foot was assumed and applied to the total building area of the proposed subdivision. This resulted in estimated annual gross sales revenue of \$217,000,000 for the subdivision. Assuming an average profit margin of 10 percent, the annual profit generated within the subdivision from the gross sales revenue was calculated to be \$21,700,000 per year
3. Property Values. Upon stabilization of the proposed subdivision, average property value is assumed to be \$6,232,000, or \$174,504,000 for the entire subdivision.

Public costs and benefits which would accrue to the County and State due to development activities for the proposed project include the following.

1. County of Maui.

The County typically accumulates revenue from development projects in the form of permit and impact fees. Permit fees cover the County's cost of providing services such as plans review, inspections, and public hearings, etc. Impact fees are more commonly associated with residential development; although as with commercial and industrial development, the amount of the fees is usually based on offsetting the anticipated additional cost and burden on County services and facilities. In either case, no net cost or benefit was considered at the County level.

Cumulative expenditures typically include the County's share of infrastructure costs for expanding or improving water, sewer, drainage, and roadway systems or providing parks and playgrounds if applicable. It is assumed that the land owner will bear the vast majority of these development costs.



2. State of Hawaii

The majority of the revenues that will accrue to the State will be in the form of various taxes, such as Conveyance Tax, Excise Tax, Corporate Income Tax, and Personal Income Tax. For purposes of the Market Study, a conveyance tax based on \$0.20 per \$100 of value has been utilized for lot sales. With an average lot value of approximately \$2,357,000, the conveyance tax that would be due is about \$132,000.

Excise tax is based on two rates, 4.166 percent for final sales and 0.5 percent for intermediate sales. Over the course of subdivision construction and the subsequent build out of the subdivision, the cumulative tax expectancy for final sales would amount to \$4,559,000, while intermediate sales should equal \$6,495,000.

Corporate Income Tax is realized on profits gained through subdivision construction and the subsequent build out of the subdivision which is projected to be \$3,801,000. Meanwhile, personal income tax is forecasted to be \$3,974,000. As such, cumulative revenues related to subdivision construction and the subsequent build out of the subdivision would amount to \$14,401,000.

Cumulative expenses to the State are not expected. The primary access point to the proposed subdivision is at Mokulele Highway, a State roadway with a signalized intersection. Since heavy commercial truck traffic already exists in the area, it is assumed that there would not be a need to expand traffic control measures on Mokulele Highway. Notwithstanding this, it is assumed that the land owner will bear the vast majority of any required roadway improvement costs.

Public costs and benefits which would accrue to the County and State at stabilization of the project include the following.

1. County of Maui

Upon stabilization, benefits that would accrue to the County will be in the form of real property taxes. As previously noted, the net taxable value of 28 improved heavy industrial lots is determined to be about \$165,895,000. The 2011 tax rate for industrial land (PITT Code 400) is \$7.00 per \$1,000 of assessed value. As such, the tax obligation for the 28 improved lots is calculated to be \$1,161,000 per year.

The proposed project will be built on TMK (2) 3-8-008-019. According to the County's Real Property Tax Division, the land owner currently pays approximately \$3,000 per year in property taxes. This amount was deducted from its annual revenues at stabilization since the County will no longer receive this income. The resulting net real property tax revenue at stabilization is estimated to be about \$1,158,000 annually.



The County's annual costs at stabilization are for general services, public safety, and infrastructure maintenance. These expenditures are more commonly attributed to residential development; however, for purposes of the Market Study, proportionate per-capita annual expenditures were utilized and were based on the assumption that each employee is also a resident of Maui County. The Market Study notes that by using this methodology the results represent what is likely the high end of the annual cost expectancy to the County.

On a per-capita basis, the annual cost for services is projected to be about \$2,779 per year, plus debt service of \$226 per year. Assuming each employee spends about 20 percent of their time at the job site, the proportionate annual cost for County services is forecasted to be \$556, with proportionate annual debt service of \$45. The resulting net cost is estimated to be \$1,043,000.

2. State of Hawaii

Upon stabilization, benefits that would accrue to the State would be through the receipt of Personal Income Tax, Excise Tax, and Corporate Income Tax as a result of the ongoing businesses. On an annual basis, personal income tax from (subdivision) employee wages would amount to \$2,772,000, while excise tax on the gross sales revenue of the businesses is projected to be \$9,040,000 per year. Corporate income tax as a result of the gross sales revenue of the businesses is forecasted to be \$1,389,000 per year. Total annual revenues at stabilization are estimated to be \$13,201,000.

Annual expenditures to the State were said to be from services to residents, and debt service attributed to general improvements. Proportionate per-capita annual expenditures were utilized, similar to the County cost analysis. The Market Study notes that by using this methodology, the results represent what is likely the high end of the annual cost expectancy to the State.

On a per-capita basis, the annual cost for services is projected to be about \$7,442 per year, plus debt service of \$359 per year. Assuming each employee spends approximately 20 percent of their time at the job site, the proportionate annual cost for County services is forecasted to be \$1,488, with proportionate annual debt service of \$72. The resulting net cost is estimated to be \$2,708,000.

The development of the proposed subdivision is expected to generate significant expenditures by the land owner, as well as by secondary owners and those involved in the separate development of the heavy industrial lots. These investments are expected to have a beneficial impact upon both State and County economies on a broad scale and in a multitude of ways.



1. Site work and infrastructure construction for the proposed subdivision will immediately infuse capital into the County and State economies. Numerous consultants will be involved in the initial planning stages and the construction trades will benefit from the jobs created by the project.
2. Advertising for the proposed project and the marketing of the lots will benefit graphic artists, advertising companies, newspapers, real estate sales agents, escrow companies, etc.
3. Site work and the development of each individual lot (by secondary owners) will result in additional work for engineers, architects, material suppliers, equipment rentals and sales, landscaping companies, and other related industries.
4. The new buildings (by individual lot owners) will not only attract existing businesses but should also stimulate the generation of new businesses and employment growth. This will have an indirect affect on retail businesses, restaurants and service establishments as the expanded workforce purchases goods and services. This cause and effect scenario should pass through the entire community, causing a ripple effect and increase the amount of capital flowing through Maui.
5. Upkeep of the proposed subdivision and buildings will also translate into work for maintenance companies, painting companies, real estate management and leasing groups, etc.
6. During the development of the proposed subdivision, fiscal benefits to the State of Hawaii will be realized through the receipt of additional income tax, general excise tax, and conveyance tax associated with construction activities. Based on the assumptions contained in the Market Study, the cumulative benefits over the course of the development, which includes subdivision construction and subsequent build out of the subdivision, are anticipated to outweigh the public cost to the State.
7. Upon stabilization, fiscal benefits from the ongoing operation of the proposed subdivision will include increases in real estate taxes collected by the County of Maui, as well as additional income tax and general excise tax inflow for the State of Hawaii. Based on the assumptions contain in the Market Study, the resulting annual public benefits are expected to consistently outweigh annual public costs, at both the County and State levels.

In light of the foregoing, the proposed project will have a positive effect on the State and local economy and is not expected to have an adverse impact on market conditions in the State of Hawai`i and the County of Maui.

3. Agriculture

Existing Conditions. An assessment of agriculture on the island of Maui was prepared for the proposed project by ACM Consultants, Inc. [See Appendix N,](#)



[Agricultural Impact Assessment](#). The purpose of the report was to analyze the local agricultural real estate market in an effort to determine general and specific effects arising from the development of the proposed project.

According to the State Land Use Commission, about 1,930,224 acres of the approximately 4,112,388 acres of land in Hawai'i lies within the State Agricultural District. In the County of Maui, lands within the State Agricultural District encompass 402,354 acres.

The majority of agricultural land in Hawai'i is owned by the State and private land owners. Corporations with historical ties to commercial sugar and pineapple cultivation, cattle ranching, and land trusts hold much of the privately-owned land. In its prime, commercial agriculture in Hawai'i was dominated by field crops, such as sugar cane, pineapple and coffee. Rising global competition, higher operational and shipping costs, and increased fuel costs contributed to the loss of profitability and the decline of these industries.

Research of vacant, agricultural-zoned land has revealed that over 70 percent of this land in each County is owned by large landowners – those who control over 1,000 acres. In the County of Maui, there are 5,653 vacant, agricultural-zoned parcels encompassing 198,864 acres, with large landowners controlling 151,147 acres. The ratio of the acreage owned by large landowners to total acreage is 76 percent. Based on this research, it appears that of 1,218,005 acres of vacant, agricultural-zoned land, at least 875,352 acres are owned by 91 government entities and private land owners. Many of these large landowners choose to hold or lease their land rather than make it available for sale on market. While there are currently more than 71,000 vacant, agricultural-zoned parcels across the State, the available supply in each market is significantly less. Notwithstanding this, the present supply seems to be enough to satisfy demand as evidenced by the annual contraction of farm land.

Over the past 30 years, there has been a significant shift in the farming industry. The current trend for farms has shifted from large-scale commercial operations to smaller, more diverse crop production.

During the 20th century, agriculture on Maui had been dominated by Maui Land and



Pineapple Company (ML&P) and Hawaii Commercial and Sugar Company (HC&S). In 2007, ML&P shut down its canning factory to rely solely on the more profitable fresh fruit market. Downsizing of the plantation occurred in 2008, which resulted in the termination of over 200 employees. In December 2009, ML&P announced that it would be terminating pineapple cultivation citing continuing annual losses. Shortly thereafter, Hali`imaile Pineapple Company resumed cultivation after acquiring ML&P's pineapple operations.

HC&S survives as Hawai`i's only remaining sugar operation due to several contributing factors: (1) its economy of scale, (2) its compact and contiguous location in the Central Maui isthmus, and (3) its commitment and ability to reinvest and upgrade its factory and equipment.

Land Capability Grouping (non-irrigated) data from the Natural Resources Conservation Services of the U.S. Department of Agriculture (USDA) indicates that the subject parcel has soil that basically consists of Subclass VII's with some parts designated Subclass VI's. Subclass VII's soils have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. Also included in this group are land types that are steep, rocky, or stony. Subclass VI's soils have severe limitations because of stoniness or unfavorable texture. These soils are very stony, very rocky, extremely stony, or extremely rocky and have slopes of 0 to 35 percent.

The *Detailed Land Classification – Island of Maui (1967)* contains productivity ratings for land, which were prepared by the University of Hawaii's Land Study Bureau (LSB). According to this document, about 66 percent of the land underlying the project site has an overall productivity rating of "E73", while the remaining portion of the site has a rating of "E71". On the LSB ratings scale, the letter "A" represents the highest class of productivity, while "E" reflects the lowest. [See Figure 10, Soil Productivity Ratings.](#) The State has established three classes of agriculturally important lands to the State of Hawai`i: (1) Prime agricultural land, (2) Unique agricultural land, and (3) Other important agricultural land.

Prime agricultural land is land best suited for the production of food, feed, forage, and fiber crops. Unique agricultural land is land other than prime agricultural land and is



used for the production of specific high-value food crops. Other important agricultural land is land other than Prime or Unique agricultural land that is of Statewide or local importance for the production of food, feed, fiber, and forage crops. Agricultural land that does not fall into any of these categories is designated as Unclassified or Residual. The map identifying the Agricultural Lands of Importance to the State of Hawaii (ALISH) indicates that the land underlying the project site is Unclassified (i.e., residual land). [See Figure 11, Important Agricultural Lands.](#)

Herbicides and pesticides that HC&S has historically used for their agricultural operations include the following (PBR Hawaii, December 2004).

- Aatrex 90 (*active component* - atrazine; *use* - weed control)
- Amine 4 (*active component* - 2, 4-D; *use* - weed control)
- Aqua Master (*active component* - glyphosate; *use* - weed control)
- Banvel (*active component* - dimethylamine salt of dicamba; *use* - weed control)
- Ethrel (*active component* - ethephon; *use* - tassel control)
- Evkik 80 W (*active component* - ametryn; *use* - weed control)
- GB-1111 (*active component* - petroleum oil; *use* - mosquito control)
- Karmex (*active component* - diuron; *use* - weed control)
- Pentagon 60 WDG (*active component* - pendimethalin; *use* - weed control).
- Polado L (*active component* - glyphosate; *use* - plant growth regulator)
- Roundup Ultra (*active component* - glyphosate; *use* - weed control)
- Vecto Bac (*type* - nonchemical biological agent; *use* - mosquito control)
- Velpar (*active component* - hexazinone; *use* - weed control)

Fertilizers used by HC&S for its sugar cane cultivation activities include the following (PBR Hawaii, December 2004).

- Urea (*use* - source of nitrogen)
- Potash solution (*use* - source of potassium)

Potential Impacts and Mitigation Measures. As of 2009, the USDA's National Agricultural Statistics Service reported that there were approximately 230,000 acres of farm land in the County of Maui. When compared to the 355,786 acres reported in 1992, the 2009 figure represents a drop of over 125,000 acres or about 35 percent of



the farm land in Maui County. This loss amounts to a straight line decrease of almost 7,000 acres per year or 2 percent per annum.

With a land area of 86 acres, the subject parcel represents only 0.0002 percent of State Agricultural District lands on the island of Maui, and just 0.0004 percent of farm land in Maui County. In addition, the 86 acres amounts to only 1.2 percent of the average annual contraction for Maui County. As previously noted, if the easement for the primary access route to the site is not granted, an alternate access route will be provided in large part by Alexander & Baldwin, Inc. via an easement along the east side of an existing HC&S irrigation reservoir. The reclassification of the subject parcel for heavy industrial use and the use of agricultural land for the alternate access road will have a very minimal effect on the inventory of land that is currently available for agricultural use.

After completion, operational activities in the subdivision could produce noise, dust, or other effects that are commonly associated with heavy industrial uses. However, these effects are not expected to have an adverse impact on surrounding properties since existing land uses at Maui Raceway Park and the Hawaiian Cement Quarry mutually accommodate the effects of their activities.

Agricultural activities that have occurred on the project site include hog farming and sugar cane cultivation. Since the subject parcel is not being used for agriculture, no agricultural jobs or revenues will be affected by the development of the proposed project.

As previously noted, the soils underlying the project site have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. In addition to an overall productivity rating of "E" (the lowest rating), the site is categorized as Unclassified (or residual) land by the map identifying Agricultural Lands of Importance to the State of Hawai'i. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, the long-term agricultural/economic impact resulting from the development of the proposed project is expected to be very minimal.



While the proposed project would reclassify agricultural lands for heavy industrial use, the project is expected to generate significant expenditures by the land owner and lot owners. The businesses in the proposed subdivision are expected to generate a significant, ongoing revenue stream which would benefit the State and County through job creation; additional direct and indirect sales expenditures; and increased tax revenues and fees.

The subject property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan. The site is also adjacent to Project District 10 (Old Pu'unene Airport area), a recreational and expansion area which is currently being master planned to meet future recreational needs and provide areas for industrial activities (including government facilities) whose locations are better suited away from urban areas.

In consideration of the foregoing factors, which include sufficient agricultural supply and demand; current agricultural trends; poor subject soil quality; and complementary surrounding uses, any agricultural impacts attributable to the proposed project are expected to be negligible. The development of the proposed project also comports with the County's long-range plans for the area.

The use of chemicals and fertilizers will be limited to the establishment and maintenance of landscape plantings for the subdivision's common areas. Lot owners will be responsible for planting and maintaining their onsite landscaping. Pesticides will be used minimally for treatment purposes and not as a preventative measure. In addition to aesthetics, the selection of landscape materials will be based upon hardiness, drought tolerance, and resistance to pests. Fertilizers with a mixture of nitrogen, phosphorus, and potash would be applied to grassed areas, ground cover, and flowering shrubbery. By employing appropriate irrigation techniques, any leaching of fertilizers would be negligible.

The land owner will inform prospective lot owners of occasional noise and air quality impacts associated with sugar cane cultivation. Prospective buyers will also be informed that Chapter 165, HRS entitled *Hawaii Right to Farm Act* limits the circumstances under which pre-existing farming operations may be deemed a nuisance. In addition, the subdivision's Lot Owner's Association and HC&S will work



together to ensure that agricultural activities are not adversely affected by heavy industrial activities in the subdivision..

The proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for large-scale or diversified agricultural activities.

C. PUBLIC SERVICES AND FACILITIES

1. Recreation

Existing Conditions. The subject property is located in the Kihei-Makena Community Plan region. The Maui Department of Parks and Recreation (DPR) operates and maintains a total of 16 parks in the South Maui region, including community and recreational facilities such as the Kihei Community Center and the Kihei Aquatic Center. In addition to the Elleair Maui Golf Club in Kihei, privately owned golf courses and tennis courts at the Makena and Wailea Resorts are open to the public.

Potential Impacts and Mitigation Measures. The proposed project does not trigger any of the following County requirements for park dedication: (1) a building or group of buildings containing or divided into three or more dwelling or lodging units, (2) a conversion of buildings from hotel to residential use, (3) the addition of dwelling or lodging units to a building or group of buildings in which the total unit count is three or more, (4) a subdivision within a project district, and (5) dwelling units and apartments associated with condominium property regimes.

In commenting on the Draft EA, the DPR stated that it was seeking a water source to address the Maui Raceway Park's (MRP) needs. [See July 10, 2012 letter in Appendix S, Draft EA Comment Period.](#) In response to these comments, the applicant met with the DPR on August 6, 2012. Although a ¾-inch meter currently serves the MRP, the DPR would like a larger 1-1/2 inch meter but were informed by the Maui Water Department that a larger meter is unavailable. As a result, the DPR has been pursuing other potential water sources for the MRP. The private water system for the proposed project was also discussed. The land owner offered to hold follow-up discussions with the DPR to help develop a water system for the MRP on a



pro-rata basis. However, because no County funds are available, the DPR indicated that it will likely refocus its efforts to obtain the larger water meter.

The proposed project will not have a significant impact upon recreational facilities.

2. Police and Fire Protection

Existing Conditions. The Maui Department of Police is responsible for the preservation of the public peace, prevention of crime, and protection of life and property. The department's Kihei Patrol District is one of six such districts in Maui County. In addition to regular patrol duties, the Kihei Patrol District has a substation at 1881 S. Kihei Road, across from the Kihei Town Center, as well as programs for visitor and community oriented policing, and citizen patrols.

The mandate of the Maui Department of Fire and Public Safety is to protect life, property, and the environment from fires, hazardous material releases and other life-threatening emergencies. The department has 14 stations throughout the County including 10 stations on the island of Maui. In South Maui, the department has two stations, one in Kihei at 11 Waimahaihai Street and another in Wailea at 300 Kilohana Drive.

Potential Impacts and Mitigation Measures. Existing security measures for the subject parcel include perimeter fencing around the property and locked entry gates at roads providing access to the site. Appropriate lighting and security measures will be utilized during and after construction of the proposed project for crime prevention and deterrence and to ensure safe vehicular movement. In addition, the project shall be developed in accordance with County fire protection requirements for fire flow and hydrant spacing, as well as the grade and clear widths of service roads.

The proposed project will not have an adverse effect upon the service capabilities of police, fire, and emergency medical operations nor will it extend the existing service area limits for emergency service.

The private water system for the proposed subdivision will provide water for drinking water and non-drinking water (irrigation, fire flow) purposes. As subdivision lots are developed in the future, lot owners will be required to submit fire flow calculations to



the Department of Fire and Public Safety in conjunction with the building permit review and approval process.

3. Schools

Existing Conditions. The State Department of Education operates several public schools in the Kihei area: Kamali'i Elementary School, Kihei Elementary School, and Lokelani Intermediate School. Area students from Grades 9 to 12 attend Maui High School in Kahului. Other schools in the area include the Montessori School (ages 3 to 14) and Kihei Charter School (Grades K to 12).

Potential Impacts and Mitigation Measures. The proposed project does not include a residential housing component. As such, no significant impacts to existing educational facilities are anticipated.

4. Health Care

Existing Conditions. Located in Wailuku, the approximately 200-bed Maui Memorial Medical Center provides acute and emergency health care services for the County of Maui. Various private care physicians and clinics in the West Maui region also provide medical care and out patient services. In addition, American Medical Response (AMR) provides 24-hour emergency medical service through ten ambulance facilities stationed throughout the County, including eight facilities on the island of Maui and two facilities in Kihei.

Potential Impacts and Mitigation Measures. The proposed project is not expected to generate a demand for new or additional health care facilities nor will it have an adverse impact upon existing medical services. In addition, the proposed action will not adversely impact the ability of ambulances to respond to medical emergencies.

5. Solid Waste Disposal

Existing Conditions. The Solid Waste Division of the Maui Department of Environmental Management is responsible for the collection and disposal of single-family residential waste on the island of Maui. Private waste disposal contractors provide refuse collection for commercial and non-residential properties.



County landfills located in Hana, Central Maui, Lanai, and Molokai accepts residential and commercial solid waste for disposal. In addition to the disposal of solid waste, the Central Maui Landfill, which is located near Pu`unene, contains recycling, and composting facilities and also accepts green waste and used motor oil. The Maui Demolition and Construction Landfill, a commercial facility near Maalaea, accepts construction and demolition waste for disposal.

Potential Impacts and Mitigation Measures. During site work for the proposed subdivision, cleared and grubbed material may be used as mulch or transported to the County's green waste recycling facility at the Central Maui Landfill for disposal. Construction waste material would be hauled to the Maui Demolition and Construction Landfill for disposal.

After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to an association of subdivision lot owners. The refuse generated by the proposed subdivision is not expected to have an adverse effect upon solid waste collection and disposal services and facilities.

D. INFRASTRUCTURE

1. Water

Existing Conditions. Domestic water service for the island of Maui is provided by a public water system which is operated and maintained by the Maui Department of Water Supply (DWS). In addition to Wailuku-Kahului and Kihei-Makena, the department's Central Maui System serves, Waihe`e, Waiehu, Waikapu, Maalaea, Spreckelsville, and Paia.

The main supply sources for the Central Maui System include the Waihe`e Aquifer, the Iao Tunnel, the Iao-Waikapu Ditch, and the Iao Aquifer, which was designated as a protected water source in 2003 by the State Commission on Water Resource Management,

The Central Maui System does not extend to or serve the project site, although an 8-inch County water line along Kama`aina Road serves some of the surrounding



properties. From this point, the water is conveyed to Kihei via a 36-inch transmission line along Mokulele Highway.

The Central Maui System is currently at or near capacity and may not be able to provide sufficient source or storage for the proposed project. In light of the foregoing, Tom Nance Water Resource Engineering (TNWRE) prepared a report in September 2011 which examined the development of onsite groundwater to provide drinking water and non-drinking water for the proposed project. [See Appendix O. Groundwater Resource and Water System Assessment.](#) The report examines groundwater resources in the area, provides estimates of the drinking water and non-drinking water needs for the project, identifies the water system infrastructure required to meet this need, and analyzes the probable effect the project may have on groundwater resources.

Groundwater Resources. Data on groundwater occurrence in the Central Maui isthmus comes primarily from wells, a number of which HC&S have used for sugar cane irrigation for more than 70 years. Groundwater in the isthmus occurs as relatively thin basal lens floating on saline groundwater at depth and in hydraulic contact with seawater along the Kahului and Ma`alaea coastlines. The Kahului Aquifer has drinking water quality in some locations and brackish water in most of its remaining area. The proposed project plans to use the underlying brackish groundwater and will not be utilizing a drinking water supply. In addition, there are no existing or proposed *other* higher priority water uses of groundwater in this part of the Kahului Aquifer.

As designated by the State Commission on Water Resource Management (CWRM), the Kahului Aquifer has a sustainable yield of 1.0 million gallons per day (MGD), an amount which is based exclusively on rainfall recharge on less than half of the aquifer's total area and does not account for other sources of recharge. Other sources of recharge (natural and man-made) are substantially larger: underflow from Haleakala, surface runoff from Haleakala, underflow from the West Maui Mountains, surface runoff from the West Maui Mountains, leakage from the East Maui and Waihe`e Ditch systems, and irrigation return from HC&S sugar cane fields. Historically, the sources of recharge have supported pumpage from the aquifer of 45 MGD for many decades.



The rainfall runoff as underflow from outside the aquifer, particularly from Haleakala, would sustain an order of magnitude yield greater than the 1.0 MGD sustainable yield specified by CWRM even if HC&S were to cease operations including its importation of ditch water. Present pumpage is in excess of 25 MGD, most of it by HC&S. The total estimated groundwater use for the proposed project is roughly 0.5 MGD. The location of this draft is miles from the nearest wells and will have no impact on these wells. If HC&S no longer cultivates sugar cane, a substantial amount of that aquifer's recharge would be reduced or eliminated altogether. However, it would also mean that about 25 MGD of pumpage from the aquifer would also cease. The wells for the proposed project are well positioned, with respect to the aquifer's natural sources of recharge, to continue to be viable.

Drinking Water and Non-drinking Water Requirements. To estimate the projected drinking water and non-drinking water demand for the proposed project, the DWS design standard for industrial development of 6,000 gallons per day per acre was used. The landscape irrigation demand for the subdivision's internal roadway system and drainage retentions basins were also factored in. The 30/70 ratio that the City and County of Honolulu uses for drinking water and non-drinking water uses on industrial lands was utilized in determining the project's estimated drinking water demand. Based on the foregoing, the projected drinking water demand is estimated to be an average of 118,800 gallons per day (gpd), while the non-drinking water requirement is projected to be an average of 305,200 gpd.

Proposed Water System Infrastructure. To provide an onsite groundwater supply for drinking water and non-drinking water uses, the TNWRE report recommends the installation of three wells with a capacity of 300 gallons per minute (gpm) each, including standby capacity. To treat the well water for drinking water use, the report proposes three reverse osmosis (RO) treatment trains with a capacity of 75 gpm each, with one train providing standby capacity. For water storage, the report recommends a 0.25 million gallon (MG) reservoir for drinking water storage and a 0.40 MG reservoir for non-drinking water storage.

Since both reservoirs would be at grade and therefore would not provide sufficient pressure for drinking water and non-drinking water uses, two automated, multiple pump stations would be installed to maintain pressure throughout each of the



distribution systems. To ensure fire protection is not impacted by a power outage, backup generator power will be provided for the non-drinking water booster pump.

The source wells, RO treatment trains, storage reservoirs, and pump stations would be located near the north end of the proposed subdivision.

Potential Impacts and Mitigation Measures. The TNWRE report also analyzed the probable effect the proposed project may have on groundwater resources. [See Appendix O, Groundwater Resource and Water System Assessment](#). Further discussion of these probable effects follows below.

Impacts on Groundwater Resources. Since the ground surface across the subject parcel is very permeable and because there are no natural drainageways across the property, storm water runoff flowing onto the project site from up gradient areas or from the site onto down gradient areas is not known to occur. The conceptual development plan for the subdivision calls for transporting the runoff into retention basins along the western edge of the site where it will evaporate and/or percolate into the ground. As such, the proposed project will not impact surface water sources. Its impacts will be limited to the underlying groundwater. These effects, which are quantified in detail in the TNWRE report, will consist of the following.

- Withdrawal of groundwater for non-drinking water use and as feed water for the RO treatment process to produce drinking water.
- Disposal of the RO concentrate in onsite disposal wells.
- Disposal of treated domestic wastewater in leach fields.
- Percolation of excess landscape irrigation and industrial wash water.
- Change in the quality of onsite rainfall percolating to groundwater.

Groundwater Flow Rate. Since the aquifer's sources of recharge come from various directions and because there is significant pumping at all active HC&S well batteries, the direction and rate of groundwater flow is not precisely known. As such, the following approximations were made for assessment purposes.

- Beneath the project site, the direction of flow is from northeast to southwest; perpendicular to this direction, the width of the project site is 0.63 mile.



- The groundwater level is 3.6 feet above mean sea level.
- The groundwater gradient is on the order of 0.6 feet per mile, equivalent to 0.00112 ft/ft.
- The permeability coefficient is 10,000 feet per day.

For the preceding approximations, the groundwater flow rate beneath the project's 0.63-mile width is approximately 4.0 MGD.

Groundwater Quality. A short-term pump test and water quality sampling of an existing onsite well (State No. 4927-01) was conducted in July 2010. A relatively high level of nitrate-nitrogen, a result of ongoing agricultural activities was found. However, none of the detected constituents exceed the levels allowed by the U.S. Environmental Protection Agency (EPA) and the State Department of Health for drinking water use. During the pump test, the salinity of the pumped water was stable and only slightly brackish. It should be noted that Well 4927-01 is not in use nor is it suitable for use because it was improperly constructed and allows contaminants to enter groundwater via its open annular space. Also, the well casing is too small to be of any use and has come apart in numerous places.

For the aquifer as a whole, salinities are consistently low except near shore at the north end of Ma`alaea Bay where caprock is present. High nutrient levels, particularly nitrate-nitrogen, are present throughout the aquifer. For purposes of assessing potential project-related impacts to groundwater resources, the present quality of the groundwater underlying the project site was taken to be: salinity of 0.80 parts per thousand (PPT), nitrogen concentration of 330 micro-molar (μM), and phosphorus concentration of 3.4 μM .

Estimated Post-Development Changes to the Groundwater Flow Rate. The project's onsite wells will draw water from the underlying groundwater, but some of this water will be returned in the form of RO concentrate, wastewater from septic systems, excess landscape irrigation, and percolating wash water from the non-drinking water system. With the uses and returns to groundwater as estimated in the TNWRE report, the net consumptive use of groundwater would be 0.23 MGD. This would be a 5.8 percent reduction of the estimated 4.0 MGD flow of groundwater directly beneath the site.



Estimated Post-Development Changes to Groundwater Salinity and Nutrient Levels.

Based on data from onsite Well 4927-01 and others nearby, it was assumed that the underlying groundwater has a salinity of 0.8 PPT, a nitrogen content of 330 micromolar (uM), and a phosphorus content of 3.4 uM. This would also be the quality of water extracted by the supply wells. Except for the RO concentrate which will be delivered directly to groundwater, all of the other returns to groundwater described in the report will travel vertically through the sandy soil layer, alluvium, and unweathered lava to the groundwater below. These various strata will function as a trickling filter to naturally remove nitrogen and phosphorus. Expected removal rates are greater than 80 percent for nitrogen and more than 95 percent of phosphorus. The net effect to the 4.0 MGD of groundwater flowing directly beneath the project site is shown below.

- 5.7 percent reduction in flow rate.
- 3.8 percent increase in salinity.
- 1.3 percent increase in nitrogen.
- 7.1 percent increase in phosphorus.

All of these changes are modest and are considered to be insignificant from an aquifer-wide perspective. Currently, the only uses of groundwater down gradient of the project site are three wells in the Kealia National Wildlife Refuge. These wells are pumped seasonally when surface water is insufficient to maintain the pond and wetland areas. The estimated changes due to the development of the proposed project should have no impact on this ongoing use.

It should be noted that the proposed project plans to use the underlying brackish groundwater and will not be utilizing a drinking water supply. In addition, there are no existing or proposed *other* higher priority water uses of groundwater in this part of the Kahului Aquifer. For these reasons, the proposed water use is in conformance with the County's Water Use and Development Plan. This use is further supported by the approval of well construction and pump installation permits for the project by the State Commission of Water Resource Management (CWRM). [See Appendix O-1, CWRM Letter of Assurance for Well Nos. 4927-02 and 4927-03.](#)

A Preliminary Engineering Report (PER) for the proposed project was prepared by



Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report](#). The purpose of the PER was to examine the existing infrastructure in the project area, evaluate the adequacy of the infrastructure, and recommend infrastructure improvements for the proposed project.

The conceptual land development plan for the proposed project currently calls for subdividing the subject parcel to create 28 developable lots. The water development plan for the proposed project will involve the construction of a dual water system which will provide water for drinking water and non-drinking water (irrigation, fire flow) uses.

Groundwater drawn from three onsite wells will serve as the source for non-drinking water use and will also serve as the source for the reverse osmosis (RO) process which will treat the groundwater for drinking water use.

The drinking water system for the proposed subdivision is defined as a Public Water System by Chapter 11-20, HAR for the State Department of Health (DOH), since it will provide water for human consumption and has at least 15 service connections or regularly serves a minimum of 25 persons daily for at least 60 days annually. Public water systems are regulated by the department's Safe Drinking Water Branch.

Utilizing the Domestic Consumption Guidelines set forth by the Department of Water Supply (DWS), as well as dual water system guidelines that recommend using a 30/70 ratio (drinking water/non-drinking water) for industrial lands, the drinking water demand for the subdivision's developable lots was determined to be about 118,620 gallons per day (gpd).

The non-drinking water requirement for the subdivision's developable lots, internal roadway, and landscaped and irrigated common areas was calculated to be approximately 305,030 gpd. As set forth by DWS standards, the fire flow requirement for heavy industrial uses is 2,500 gallons per minute for a two-hour period, while the maximum spacing between fire hydrants is 250 feet. The fire flow requirements for the proposed project will be addressed by the project's non-drinking water system.

As set forth in the Groundwater Resource and Water System Assessment ([See Appendix O](#)), the following water system improvements are proposed for the



subdivision.

- A total of three wells with a capacity of 300 gallon per minute (gpm) each, with one well providing standby capacity.
- A total of three reverse osmosis treatment trains with a capacity of 75 gpm each, with one train providing standby capacity.
- A 0.25 million gallon (MG) storage reservoir for drinking water use.
- A 0.30 million gallon (MG) storage reservoir for non-drinking water use.
- The drinking water and non-drinking water systems will each require a booster pump with a backup generator power for the non-drinking water pump station to ensure fire protection during a power outage.

In order for the dual water system to function as designed, provisions for the maintenance of the system will be included in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision. An association of subdivision lot owners will be formed to assume the responsibility of operating and maintaining the system in accordance with the CC&Rs.

In their letter dated July 2, 2012, the State Commission on Water Resource Management (CWRM) approved the issuance of well construction and pump installation permits for the groundwater wells for the project. [See Appendix O-1, CWRM Letter of Assurance for Well Nos. 4927-02 and 4927-03.](#) The wells will be developed and operated in accordance with the *Hawai`i Well Construction and Pump Installation Standards* established by CWRM. These standards were created to protect and prevent the pollution, contamination, and wasting of groundwater, and minimize salt water intrusion into wells and groundwater.

In accordance with the Hawai`i Administrative Rules (HAR) for the DOH, the water system for the proposed subdivision will comply with all applicable provisions of Title 11, Chapter 20, HAR (*Rules Relating to Drinking water Systems*); Title 11, Chapter 21, HAR (*Cross-connection and Backflow Control*) and Title 11, Chapter 25, HAR (*Rules Pertaining to Certification of Public Water System Operators*).

It should also be noted that Section 11-20-29.5, HAR (*Capacity Demonstration and Evaluation*), requires all new private water systems to demonstrate appropriate technical, managerial, and financial capacity in order to receive DOH approval for



construction and operation. These requirements ensure that the water system is constructed to current County and DOH standards and has access to an adequate water source(s) both as to quality and quantity. Professional operation of the system by a private water system operations company using DOH certified operators, and ownership by an association that is solely responsible for all legal, and financial aspects of the system are among the requirements. Fiscal management by a professional financial management company and maintenance of adequate reserve funds to address emergencies and replacements ensure that financial requirements can be met. A developer funded cash reserve is required and can be returned to the developer only after the water association has successfully developed its own financial reserves. Recorded covenants on each parcel serviced by the system provide the water association with the ability to levy assessments to meet operational needs so that the system remains within regulatory requirements. Ultimately, the water association has the ability to lien properties serviced by the system to provide the resources to maintain the system in compliance with all applicable regulatory requirements.

Prior to the start of construction, an application for the subdivision's water system will be prepared and submitted to the DOH, Safe Drinking Water Branch for their review and approval.

The proposed water system improvements will also be consistent with the Rules and Regulations of the Department of Water Supply. As subdivision lots are developed in the future, lot owners will be required to submit fire flow calculations to the Maui Department of Fire and Public Safety in conjunction with the building permit review and approval process. Lot owners will be encouraged to utilize water conservation measures when developing their parcels in the future. Examples of such measures include, but are not limited to the following: automatic drip and sprinkler irrigation systems with time controllers and rain sensors, drought-tolerant landscape plantings, and low-flow plumbing fixtures.

Since heavy industrial uses will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. Nonetheless, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will



require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including regulations governing water use and water quality. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse long-term impacts to surface and groundwater resources nor will it affect the County's water system infrastructure.

2. Wastewater

Existing Conditions. The Maui Department of Environmental Management is responsible for a public wastewater system that handles the collection, transmission, treatment, and disposal of sewage in most areas of Central, South, and West Maui. In the Central Maui region, the department operates and maintains a network of sewer lines and pump stations that conveys sewage to the Wailuku-Kahului Wastewater Treatment Plant for treatment and disposal. There are no County wastewater facilities within or adjacent to the project site. The nearest County sewer system is located in Kihei, about 2.3 miles to the south of the site.

Potential Impacts and Mitigation Measures. A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) As previously noted, the closest County sewer system is in Kihei, approximately 10,000 feet south of the project site.

The Draft EA indicated that wastewater collection and treatment for the proposed subdivision originally would be handled by a private wastewater system consisting of



sewer transmission lines and manholes within internal subdivision roads. As lots within the subdivision are developed, lot owners would be required to install an individual wastewater system (IWS) on their lots and connect to a sewer lateral linked to the subdivision wastewater system. Wastewater from each lot would then be conveyed to a central leach field within the subdivision.

In their June 19, 2012 letter commenting on the Draft EA, the State Department of Health's (DOH), Wastewater Branch indicated that it will not allow multiple IWS to discharge into a central leach field and that a separate leach field must be provided for each IWS. [See Appendix S, Draft EA Comment Period](#). In response to these comments, the wastewater treatment plan for the proposed subdivision has been modified to call for the installation of an IWS consisting of an aerobic treatment unit and leach field for each lot. As indicated by the DOH, this type of IWS can be used within 1,000 feet of drinking water sources and wells. The cost and installation of the IWS will be borne by individual lot owners when their lots are developed in the future.

All lot owners must comply with Chapter 11-62, HAR (*Wastewater Systems*), which ensures that the disposal of wastewater (including gray water) does not contaminate or pollute water resources, create a public nuisance, and does not pose a hazard or potential hazard to public health, safety, and welfare. As lots within the subdivision are being developed, lot owners must submit their IWS plans to the DOH for review and approval.

Because future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including regulations governing wastewater treatment. Provisions for the installation and maintenance of the IWS on each lot will also be included in the CC&Rs. The subdivision Lot Owner's Association will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.



In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse impacts to surface and groundwater resources nor will it affect the County's wastewater collection and treatment facilities.

3. Drainage

Existing Conditions. The subject parcel slopes in an easterly to westerly direction with on site elevations ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent.

Storm water runoff on the subject property was calculated by using the rational method and the 50-year, one-hour storm event for drainage areas less than 100 acres. The criteria used for the hydrologic calculations are from the *Rules for the Design of Storm Drainage Facilities in the County of Maui (1995)*.

Existing runoff at the project site was estimated to be 75.2 cubic feet per second (CFS), while the pre-development runoff volume is 135,400 cubic feet (CF). Runoff from the project site presently sheet flows across the site in a westerly direction onto downstream parcels and towards Mokulele Highway. The proposed project will not involve discharges into Class 1 (inland) waters or Class AA (marine) waters of the State of Hawai'i.

Potential Impacts and Mitigation Measures. A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) The drainage system for the proposed subdivision will be designed to accommodate the incremental increase in runoff generated by the development of the entire project site.

The master drainage system for the subdivision will provide a drain stubout to each developable lot, as well as curb-inlet catch basins, manholes, and drain lines within



the subdivision's internal roadway system. As individual lots are developed in the future, lot owners will be required to install their own onsite drainage system and provide a drain line connection to the drain stubouts on each lot. The post-development runoff from each lot will then be conveyed to a series of retention basins along the western edge of the subdivision. The retention basins will be designed and built to accommodate the increase in runoff from the fully-developed subdivision.

Based on the 50-year, one-hour storm event, post-development runoff is projected to be 328.5 CFS, while runoff volume is projected to be 413,900 CF. The incremental increase between the pre- and post-development conditions is 253.3 CFS in runoff and 278,500 CF in runoff volume.

Regardless of the magnitude of a storm event, no surface water (runoff), is expected to reach Ma`alaea Beach. Studies have indicated that the mud cap rock along the southern two-thirds of Ma`alaea Bay prevents groundwater discharge along the shoreline, forcing it further offshore where it is thoroughly mixed to background ocean water levels. As a result, any impact to groundwater flowing beneath the project site and flowing south toward Ma`alaea Bay will not adversely impact the beach's water quality, including its turbidity and chlorophyll *a* levels.

In order for the master drainage system to function as designed, provisions for the maintenance of the system will be included in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision. The association of subdivision lot owners will assume the responsibility of operating and maintaining the system pursuant to the CC&Rs. Examples of measures to facilitate the operation and maintenance of this system include, but are not limited to, the following.

- Inspect the drainage system on an annual basis and after major storms. Repair any damage and remove debris from grated drain inlets to allow unimpeded flow.
- Periodically inspect the drainage system. Remove debris and sediment build up as necessary especially inside grated drain inlets upstream of the subsurface retention basins.
- Prevent grass and landscape cuttings from entering the drainage system as they could cause blockages.



- Clean all parking areas as often as possible in order to keep debris and sediments from entering the drainage system.
- Keep lawns and landscaping in healthy condition to prevent soil erosion and reduce the possibility of sediments entering the drainage system.

The drainage system for the proposed subdivision will be designed in accordance with the *Rules for the Design of Storm Drainage Facilities in the County of Maui (1995)*.

An erosion control plan, including Best Management Practices (BMPs), and a drainage plan and report shall be submitted to the Maui Department of Public Works for review and approval prior to the issuance of grubbing and grading permits for the proposed project. The BMPs shall comply with Chapter 20.08 of the Maui County Code entitled *Soil Erosion and Sedimentation Control*. In addition, since site work for the project will exceed one acre, a National Pollutant Discharge Elimination System (NPDES) Permit for general coverage will be obtained from the Clean Water Branch of the State Department of Health for the discharge of storm water associated with construction activities such as clearing, grading, and excavation.

Since future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown.

Nevertheless, because heavy industrial uses have the potential to affect the environment, the CC&Rs will require that all lot owners prepare and implement BMPs and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also require that lot owners comply with all applicable Federal, State, and County laws including regulations governing storm water runoff and erosion control. The association of subdivision lot owners will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.



In light of the foregoing, the proposed project is not expected to result in any significant impacts to surface and groundwater resources nor will it adversely affect adjacent and downstream properties.

4. Roadways

Existing Conditions. Linking Kahului and Kihei, Mokulele Highway is a four-lane, divided roadway with a north-south alignment. The highway has a posted speed limit of 45 miles per hour and a separate bike path along its east side.

In the project area, Mokulele Highway forms a four-legged, signalized intersection with Kama`aina Road to the east and Mehameha Loop to the west. The north and southbound approaches of the highway have separate left- and right-turn deceleration and turn/storage lanes. The north and southbound left-turn lanes allow protected turning movements. The eastbound (Mehameha Loop) and westbound (Kama`aina Road) approaches have one travel lane in each direction.

Access from Mokulele Highway to the subject parcel is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. Mokulele Highway and Kama`aina Road both fall under the jurisdiction of the State Department of Transportation (DOT).

Near its intersection with Mokulele Highway, Kama`aina Road has a 24-foot wide concrete-paved section that extends about 1,500 feet eastward before changing to a 24-foot wide asphalt-paved section to match up with South Firebreak Road.

From its nexus with Kama`aina Road, South Firebreak Road heads south to provide access to adjacent sugar cane fields and the Hawaiian Cement Quarry. South Firebreak Road transitions to Lower Kihei Road approximately 500 feet southwest of the Quarry Access Road.

Lower Kihei Road varies in surface width with asphalt pavement ranging from 20 to 22 feet. Lower Kihei Road proceeds in a southerly direction to provide access to the project site, an HC&S irrigation reservoir, and sugar cane fields along its alignment.

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of](#)



[Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

The external roadways providing access to the proposed subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code pertaining to *General Criteria for Flexible Design Standards*. The subdivision's internal roadways will be owned and maintained by the Lot Owner's Association. In conjunction with the processing of the subdivision application for the proposed project, the flexible design standards will be submitted to the Maui Department of Public Works (DPW) for review and approval.

The County of Maui provides public bus transportation between Kihei and Kahului. The Kihei Islander (bus) route takes passengers along Mokulele Highway at one-hour intervals from 5:30 AM to 9:30 PM.

Potential Impacts and Mitigation Measures. A Traffic Impact Analysis Report (TIAR) for the proposed project was prepared by Phillip Rowell and Associates in September 2011. [See Appendix Q, Traffic Impact Analysis Report](#).

Since the land owner's current plan is to subdivide the property, there is no estimate as to when the actual development of the lots will be completed. Therefore, 2015 was used as an estimated project completion date. This time frame is compatible with traffic studies for other major projects within and adjacent to the study area. The year 2015 was also used as the horizon or design year for which background traffic conditions (future traffic conditions without the proposed project) are estimated.



These future traffic projections were calculated by evaluating existing traffic volumes, annual growth rates, and traffic generated by other proposed projects in the vicinity. The levels-of-service at the following intersections were evaluated for the TIAR.

- Mokulele Highway, Kama`aina Road, and Mehamaha Loop (signalized).
- South Firebreak Road and Quarry Access Road (unsignalized). This intersection is associated with the Primary Access Road.
- South Firebreak Road and Project Access Road (unsignalized). This intersection is associated with the Alternate Access Road.
- Quarry Access Road and Project Access Road (unsignalized). This intersection is also associated with the Alternate Access Road.

The study intersections were analyzed using methodology for signalized and unsignalized intersections set forth in the *2000 Highway Capacity Manual*.

Existing Traffic. Traffic counts were taken at the study intersections to determine existing peak hour traffic volumes. Since Kama`aina Road provides access to the Hawaiian Cement Quarry and experiences a lot of heavy truck traffic, heavy vehicles were also counted.

The morning peak hour along Mokulele Highway is from 7:15 to 8:15 AM and is consistent with 2010 traffic counts taken at the highway's intersection with North Kihei Road, the next signalized intersection to the south. The total AM peak hour volume along the highway is approximately 2,200 vehicles per hour (VPH). The direction of travel is evenly split (50/50) and left and right turns are minimal.

Heavy vehicles make up most of the traffic turning into and out of Kama`aina Road. For outbound vehicle traffic during the morning peak hour, 80 percent of the left turning vehicles and 67 percent of the right turning vehicles are heavy vehicles. For traffic turning into Kama`aina Road from Mokulele Highway, 48 percent of the left turning vehicles and 17 percent of the right turning vehicles are heavy vehicles.

The afternoon peak hour along Mokulele Highway is from 3:30 to 4:30 PM. The total PM peak hour traffic volume along the highway is 2,380 VPH. The directional traffic distribution is 50/50. During the afternoon peak hour, all of the southbound left turns from Mokulele Highway to eastbound Kama`aina Road are heavy vehicles and 83 percent of the right turns from northbound Mokulele Highway to eastbound



Kama`aina Road are heavy vehicles. Of the outbound traffic during the afternoon peak hour, 73 percent of the left turns from westbound Kama`aina Road to southbound Mokulele Highway are heavy vehicles.

The peak hour volumes along Mehamaha Loop are approximately 35 VPH during the morning peak hour and 40 VPH per hour during the afternoon peak hour. There were no heavy vehicles along Mehamaha Loop during both peak hours.

The peak hour volumes along Kama`aina Road are 57 VPH during the morning peak hour and 36 VPH during the afternoon peak hour. Heavy vehicles make up 25 percent of the traffic along Kama`aina Road during the AM peak hour and 22 percent during the PM peak hour.

Level-of-Service. This term is used to describe any of an infinite number of traffic operating conditions that may occur on a given travel lane or roadway when it is subjected to various traffic volumes. Level-of-Service (LOS) also measures the effect various factors have on traffic including factors such as space, speed, travel time, traffic interruptions, safety, driving comfort, convenience, and freedom to maneuver. LOS is expressed in a qualitative manner through the use of six levels ranging from "A" through "F" with LOS "A" representing free-flowing traffic and no congestion and LOS "F" reflecting severe traffic congestion with stop-and-go conditions.

The Institute of Transportation Engineers' (ITE) publication, *Transportation Impact Analyses for Site Development (2006)*, notes that LOS D is typically deemed acceptable for peak hour conditions in urban areas. Using this standard and applying this criterion to the overall intersection instead of each controlled lane group, no deficiencies were identified at the intersection of Mokulele Highway, Kama`aina Road, and Mehamaha Loop. The overall intersection operates at LOS A during both morning and afternoon peak hours. The east- and westbound approaches, as well as the northbound left-turn lane and southbound left-turn lane operate at LOS D, which is considered an acceptable level-of-service.

Volume-to-Capacity Ratio. Corresponding to each level-of-service is a volume-to-capacity (V/C) ratio. This ratio expresses existing or projected traffic volumes in relation to the capacity of an intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by a roadway during a specified



period of time. The capacity of a particular roadway is influenced by the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.), and turning movements. A signalized intersection with a volume-to-capacity (V/C) ratio greater than 1.000 corresponds to LOS F, while an intersection with a V/C ratio of 0.801 – 1.000 corresponds to LOS D, which is an acceptable level-of-service.

Trip Generation. The trip generation analysis is not based on zoning but is predicated on the anticipated land uses for the proposed project. The peak number of trips generated by the proposed project was estimated by using trip-generation rates for industrial parks. Based on the total area of the developable lots (65.92 acres), the project will generate 392 inbound and 80 outbound trips during the morning peak hour and 99 inbound and 372 outbound trips during the afternoon peak hour.

Trip Distribution. Using population distribution data from the *The Maui Long Range Land Transportation Plan* (1996), project-related trips were distributed among anticipated approach and departure routes. Based on population distribution estimates for 2015, 62 percent of project-related trips are projected to approach from and depart to the north, while the remaining 38 percent are expected to approach from and depart to the south.

The project will have no right of access to roadways in the Maui Raceway Park. In addition, retention basins along the western boundary of the project site will prevent any traffic connection between the subdivision and the Park. Therefore, all traffic was assigned to the intersection of Mokulele Highway, Kama'aina Road, and Mehameha Loop.

Based on observations at the Central Maui Baseyard, which lies 1.3 miles to the north of the project site, and the Consolidated Baseyard, which is located about 3.0 miles to the northwest of the site, it is anticipated that 25 percent of the trips generated by the project will be made by heavy vehicles.

Background Traffic Conditions. From 1990 to 2020, traffic on Maui is expected to increase at an average annual rate of 1.6 percent according to *The Maui Long Range Land Transportation Plan* (1996). This growth rate was used to estimate the ambient



background growth between 2011 and 2015, which is the design year for the proposed project. This growth factor was applied to the north- and southbound through traffic movements along Mokulele Highway. The other component used to estimate background traffic volumes is traffic resulting from other proposed projects in the vicinity that are either under construction or approved for construction. These “related projects” may be development projects or roadway improvements which could have a significant effect on traffic in the study area.

The background traffic projections were then calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects.

Background Plus Project Conditions. This is defined as 2015 background traffic conditions plus project-related traffic and was estimated by superimposing the peak hourly traffic generated by the proposed project on peak hour 2015 background traffic volumes.

Level-of-Service Analysis. A level-of-service analysis (LOS) of background and background plus project conditions was conducted by analyzing the changes in traffic volumes and levels-of-service at the study intersections and project driveways. The incremental difference between these conditions quantifies the (traffic) impact of the project and was also used to help formulate appropriate mitigation measures.

The LOS analysis for 2015 background plus project conditions at the study intersections revealed the following:

1. *Mokulele Highway, Kama`aina Road, and Mehemeha Loop (signalized).*

- The northbound left will operate at LOS E during the morning peak hour. However, the volume-to-capacity (V/C) ratio is 0.53, which means that the long delay is the result of the signal timing. No mitigation is required.
- During the afternoon peak hour, the westbound approach will operate at LOS E, the southbound left will operate at LOS F, and the overall intersection will operate at LOS C. Since the V/C ratios for these movements are greater than 1.00, mitigation is required.
- Modifying the westbound approach to provide a separate right-turn lane will allow all controlled movements to operate at LOS D, or better. In



addition, the overall intersection will operate at LOS B and all V/C ratios will be below 1.00.

- Because of the large number of heavy trucks entering and exiting Kama'aina Road, the need for an acceleration lane for traffic turning from westbound Kama'aina Road to northbound Mokulele Highway was assessed. A review of *A Policy on Geometric Design of Highways and Streets* (1994), published by the American Association of State Highway and Transportation Officials, concluded that there are general guidelines regarding the need for an acceleration lane, but no traffic warrants. It should be noted that an acceleration lane was not provided at this intersection, or the intersection for the Central Maui Baseyard (1.3 miles to the north), when Mokulele Highway was widened from two to four lanes in 2008.
- The projected number of heavy vehicles that would use an acceleration lane at this location is significantly higher than estimated for background without project conditions. The number of heavy vehicles is expected to increase from 10 to 22 vehicles per hour during the morning peak hour and from zero to 58 vehicles during the afternoon peak hour. Given this increase, and the potential impacts of heavy vehicle traffic on the capacity of intersections and roadways, it is recommended that an acceleration lane be provided for vehicles turning right from westbound Kama'aina Road to northbound Mokulele Highway.

2. *South Firebreak Road and Quarry Access Road (unsignalized).*

- This intersection has controlled lane groups and is associated with the Primary Access Road. No mitigation is required.
- All project-related traffic at this intersection will head south to the proposed subdivision, while all Quarry-bound traffic will continue to use the Quarry Access Road. It was assumed that the Quarry Access Road approach will be STOP sign-controlled.
- All controlled lane group movements at this intersection will operate at LOS A or B which indicates good operating conditions and minimal delays.

3. *South Firebreak Road and Project Access Road (unsignalized)*

- This intersection has controlled lane groups and is associated with the Alternate Access Road. No mitigation is required.
- All project-related traffic will turn onto the Project Access Road and all Quarry-related traffic will continue to use the Quarry Access Road. It was presumed that the Project Access Road approach will be STOP sign controlled.
- All controlled lane group movements at this intersection will operate at



LOS A or B which implies good operating conditions and minimal delays.

4. *Quarry Access Road and Project Access Road (unsignalized)*

- This intersection has controlled lane groups and is associated with the Alternate Access Road. No mitigation is required.
- All north- and southbound traffic at this intersection will be project related, while all east- and westbound traffic is Quarry related. It was assumed that all approaches will be STOP sign controlled and that no turns will be allowed at this intersection.
- All controlled lane group movements at this intersection will operate at LOS A or B which reflects good operating conditions and minimal delays.

Findings. Recommended mitigation measures for the intersection of Mokulele Highway, Kama`aina Road, and Mehamaha Loop are reflected in the following table.

Table 1. Recommendations for 2015 Background Traffic Conditions

<i>Intersection</i>	<i>Recommended Measures to Mitigate Existing (2011) Deficiencies</i>	<i>Recommended Measures to Mitigate Background Deficiencies</i>	<i>Recommended Measures to Mitigate Background Plus Project Deficiencies</i>
Mokulele Highway, Kama`aina Road, and Mehamaha Loop	No mitigation required.	No mitigation required.	(1) Modify westbound approach to provide a separate right-turn lane. (2) Provide acceleration lane for west- to northbound right turns. (3) Lengthen southbound left-turn deceleration lane from 60 feet to 350 feet.

In addition to the foregoing, the traffic study also recommends the following.

1. The areas adjacent to Kama`aina Road, South Firebreak Road, and Lower Kihei Road should be monitored to insure that sugar cane growth does not impede sight distances and that the visibility of traffic control devices is maintained.
2. Because of the increased traffic volumes along Kama`aina Road, South Firebreak Road, and Lower Kihei Road as a result of the project, these roadways should be striped and signed in accordance with County of Maui standards. The high proportion of heavy vehicle traffic should be considered in the design and installation of traffic control devices, especially the longer stopping distances that are required for these vehicles.



Construction of the proposed project will primarily involve site work and the installation of subdivision infrastructure. After mobilization, construction equipment, materials and vehicles will be stored and secured onsite. As such, short term, construction-related traffic impacts are expected to be minimal. A Traffic Management Plan will be utilized to minimize impacts during peak hour traffic by controlling the delivery of construction materials and the arrival and departure of construction workers. All required traffic control plans and devices shall conform to the applicable provisions of the Manual on Uniform Traffic Control Devices (2009).

The sugar cane fields adjacent to the intersections in the project area are owned by Hawaiian Commercial & Sugar Company (HC&S) and are not under the control of the applicant. To ensure that sugar growth does not impede sight distance and that the visibility of traffic control devices is maintained, the applicant will work with HC&S to help minimize impacts. As part of the subdivision application process, a driveway sight distance analysis and worksheet (for the subdivision driveway) will be submitted to the Maui Department of Public Works for review and approval to ensure that adequate sight distance and visibility are provided.

As subdivision lots are developed in the future, lot owners will be required to provide onsite parking and loading space in accordance with Chapter 19.36A of the Maui County Code pertaining to Off-Street Parking and Loading.

The land owner will provide his fair-share contribution toward regional roadway improvements if legislation adopting regional traffic impact fees for the island of Maui is in place prior to final subdivision approval.

In light of the foregoing, the proposed project is not expected to have an adverse impact upon traffic.

5. Electrical and Communication Systems

Existing Conditions. Electrical power for the island of Maui is provided by Maui Electric Company (MECO), while communication systems are operated by Hawaiian Telcom and Oceanic Time Warner Cable (OTWC). Hawaiian Telcom provides local and long-distance telephone service, as well as high-speed internet and online cable



television (CATV) service, while OTWC provides CATV service for the State of Hawai'i, including Maui.

Existing overhead utility lines run along the right side of Kama`aina Road, South Firebreak Road, and Lower Kihei Road. The overhead lines provide service to the surrounding area and are located within an easement granted to MECO and Hawaiian Telcom. Although OTWC has an existing fiber optic line along Mokulele Highway, the closest service connection point is at the Central Maui Baseyard approximately 1.3 miles to the north of the subject parcel. Depending on feasibility and future market potential, OTWC has worked with land owners and developers to help defray installation costs (personal communication with Bill Hanke - OTWC, July 26, 2012).

Potential Impacts and Mitigation Measures. A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) To provide service to the proposed subdivision, new MECO and Hawaiian Telcom lines will be extended to the subject parcel from the existing overhead lines in the project area.

The new power and communication systems for the proposed subdivision will be installed underground in accordance with MECO and Hawaiian Telcom requirements. Street lights will be installed along the subdivision's internal roadway system at intervals to be determined by the project's electrical engineer.

The design and construction of the electrical and communication systems will be coordinated with MECO and Hawaiian Telcom to ensure that all applicable design and operational criteria are addressed. Construction drawings will be prepared and submitted to MECO and Hawaiian Telcom for review and approval at such time in the future that an application for subdivision approval is filed with the County of Maui.

Exterior lighting will be appropriately shielded or downward directed to provide safety, security, and facilitate parking, and to minimize impacts to any migratory seabirds which may become disoriented when traversing the project area.

Lot owners will be encouraged to utilize energy generation and energy conservation measures when developing their parcels in the future. Examples of such measures



include, but are not limited to: the use of windmills or photovoltaic panels to generate electricity, and the use of solar water heating systems, energy-efficient lighting and appliances, fiberglass insulation, double-glazed windows, skylights, and extended (roof) eaves to minimize heat gain through windows.

E. CUMULATIVE IMPACTS

A cumulative impact is the combined effect of a proposed action and other past, present, and reasonably foreseeable (future) actions regardless of who initiates the action.

Past, present, and reasonably foreseeable projects that are of similar nature or scale as the proposed project and have the potential to contribute to cumulative impacts were identified and examined for this cumulative impacts analysis. The analysis uses the best available data at the time to assess these projects and their potential impacts.

There are several projects in the area around the subject parcel that are proposed for future development. These projects are discussed below and include: Project District 10 (Old Pu`unene Airport area) by the County of Maui, the Maui Prison (aka, Maui Regional Public Safety Complex) by the State Department of Public Safety, and agricultural homesteads by the State Department of Hawaiian Homelands (DHHL).

As part of a comprehensive master-planning process, the State of Hawai`i is evaluating infrastructure needs for the future development of State and County lands in the vicinity of the Old Pu`unene Airport. The DHHL owns a 646-acre parcel to the south of the subject property which it has zoned for agricultural homesteads (*i.e.*, farm lots) because dust and wind conditions make it unsuitable for residential or commercial use. The DHHL also has plans to develop a private wastewater treatment plant on a portion of their site. The State's plans for the Maui Prison have been delayed due to the lack of government funding and the absence of infrastructure (*i.e.*, water, sewer) to support this project. The County of Maui recently recommended that the Prison be moved from its proposed location in Project District 10 to State-owned land approximately one mile east of Mokulele Highway. The County's plans for PD 10, a master-planned recreational and industrial expansion



area, is contingent upon several factors including the completion of an updated master plan, obtaining all necessary land use approvals, and the availability of funds for infrastructure development and construction. It is estimated that it could take at least 10 years or more before any ground-breaking construction commences on the State and County lands. The time frame for the development of these lands is highly indeterminate and is dependent on several key factors such as the availability of funding, the construction of infrastructure, and obtaining the necessary land use entitlements and permit approvals. As such, these State and County projects were not included in the cumulative impacts analysis since they are not considered reasonably foreseeable projects.

The following criteria were used to identify projects for the cumulative impacts analysis.

- Projects in geographic proximity to the proposed project or with similar location characteristics.
- Projects of comparable nature or scale to the proposed project.
- Projects that could affect similar resources, have the potential to generate environmental impacts and when grouped collectively with the proposed project, could result in cumulative impacts to the environment.
- Projects that are either pending approval or have already been approved.

For the analysis of cumulative impacts, the proposed project was grouped and evaluated with several other projects in the area of similar scope or character. These other projects include: the Central Maui Baseyard, Consolidated Baseyard, Waiko Baseyard Light Industrial Subdivision, and Kihei Residential Subdivision. With the exception of the proposed project and the Waiko Baseyard Subdivision and Kihei Residential Subdivision, the other projects have been completed and are occupied.

Central Maui Baseyard: This existing 52-acre industrial subdivision lies 1.3 miles to the north of the subject property and contains about 90 leasehold lots. Most of the lots are 1 acre or less while the largest lot is nearly 10 acres. About 40 acres of land is zoned for light industrial use while the remaining 12 acres (Lots 1C, 59 and 221) are zoned heavy industrial.



Consolidated Baseyard: This existing light-industrial subdivision was built on a 23.2-acre site about 2.0 miles to the northwest of the subject parcel. The project contains 35 fee simple lots ranging from approximately 10,000 square feet to 2 acres in size.

Waiko Baseyard Subdivision: This future light-industrial subdivision is proposed on 31.2 acres of land about 1.8 miles to the northwest of the subject parcel. A total of 41 lots fee simple lots ranging from 9,500 square feet to 8.5 acres are proposed.

Kihei Residential Subdivision: This future residential subdivision is proposed on nearly 94 acres located 2.3 miles to the south of the subject property. The project will include 400 single-family units, 200 multi-family units, 2,000 square feet of commercial space, and 7,000 square feet of office space.

2. Assessment of Cumulative Impacts

A qualitative approach was used to assess the potential cumulative impacts of the proposed project and the projects listed above. Key components of the existing environment were examined as part of this process and included: (1) topography, (2) plant and animal life, (3) noise and air quality, (4) cultural resources, (5) visual character, (6) water quality, (7) public services, and (8) infrastructure. Cumulative impacts could change over time as new projects are introduced or projects are modified, delayed, or abandoned in response to economic conditions. The following discussion identifies potential concerns and mitigation measures from a cumulative impacts standpoint.

a. Topography

Modifications to existing terrain invariably occur as a result of site work. During grading, cut and fill quantities should be balanced to reduce site work costs and maintain existing drainage patterns. The implementation of erosion control measures and Best Management Practices (BMPs) help minimize soil loss and sedimentation during construction. Changes to the existing landform need to ensure that visual impacts are minimized and that grading plans and civil drawings comply with applicable design and construction criteria. No cumulative adverse impacts to the overall topography of the region are expected.

b. Plant and Animal Life

During the environmental and/or regulatory review process for these projects, flora and fauna on the project sites were examined. Potential impacts and measures to minimize harm to plant and animal life were also identified as part of this process.



For the most part, the project sites were formerly used for various agricultural purposes such as raising livestock, cultivating sugar cane, seed corn, and truck crops. From a cumulative viewpoint, no negative impacts to plant and animal life in the region are anticipated.

c. *Noise and Air Quality*

Although measures to reduce construction-related noise to inaudible levels will not be practical in all cases, proper equipment maintenance, the use of sound-dampening equipment, and limiting construction activities to daylight working hours help minimize short-term noise impacts. All projects must comply with State Department of Health (DOH) noise regulations. If noise from construction or land use activities exceeds their standards, a Community Noise Permit must be obtained from the DOH. From a long-term perspective, the development of lands that have been previously used for agricultural purposes will result in changes to the ambient noise levels at the project sites. Where sugar cane trucks and machinery were the primary sources of noise in the past, noise from industrial activities and traffic from nearby roadways would be the principal noise-generating sources once all the projects are completed and occupied. With the exception of the Kihei Residential Subdivision, the other projects are located away from areas of existing residential and commercial development. There are no significant noise-generating sources at any of the project sites which would result in adverse impacts to surrounding areas.

As with noise, air quality is temporarily affected during construction activities. Watering active work areas, using wind screens, limiting exposed areas, and establishing landscaping as soon as possible helps minimize the effects of fugitive dust during construction. The use of BMPs and compliance with DOH and County erosion control requirements helps manage airborne particulates. All of the projects must comply with DOH noise regulations. As such, a use or activity including a potential pollution source is subject to regulatory review during which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts. There were no point sources of air pollution at any of the project sites.



Cumulatively, no significant impacts to the ambient noise and air quality of the region are anticipated.

d. Visual Character

The visual character of the lands underlying the project sites is gradually being transformed as unused or unproductive agricultural lands are utilized for more productive purposes. After full build out, the projects will have a visual character that is more urban (industrial, residential) in nature. The use of perimeter fencing, landscape plantings, and design guidelines will help integrate the projects with their surroundings. On a cumulative basis, no adverse effects to the visual character of the lands surrounding the project sites are expected.

e. Cultural Resources

Archaeological surveys and cultural impact assessments were prepared and examined as part of the environmental and/or regulatory review process for these projects. Potential issues and mitigation measures were identified to address any areas of concern. From a cumulative standpoint, the projects will not adversely affect archaeological or cultural resources in their respective areas nor will they have a negative impact on traditional native Hawaiian practices or beliefs.

f. Water Quality

Surface runoff and other non-point source pollutants can affect water quality if left unchecked. Project-related construction is subject to State and County requirements for managing runoff and controlling erosion and sedimentation. For example, construction activities are subject to DOH requirements for NPDES permit coverage and Maui County standards for grubbing, grading, and drainage to minimize potential water quality impacts to groundwater resources and adjacent and downstream properties. From a regional water quality perspective, the use of BMPs and compliance with all applicable regulatory requirements will help mitigate potential adverse effects to water quality.

g. Public Services

The Kihei Residential Subdivision will create an increased demand for park and school space due to the residential nature of this project. The need for these



additional services will be addressed during the developer's land use entitlement process. Due to their industrial nature, the cumulative effect that the other projects would have on public services is minimal. Other public services such as fire, police, and emergency medical responders already serve the project areas and would not need to expand their current sphere of operations.

h. Infrastructure

In conjunction with the permitting process for each of the projects, infrastructure requirements for the projects must be met by their developers.

Although the water system within the Central Maui Baseyard is privately owned and maintained, water for this project is provided by the County water system which benefited from major offsite improvements undertaken by the developer. Similar to the proposed project, the Consolidated Baseyard has a State-approved water system which is privately owned and maintained. Water for the proposed Waiko Baseyard Subdivision will be provided by the Consolidated Baseyard's adjacent system. While water for the proposed Kihei Residential Subdivision will be provided by the County water system, the developer will be required to develop water source and storage facilities to serve the project.

With the exception of the Kihei Residential Subdivision, wastewater for the other projects will be handled by individual wastewater systems on each lot that have been approved by the DOH. Although sewer service for the proposed Kihei Residential Subdivision will be provided by the County wastewater system, the developer will be required to fund any necessary off-site collection system and pump station improvements.

All of the projects must comply with State and County drainage regulations for managing runoff and controlling erosion and sedimentation. Storm water management measures including BMPs and drainage control features such as retention basins or subsurface storage systems help control runoff and minimize impacts to adjacent or downstream properties. From a cumulative viewpoint, storm water runoff is not expected to have an adverse cumulative effect on existing drainage conditions.



Existing and future traffic conditions and potential traffic impacts and traffic mitigation measures for each of the projects are examined during the environmental and/or regulatory review process for each of the projects. Traffic impacts attributable to each project must be addressed by their developers to ensure that project-related impacts are mitigated and do not adversely affect short- and long-term traffic in the project areas. Mitigation measures can take various forms and include, but are not limited to, pavement striping or widening, traffic-control devices (e.g., stop signs, traffic signals), acceleration and deceleration lanes, storage and turn lanes, and additional travel lanes. The developers of each of the projects are required to comply with the recommendations or conditions for project-related traffic mitigation that are set forth by the approving (government) authorities. As a result of this review process, no adverse cumulative traffic impacts are anticipated.

3. Secondary Impacts

Secondary impacts are impacts that are indirectly caused by an action and occur later in time or are farther away in distance and still reasonably foreseeable. They can be viewed as the actions of others that are taken because of the presence of the project. For example, a secondary impact of a highway project is that it induces development by removing a key barrier to growth – transportation access.

Overall, the proposed project is not expected to induce a significant change in development or land use patterns since it is consistent with existing heavy industrial land uses in the immediate area such as the Central Maui Baseyard and Hawaiian Cement Quarry, as well as the planned and future areas set forth by Project District 10 (Old Pu`unene Airport area) and the *draft* Maui Island Plan.

The proposed project will address the pent-up demand for purely heavy industrial lands and create new or additional business opportunities for local residents. At full build-out, the project would generate profits and expenditures which would have a beneficial effect on the local economy and the coffers of the State and County.

The proposed project is not anticipated to have any adverse secondary effects upon the physical or man-made environment nor is it expected to generate new or additional demands for public services and infrastructure.



IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE ENVIRONMENTAL LAW

Chapter 343, HRS (*Environmental Impact Statements*) and Title 11, Chapter 200, HAR (*Environmental Impact Statement Rules*) set forth provisions for the preparation and review of environmental review documents for the State of Hawai'i. Section 345-5, HRS (*Applicability and Requirements*) identifies nine proposed actions for which an environmental assessment (EA) shall be required. As related to the proposed action, there are two actions that trigger the preparation of an EA: 1) the use of State or County lands, and 2) an amendment to an existing County general plan or community plan when it is not associated with a new plan or update initiated by the County.

Since the proposed action will involve the use of State lands (proposed easements across State property) and an amendment to a community plan, an EA has been prepared in accordance with Chapter 343, HRS and Title 11, Chapter 200, HAR. Based on consultation with the Maui Planning Department and the State Land Use Commission, the Maui Planning Commission will serve as the approving agency for the environmental review process.

B STATE LAND USE DISTRICTS

Pursuant to Chapter 205, HRS, all lands in the State of Hawai'i have been placed into one of four land use districts by the State Land Use Commission (SLUC): "Urban", "Rural", "Agricultural", and "Conservation". The subject parcel is located in the *State Agricultural District*. [See Figure 12, State Land Use Districts.](#)

The proposed action involves a request to reclassify the property from the *State Agricultural District* to the *State Urban District*.

C. LAND USE COMMISSION RULES

Title 15, Chapter 15, HAR (*Land Use Commission Rules*) governs the practice and procedure of the State Land Use Commission. Subchapter 2 of 15-15, HAR sets



forth various criteria for the establishment of each of the State's four land use districts. The request for reclassification is in conformance with the following standards for determining *State Urban District* boundaries as set forth in Section 15-15-18, HAR:

- (1) It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses;

Comment: Although the subject property is not characterized by "city-like" concentrations or conditions, it is located in an area that is designated for future urban development. The Central Maui Baseyard, an existing industrial development on 52 acres of land in the *State Urban District*, is located 1.3 miles to the north of the subject property. During World War II, the subject parcel and surrounding lands were developed for use as the Pu`unene Naval Air Station. Lands planned for future development include the Pu`unene Airport Master Plan (PAMP) area which encompasses 222 acres of land west of and adjacent to the subject parcel and is a component of Project District 10 (PD 10) – Old Pu`unene Airport area – which encompasses 561 acres and is designated as "a master-planned recreational and expansion area to meet future recreational needs and to provide areas for industrial activities, including government facilities, whose locations are better suited away from urban areas". The State Department of Hawaiian Home Lands (DHHL) owns approximately 184 acres of land to the west of PD 10 (across Mokulele Highway) which it plans to lease for future commercial development. The DHHL also owns a 646-acre parcel to the south of the subject parcel – TMK (2) 3-8-008: 034 – which is zoned for agricultural homestead lots by the DHHL. Parcel 34 and other State-owned parcels in the PAMP area are the subject of a cooperative master planning effort by various State agencies to address future land use and infrastructure development for the State-owned lands in the vicinity of the Old Pu`unene Airport.

- (2) It shall take into consideration the following specific factors:
 - (A). Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;



Comment: The subject property is located about 1.0 mile southeast of the intersection of Kama`aina Road, Mehamaha Loop, and Mokulele Highway, a divided, four-lane facility linking South and Central Maui. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. The subject parcel is ideally situated for heavy industrial activities given its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport.

- (B) Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection; and

Comment: The subject parcel is undeveloped and is not currently served by basic public services. Infrastructure systems for the proposed subdivision will include private drainage, water, and wastewater systems. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. In addition to the subdivision's internal roads, its drainage, water, and wastewater systems will be privately owned and maintained an association of subdivision lot owners. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks project since it will not place any new or additional demands for parks, schools, and health care services nor will it extend the service area limits for police and fire protection. After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to the Lot Owner's Association. In light of the foregoing, no impacts to existing public services and infrastructure systems are anticipated.

- (C) Sufficient reserve areas for foreseeable urban growth;

Comment: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan (PAMP) area, and Project District 10 (PD 10) all fall within the proposed Urban Growth Boundaries (UGB) for the



draft Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). The reclassification of the subject parcel would allow 86 acres of poor, unproductive agricultural land to be used for a higher and better use as provided for by the Plan.

- (3) It shall include lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects;

Comment: The subject parcel has an average slope of 1.8 percent. The property is located in Zone “X”, an area of minimal flooding ([See: Figure 9, Flood Insurance Rate Map](#)) and does not lie in an area which is subject to tsunami evacuation as indicated by the tsunami evacuation maps prepared by the Maui County Civil Defense Agency. Based on a re-evaluation of seismic hazards by the United States Geological Service in 1992, the seismic hazard for Maui County falls within Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded. In addition, there are no known unstable soil conditions nor are there any other adverse physical or environmental conditions that would render it unsuitable or inappropriate for the proposed action.

- (4) Land contiguous with existing urban areas shall be given more consideration than non-contiguous land and particularly when indicated for future urban use on state or county general plans;

Comment: As previously indicated, the subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). In addition, the DHHL owns approximately 184 acres of land bordered by Mehamaha Loop which is designated for future commercial development. The nearby Hawaiian Cement Quarry and Hawai`i Army National Guard Armory are both operating under a Land Use Commission Special Use Permit (the Quarry also has a County



Conditional Permit). The Central Maui Baseyard lies in the *State Urban District* and is located 1.3 miles to the north of the subject parcel. In addition to the foregoing, the subject parcel is ideally situated for heavy industrial activities given its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport.

- (5) It shall include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans;

Comment: As previously noted, the subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan](#). The subject property also lies in proximity to the 184 acres of DHHL land bordered by Mehamaha Loop which is designated for future commercial development.

- (6) It may include lands which do not conform to the standards in paragraphs (1) to (5):
- (A) When surrounded by or adjacent to existing urban development; and
- (B) Only when those lands represent a minor portion of this district;

Comment: Although the subject property and lands in the surrounding vicinity are in the *State Agricultural District*, the subject parcel, the PAMP area, and PD 10 all lie within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan](#). As such, these lands lie within an appropriate area for future urban expansion and development. The granting of the proposed request would provide the land owner with the appropriate land use entitlements for the long-term, heavy industrial use of the subject property.



- (7) It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services;

Comment: The reclassification of the subject property will not contribute to scattered spot urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan](#). In addition, the subject parcel lies in the vicinity of existing industrial uses such as the Hawaiian Cement Quarry and the Central Maui Baseyard and in proximity to the 184 acres of DHHL land which is designated for future commercial development. The proposed project will not necessitate unreasonable public investment for infrastructure or public services.

- (8) It may include lands with a general slope of twenty percent or more if the commission finds that those lands are desirable and suitable for urban purposes and that the design and construction controls, is adopted by any federal, state or county agency, are adequate to protect the public health, welfare and safety, and the public's interest in the aesthetic quality of the landscape.

Comment: The subject property has an average slope of 1.8 percent and does not possess any slopes of 20 percent or more.

D. DECISION-MAKING CRITERIA

Chapter 205-17, HRS (Land Use Commission Decision-making Criteria) sets forth criteria that the Land Use Commission must specifically consider in its review of a Petition for district boundary reclassification. The decision-making criteria include the following:

- (1) The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawai`i State Plan and relates to the applicable priority guidelines of the Hawai`i State Plan and the adopted functional plans;

Comment: The proposed action conforms to the applicable goals, objectives, and policies of the Hawai`i State Plan and relates to the applicable priority guidelines of the Hawai`i State Plan and the adopted functional plans (See



Chapter IV.D and Chapter IV.E of this document).

- (2) The extent to which the proposed reclassification conforms to the applicable district standards;

Comment: The proposed action conforms to State “Urban” District standards as identified in Chapter 205-2, HRS (*Districting and Classification of Lands*) and is in keeping with the Maui County General Plan (See Chapter V.A of this document).

- (3) The impact of the proposed reclassification on the following areas of State concern:

(A) Preservation and maintenance of important natural systems or habitats;

Comment: There are no important natural systems or critical wildlife habitats within the subject parcel.

(B) Maintenance of valued cultural, historical, or natural resources;

Comment: An Archaeological Inventory Survey (AIS), Archaeological Monitoring Plan (AMP), and Cultural Impact Assessment were prepared for the proposed project to identify any significant archaeological and cultural resources, provide mitigation recommendations if necessary, and establish monitoring protocols for ground-altering construction activities. Archaeological monitoring will be conducted during all ground-altering construction activities in accordance with the approved AMP. If any archaeological features, cultural artifacts, or human burials are located during construction, the SHPD and the Maui/Lana`i Islands Burial Council will be notified and immediately consulted to assess the significance of the find and establish appropriate mitigation measures as necessary. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)

(C) Maintenance of other natural resources relevant to Hawai`i’s economy, including agricultural resources;



Comment: The soils underlying the project site have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. In addition to an overall productivity rating of “E” (the lowest rating), the land underlying the site is Unclassified (i.e., residual land) by the map identifying the Agricultural Lands of Importance to the State of Hawai`i. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, the long-term agricultural/economic impact resulting from the development of the proposed project is expected to be very minimal. It should also be noted that the 86 acres encompassed by the subject parcel represents only 0.0002 percent of *State Agricultural District* lands on the island of Maui, and just 0.0004 percent of farm land in Maui County. In light of the foregoing, the proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for large-scale or diversified agricultural activities.

(D) Commitment of State funds and resources;

Comment: The reclassification of the subject parcel is not expected to result in a significant commitment of State funds and resources. Infrastructure systems for the proposed subdivision will include private drainage, water, and wastewater systems. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. In addition to the subdivision’s internal roads, its drainage, water, and wastewater systems will be privately owned and maintained by an association of subdivision lot owners. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks project since it will not place any new or additional demands for parks, schools, and health care services nor will it extend the service area limits for police and fire protection. After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to the Lot Owner’s Association.



(E) Provision for employment opportunities and economic development; and

Comment: As indicated in Chapter III.B.2 of this document, the proposed project will provide construction-related employment during the development of the subdivision. Upon completion, lot owners will contribute to the support of the local economy through the payment of taxes and the purchase of goods and services.

(F) Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups;

Comment: Not Applicable.

(4) The standards and criteria for the reclassification or rezoning of important agricultural lands in Section 205-50; and

Comment: The proposed project does not involve the reclassification or rezoning of important agricultural lands. The land underlying the subject property is Unclassified (or residual) land by the map identifying the Agricultural Lands of Importance to the State of Hawai`i. The soils of the subject parcel have an overall land productivity rating of "E" (the lowest rating) because of very severe limitations due to their undesirable texture or because they are extremely rocky or stony. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, any long-term agricultural impact resulting from the development of the proposed project is expected to be very minimal.

(5) The representations and commitments made by the Petitioner in securing a boundary change.

Comment: The proposed project will be implemented in accordance with the representations and commitments that have been made in obtaining the district boundary amendment.

E. HAWAI`I STATE PLAN

Chapter 226, HRS, also known as the Hawai`i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-range development



of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms.

The proposed action is in keeping with the following goals of the Hawai'i State Plan.

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
- 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.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

1. Objectives and Policies of the Hawaii State Plan

The request for reclassification is in conformance with the following objectives and policies of the Hawai'i State Plan:

Chapter 226-5. HRS. Objectives and Policies for Population

226-5(a), HRS: 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.

226-5(b)(2), HRS: Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.

226-5(b)(3), HRS: Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

Chapter 226-6, HRS, Objectives and Policies for the Economy in General

226-6(a)(1), HRS: Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

226-6(a)(2), HRS: 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.

Comment: The proposed project conforms to the Objectives and Policies for Population (HRS 226-5) by increasing economic opportunities and



employment opportunities on the Neighbor Islands. The proposed heavy industrial subdivision will allow for the expansion of existing enterprises and the possible creation of new businesses which would employ Maui residents. This further supports the Objectives and Policies for the Economy-in General (HRS 226-6) by offering potential industrial businesses with the opportunity to expand their activities through newly available industrial-zoned lands.

2. Priority Guidelines of the Hawai'i State Plan

The proposed action is in keeping with the following priority guidelines of the Hawai'i State Plan:

Chapter 226-103. HRS, Economic Priority Guidelines

226-103(1), HRS: Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

a. *Encourage investments which:*

- (i) Reflect long term commitments to the State;
- (ii) Rely on economic linkages within the local economy;
- (iii) Diversify the economy;
- (iv) Re-invest in the local economy;
- (v) Are sensitive to community needs and priorities; and
- (vi) Demonstrate a commitment to management opportunities to Hawai'i residents.

Chapter 226-104. HRS, Population Growth and Land Resources Priority Guidelines

226-104(a)(1), HRS: 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.

226-104(b)(1), HRS: 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.



226-104(b)(2), HRS: Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.

226-104(b)(12), HRS: 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.

Comment: The proposed project is in keeping with the priority guidelines of the Hawaii State Plan's Economic Priority Guidelines (HRS 226103) because the project will rely on economic linkages within the local economy, through potential lessees and lot purchasers, who in turn, will serve other businesses; will diversify the economy by providing expansion for heavy industrial businesses; and provide a reinvestment in the local economy through the expansion or development of local businesses. Further, the project will meet the Population, Growth and Land Resources Priority Guidelines (HRS, 226-104) by encouraging urban growth in an area which is designated for urban expansion. As previously noted, there are other light and heavy industrial uses currently operating in close proximity to the proposed project. Further, the reclassification of the property from the State "Agricultural" District to the State "Urban" District will make available marginal lands for heavy industrial uses while maintaining neighboring lands for agricultural purposes.

F. STATE FUNCTIONAL PLANS

The State Functional Plans implement the Hawai'i State Plan by identifying needs, problems and issues, and by recommending policies and priority actions which address the identified areas of concern. The request for reclassification comports with the following State Functional Plans:

1. State Agriculture Functional Plan

The proposed action will reclassify 86.03 acres of land from the State "Agricultural" District to the State "Urban" District. The subject parcel has a Land Study Bureau rating of "E" (the lowest rating) which indicates that it is poorly suited for agriculture. The site is not classified under the State's agricultural lands rating system (Agricultural Lands of Importance to the State



of Hawai'i) which indicates that it is not considered "prime", "unique" or "other" agricultural land. While the subject parcel was formerly utilized for hog farming, it has not been used for agriculture cultivation due to its poor soil. The proximity of the property to existing and planned urban land uses coupled with its location within the proposed Urban Growth Boundary for the *draft* Maui Island Plan provides a reasonable nexus and an appropriate foundation for the request for reclassification.

2. State Transportation Functional Plan

Comments were sought and received from the State Department of Transportation (DOT) as part of the early consultation process for the preparation of the Draft EA. The DOT noted that a traffic assessment must be prepared and submitted for their review and approval and that project-related traffic may use Maui Raceway Park as a shortcut to Mokulele Highway. A traffic impact assessment report (TIAR) will be included in the Draft EA and a copy will be provided to the DOT. The TIAR will note that the proposed project will have no right of access to Maui Raceway Park roads and that proposed drainage retention basins along the western edge of the subject project site will preclude any traffic connection between the site and Maui Raceway Park. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. The subdivision's internal roadways will be privately owned and maintained by the Lot Owner's Association.

3. State Employment Functional Plan

It is estimated that the land use and subdivision approval process for the proposed project will take approximately four to five years (from 2011). As such, subdivision construction could begin in 2016 (or commence as early 2015), while the forecasted construction period is projected to be about 30 months. The subsequent lot build-out period for the subdivision is expected to last approximately 10 years. An annual average of 65 direct and indirect Maui jobs is projected during the subdivision's construction period, while an annual average of 142 direct and indirect Maui jobs is forecasted for the subdivision's



lot build-out phase. It is likely that they will require some training for equipment or computer skills. To the extent possible, employment opportunities generated by the proposed project will seek to utilize State training programs for potential employees.

G. HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Federal Coastal Zone Management Act of 1972 was adopted in response to competing development and preservation interests in U.S. coastal areas. Population growth and development in coastal areas were impacting marine resources, open space, view sheds, wildlife, and other important ecological, cultural, and historic resources. In response to this concern, Congress created a framework for managing and regulating the coastal zone and appropriated funds for State-run coastal zone management programs (CZMP). The State's acceptance of the Federal funds necessitated compliance with federal CZMP standards.

The boundaries of Hawaii's coastal zone management program are defined by coastal waters and adjacent, coastlands that are strongly influenced by each other. Coastal areas which require special consideration due to their unique values or characteristics are called Special Management Areas (SMA) and must be designated by a management plan. Any development within these areas is subject to a special assessment process. This protocol provides a means to preserve, protect, and when possible, restore the natural resources of the coastal zone by controlling development with shoreline areas in order to avoid the permanent loss of valuable resources. As required by State law, maps showing the limits of the SMA have been prepared by each County. In the Kihei-Makena Community Plan region, Pi'ilani Highway serves as the SMA boundary for this part of the island.

The project area does not lie within the limits of the SMA for the island of Maui. [See Figure 16, Special Management Area](#). At its closest point, the subject parcel is approximately 2.25 miles from the ocean.

The following section discusses the relationship of the proposed project to the objectives and policies of the Hawaii Coastal Zone Management Program pursuant to Chapter 205A, HRS.



1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreation planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring placement 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 require reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;
 - (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
 - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing;
 - (viii) Encourage 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, county planning commissions; and crediting such



dedication against the requirements of Section 46-6, HRS.

Analysis: The subject property does not abut the shoreline and is approximately 2.25 miles from the ocean at its closest point. The proposed project will not impact coastal recreational resources nor will it affect public shoreline access and activities.

2. Historical/Cultural Resources

Objective: Protect, preserve and, where desirable, restore those natural and man-made 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 archeological resources;
- (b) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (c) Support state goals for protection, restoration, interpretation, and display of historic structures.

Analysis: An Archaeological Inventory Survey (AIS) was prepared for the proposed project. The AIS did not yield any significant findings and no further archaeological work was warranted. An Archaeological Monitoring Plan (AMP) was also prepared for the proposed project. In conjunction with any ground-altering work, a qualified archaeologist will be present to monitor all subsurface, construction activities. The archaeologist will have the authority to halt excavation in the event archaeological features or cultural deposits are identified during monitoring. Should this occur, the SHPD will be immediately consulted to determine an acceptable course of action. If human remains are located, work will cease in the vicinity of the find and the find protected from further disturbance. The SHPD and the Maui/Lana'i Islands Burial Council will be promptly notified and procedures for the treatment of the remains will be implemented in accordance with Chapter 6E-43, HRS. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)



3. Scenic and Open Space Resources

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

Policies:

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

Analysis: While the visual character of the project area will be modified by the proposed project, it will not have an adverse effect upon scenic resources or view corridors due to its distance from Mokulele Highway and other public roadways in the area. In addition, because of its distance from Mokulele Highway and residential areas in Kahului, Kihei, and Upcountry, the proposed project will not have an adverse visual impact. The maximum building height under *M-3, Restricted Industrial* zoning is 90 feet. Landscaping around the perimeter of the proposed subdivision will help integrate the project with its surroundings. All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

4. Coastal Ecosystems

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

Policies:

- (a) Improve the technical basis for natural resource management;
- (b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;



- (c) 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
- (d) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Analysis: As described in Section III of this report, the proposed project is not expected to have an adverse effect upon the region's coastal ecosystem.

With the use of Best Management Practices and appropriate mitigation measures during construction, no adverse impacts to near shore waters from non-point sources of pollution are expected.

5. Economic Uses

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

Policies:

- (a) Concentrate coastal dependent development in appropriate areas;
- (b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area;
- (c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - (i) Use of presently designated locations is not feasible;
 - (ii) Adverse environmental impacts are minimized; and
 - (iii) The development is important to the State's economy.

Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan



and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

6. Coastal Hazards

Objective: 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 non-point source pollution hazards;
- (b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;
- (c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (d) Prevent coastal flooding from inland projects; and
- (e) Develop a coastal point and non-point source pollution control program.

Analysis: The property is located in Zone “X”, an area of minimal flooding ([See: Figure 9, Flood Insurance Rate Map](#)) and does not lie in an area which is subject to tsunami evacuation as indicated by the tsunami evacuation maps prepared by the Maui County Civil Defense Agency. In light of the foregoing, the proposed project is not expected to be impacted by flood or tsunami hazards.

7. Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources hazards.

Policies:

- (a) Use, implement, and enforce existing laws effectively to the maximum extent possible in managing present and future coastal zone development;
- (b) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and



- (c) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning process and review process.

Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). In conjunction with providing opportunities for development review, communication, and public participation, letters requesting comments on the proposed project were sent to various government agencies and owners/lessees of parcels in the vicinity of the subject property as part of the early consultation process for the preparation of the Draft Environmental Assessment (EA). Similarly copies of the Draft EA were provided to various agencies, organizations, and owners/lessees for their review during the public comment period for the Draft EA. The Maui Planning Commission is serving as the approving agency for the environmental review process.

8. Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

- (a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.
- (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-related issues, developments, and government activities; and
- (c) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Analysis: As part of the early consultation process for the preparation of the Draft EA, letters describing the proposed project and requesting comments on the project were sent to various government agencies and owners/lessees of



property located within proximity to the subject parcel. A typical early consultation letter, as well as written comments and responses to substantive comments are included in [Appendix R, Early Consultation Letters](#). Similarly copies of the Draft EA were provided to various agencies, organizations, and owners/lessees for their review during the public comment period for the Draft EA. Letters received during the Draft EA public comment period and letters responding to those comments are included in [Appendix S, Draft EA Comment Period](#).

9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

- (a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (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
- (c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Analysis: At its closest point, the subject property lies approximately 2.25 miles from the ocean. As such, no adverse impacts to public beach use and recreation are expected to occur.

10. Marine Resources

Objective: Implement the State's ocean resources management plan.

Policies:

- (a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;



- (c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;
- (e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and
- (f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Analysis: The proposed project does not involve the direct use or development of marine resources. By incorporating site-specific erosion and sedimentation control measures during and after construction, adverse impacts to near shore waters from runoff and pollution are not expected. From this perspective, the proposed project is not expected to have a significant impact on coastal or marine resources.

H. A NEW DAY IN HAWAI`I PLAN

During his gubernatorial campaign in 2010, Governor Neil Abercrombie developed A New Day in Hawai`i Plan the objective of which is “to move away from the economic and social policies of the status quo that consistently postpone solving problems, leaving them for future generations.”

The Plan covers the 13 themes listed below and is not intended to cover every aspect of governance.

1. Economy and Jobs
2. Education
3. Education - Early Childhood
4. Education - University of Hawai`i System
5. Energy
6. Environment and Natural Resources



7. Food and Agriculture
8. Health
9. Health - Older Adults and Aging
10. Housing, Families, and Human Services
11. Small Business and Entrepreneurship
12. Technology and Innovation
13. Additional Issues (civil and human rights, culture and arts, Native Hawaiians, public safety, taxes and government, and transportation).

Comment: The proposed project will support small business and entrepreneurship during construction and after build-out of the subdivision by creating new jobs and planting the seeds for new jobs in the future.

I. STATE PRIORITY GUIDELINES FOR SUSTAINABILITY

On July 5, 2011, the Legislature of the State of Hawai`i adopted Act 181. This Act established sustainability as a State priority by incorporating the following Hawai`i 2050 sustainability plan definitions, guiding principles, and goals into Chapter 226, Hawai`i Revised Statutes (Hawai`i State Planning Act).

1. Encouraging balanced economic, social, community, and environmental priorities.
2. Encouraging planning that respects and promotes living within the natural resources and limits of the State.
3. Promoting a diversified and dynamic economy.
4. Encouraging respect for the host culture.
5. Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.
6. Considering the principles of the *ahupua`a* system.
7. Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai`i.

Comment: Lot owners will be encouraged to implement and utilize sustainability measures and practices during lot development and onsite operations.



V. CONFORMANCE WITH COUNTY PLANS AND PROGRAMS

A. MAUI COUNTY GENERAL PLAN

The 1990 update of the General Plan for the County of Maui provided long-term goals, objectives, and policies directed toward improving living conditions in the County. As stated in the Maui County Charter:

“The purpose of the General Plan is to recognize and state major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development.”

The proposed action is consistent with the following General Plan objectives and policies.

B. Land Use

Objective

2. To use the land within the County for the social and economic benefit of all the County’s residents.

Policy

- 1b. Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental, and economic needs of the community.
- 1d. Formulate a directed growth strategy, which will encourage the redevelopment and infill of existing communities allowing for mixed land uses, where appropriate.

As part of the decennial update of the General Plan, the Countywide Policy Plan for the 2030 General Plan was adopted by the County of Maui on March 19, 2010. The Countywide Policy Plan is the keystone for the General Plan update and establishes an over-arching statement of values while providing policy support for the Maui Island Plan and the regional community plans.

Key components of the Countywide Policy Plan include:

1. A vision statement and core values for the County to the year 2030.



2. An explanation of the plan-making process.
3. A description and background information of Maui County today.
4. Identification of guiding principles.
5. A list of Countywide goals, objectives, policies, and implementing actions relating to various core themes.

In addition, the following core principles are contained in the Countywide Policy Plan:

1. Excellence in the stewardship of the natural environment and cultural resources.
2. Compassion for and understanding of others.
3. Respect for diversity.
4. Engagement and empowerment of Maui County residents.
5. Honor for all cultural traditions and histories.
6. Consideration of the contributions of past generations as well as the needs of future generations.
7. Commitment to self-sufficiency.
8. Wisdom and balance in decision making.
9. Thoughtful, island-appropriate innovation.
10. Nurturance of the health and well-being of our families and our communities.

The Maui County Council is in the process of reviewing the *draft* Maui Island Plan. Once approved, the Maui Island Plan will be used by the County Council, Maui Planning Commission, County staff, and the community as policy support for day-to-day decision making. As it relates to the *draft* Maui Island Plan, the subject parcel lies within the proposed Urban Growth Boundaries for by the Plan. [See Figure 13, Directed Growth Map.](#)

The Countywide Policy Plan sets forth broad goals, objectives, policies, and actions that reflect the desired direction of future growth in the County. In terms of context, those that relate to the proposed action are listed below:



Goal: A. Protect the Natural Environment

Objective: 3. Improve the stewardship of the natural environment.

Policy: 3c. Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

Analysis: Potential short and long-term impacts to the natural environment have been evaluated in Chapter III of this document.

Goal: F. Strengthen the Local Economy

Objective: 1. Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of growth.

Policies: 1a. Support economic decisions that create long-term benefits.
1d. Support and promote locally-produced products and locally-owned operations and businesses that benefit local communities and meet local demand.

Analysis: As indicated in Chapter III.B.2 of this document, the proposed project will have a positive effect on the State and local economy and is not expected to have an adverse impact on economic conditions in the State of Hawai'i and the County of Maui.

Objective: 3. Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.

Policy: 3i. Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.

Analysis: All lot owners will be encouraged to utilize water and energy conservation measures when developing their parcels in the future.

Objective: 4. Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies: 4a. Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.

4d. Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.



Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan (PAMP) area, and Project District 10 (PD 10) all fall within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

Goal: J. Promote Sustainable Land Use and Growth Management

Objective: 1. Improve land use management and implement a directed-growth strategy.

Policies: 1b. Direct urban and rural growth to designated areas.

Analysis: The subject property is situated in an appropriate area for urban expansion and development. The subject parcel and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

Objective: 3. Design all developments to be in harmony with the environment and to protect each community's sense of place.

Analysis: All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

Objective: 4. Improve and increase efficiency in land use planning and management.

Policy: 4b. Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.



Analysis: The subject parcel is located in an appropriate area for urban expansion and development. The community need and justification for the proposed project and an assessment of potential impacts are included in Chapter III of this document.

In light of the foregoing, the proposed project is deemed to be consistent with the Countywide Policy Plan for the 2030 General Plan.

B. KIHEI-MAKENA COMMUNITY PLAN

Maui County has adopted nine community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the broad General Plan themes, objectives and policies.

The locations and land use categories shown on the community plan map serve to guide growth and future development in the South Maui region. The Kihei-Makena Community Plan (KMCP), which was first adopted by Ordinance No. 1490 in 1985, was updated in 1997 as part of the County's decennial review of the various community plans. The updated KMCP was adopted by Ordinance No. 2641 and went into effect on March 6, 1998. The subject parcel is designated *Agriculture* by the community plan's land use map. [See Figure 14, Kihei-Makena Community Plan.](#)

Project District 10 (Old Pu`unene Airport area) lies to the west of the subject parcel and is the only land use in the area that has been included in the KMCP. Although the subject parcel and PD 10 were included in the KMCP region, it can be argued that this area should have been included in the Wailuku-Kahului Community Plan region given its geographic location and proximity to Kahului, and its association with historic land use and development in Central Maui.

The granting of the Community Plan Amendment (from *Agriculture* to *Heavy Industrial*) will provide an appropriate area for purely heavy industrial uses in Central Maui. The proposed action is in consonance with the following community plan objectives, policies, and standards:



LAND USE

Goal

A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructural and community needs while preserving and enhancing the unique character of Maalaea, Kihei, Wailea, and Makena, as well as the region's natural environment, marine resources, and traditional shoreline areas.

Objectives and Policies

- k. Provide for moderate expansion of services in the Central Maui Baseyard. These areas should not be used for retail businesses or commercial activities. These actions will place industrial use near existing and proposed transportation arteries for the efficient movement of goods.
- r. Allow special permits in the State Agricultural Districts to accommodate unusual yet reasonable uses.

ECONOMIC ACTIVITY

Goal

A diversified and stable economic base, which serves resident and visitor needs while providing long-term resident employment.

Objectives and Policies

- a. Establish a sustainable rate of economic development consistent with concurrent provision of needed transportation, utilities, and public facilities improvements.

PHYSICAL AND SOCIAL INFRASTRUCTURE

Goal

Provision of facility systems, public services, and capital improvement projects in an efficient, reliable, cost effective, and environmentally sensitive manner which accommodates the needs of the Kihei-Makena community, and fully support present and planned land uses, especially in the case of project district implementation.

Liquid and Solid Waste

Objectives and Policies

- b. Provide efficient, safe, and environmentally sound systems for the reuse, recycling, and disposal of liquid and solid wastes.



Energy and Public Utilities

Objectives and Policies

- g. Encourage the provision of public utilities, which will meet community needs in a timely manner.

GOVERNMENT

Goal

Efficient, effective, and responsive government services in the Kihei-Makena region.

Objectives and Policies

- b. Continue to streamline the permit process, where appropriate, through means such as consolidated public hearings and concurrent processing of applications.
- c. Continue to expedite the review and approval process for projects, which will result in public benefit by “*fast tracking*” and the assignment of permit expeditors.

C. MAUI COUNTY ZONING

The subject property is zoned for *Agricultural District* uses by the County of Maui.

[See Appendix A, Zoning and Flood Confirmation and Figure 15, Maui County Zoning.](#)

Zoning standards for this district are promulgated by Chapter 19.30A of the Maui County Code (MCC). Principal permitted uses within the County’s Agricultural Zoning District include: (1) agriculture, (2) agricultural land conservation, (3) agricultural parks, (4) animal and livestock raising, (5) private agricultural parks, and (6) minor utility facilities. Permitted accessory uses include two farm dwellings per lot and one farm labor dwelling (per five acres of lot area).

On September 21, 2012, the Maui County Council approved a bill for *M-3, Restricted Industrial District* zoning. The bill was signed by the Mayor on September 24, 2012 and was designated Ordinance No. 3977. It should be noted that CMBY’s application for the Change in Zoning (CIZ) was initially prepared on the basis of seeking a zoning change from *Agricultural* to *M-2, Heavy Industrial*. However, with the recent adoption of *M-3, Restricted Industrial* zoning, the CIZ application has been amended to request a change to *M-3* zoning.



Generally, *M-3, Restricted Industrial* zoning encompasses those uses that involve the manufacture, processing, storage, or treatment of goods from raw materials. The intent of *M-3* zoning is to provide for manufacturing and nuisance industries and exclude retail and office uses. Some of the uses permitted under *M-3* zoning include: canneries; factories; manufacturing facilities; major utility facilities; landfills, lumber yards; machine shops; rock quarries; and material recycling/processing facilities. The minimum lot size under *M-3* zoning is 10,000 square feet, while the minimum lot width is 75 feet and the maximum building height is 90 feet. Side and rear setbacks are zero feet or the same as the adjoining zoning category whichever is greater. See [Appendix C, *M-3 Restricted Industrial Zoning Regulations*](#).

In order to develop the proposed subdivision, land use consistency must be established among the current State land use, community plan, and zoning designations for the subject property. Section 18.04.030 of the Maui County Code regarding subdivisions states in pertinent part that “*the director shall not approve any subdivision that does not conform to or is consistent with the county general plan, community plans, land use ordinances, the provisions of the Maui County Code, and other laws relating to the use of land . . .*”. As final subdivision approval would be subject to this provision, the land owner is seeking the change in zoning to establish State land use, community plan, and zoning consistency for the subject property.

In accordance with this request, the land owner submits that the proposed action meets the following criteria for a zoning change as set forth in Section 19.510.040 of the Maui County Code.

1. *The proposed request meets the intent of the general plan and objectives and policies of the community plans of the County.*

Analysis: As discussed in Chapter V.A and Chapter V.B of this document, the proposed request meets the intent of the Maui County General Plan and the objectives and policies of the Kihei-Makena Community Plan which guides growth and development in the region through the year 2010.

2. *The proposed request is consistent with the applicable community plan land use map of the County.*



Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). As such, the subject property is located in an appropriate area for future urban expansion and development and is consistent with the *draft* Maui Island Plan which will guide future growth on the island of Maui through 2030 and also serve as guidance for the community plan update process which will commence in the near term.

3. *The proposed request meets the intent and purpose of the district being requested.*

Analysis: The change in zoning request meets the purpose and intent of the existing and proposed heavy industrial zoning regulations. The granting of the proposed request would provide the land owner with the appropriate land use entitlements for the long-term use of the subject property for heavy industrial purposes.

4. *The application, if granted, would not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems, or other public requirements, conveniences and improvements.*

Analysis: As discussed in Chapter III.C and Chapter III.D of this document, the proposed subdivision will not have a significant impact on public or private services, facilities, and infrastructure systems nor is it expected to adversely affect or interfere with public requirements, conveniences, and improvements.

5. *The application, if granted would not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.*

Analysis: As discussed in Chapter III of this document, the proposed action will not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.



6. *If the application for change in zoning involves the establishment of an agricultural district with a minimum lot size of two acres, an agricultural feasibility study shall be required and reviewed by the Department of Agriculture and the U.S. Soil Conservation Service.*

Analysis: Not applicable.

The reclassification of the subject parcel will not adversely affect neighboring land uses, as the existing character of the agricultural-zoned properties in the surrounding area will be maintained. From a long-term perspective, the reclassification of the subject property will provide land use consistency for the subject property and establish an appropriate area for heavy industrial activities. It will also increase the limited inventory of lands that are currently available for purely heavy industrial use, and create new business and employment opportunities for island residents.



VI. SUMMARY OF ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Potential construction-related impacts include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust emissions discharged by construction equipment. These effects are temporary, and appropriate Best Management Practices will be implemented to ensure that these construction-related impacts are mitigated.



VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed action will involve the commitment of fuel, labor, and material resources, as well as private funds. The proposed action will also involve the commitment of land which is typical of development projects and is consistent with existing development in the project area. In terms of resource commitments, the use of the subject property for heavy industrial purposes will not have a negative effect upon the inventory of lands that are available for development purposes.



VIII. CHAPTER 343, HRS SIGNIFICANCE CRITERIA

As summarized below, the proposed action was evaluated pursuant to Section 11-200-12, HAR (*Environmental Impact Statement Rules*) which sets forth criteria for determining whether a proposed action may have a significant effect upon the environment.

1. ***No irrevocable commitment to loss or destruction of any natural or cultural resources would occur as a result of the proposed action***

Comment: As documented in this report, the proposed action will not result in the loss or destruction of any natural or cultural resources.

In terms of natural resources, no known, rare, threatened, or endangered species of flora and fauna have been observed on the subject property.

An Archaeological Inventory Survey (AIS) and an Archaeological Monitoring Plan (AMP) were prepared for the proposed project. From an archaeological standpoint, the ground surface of the subject parcel has been disturbed by previous military, hog farm, and scrap yard use, as well as by more recent land clearing activities. These ground disturbances make it very unlikely that any intact cultural deposits may remain in the subject area. The AIS provides further evidence to support this conclusion as no cultural remains were encountered on the surface or through sub-surface testing. The AMP establishes a protocol for archaeological monitoring during ground-altering construction activities. Should any cultural artifacts or human remains be located during construction, work will be halted in the immediate vicinity and the find shall be protected from further disturbance. The SHPD and/or the Maui/Lana`i Island Burial Council will be promptly notified to establish an appropriate mitigation strategy. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)



2. *The proposed action would not curtail the range of beneficial uses of the environment*

Comment: The range of beneficial uses of the environment will not be curtailed by this action. As documented in this report, the subject parcel is located in an appropriate area for heavy industrial development and will increase the limited inventory of heavy industrial lands that are available for such use.

3. *The proposed action does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

Comment: The proposed action is not contrary to the State's long-term environmental policies or goals. As documented in this report, appropriate mitigation measures will be implemented to minimize potentially adverse impacts to the environment.

4. *The economic or social welfare of the community or State would not be substantially affected by the proposed action*

Comment: Beneficial economic effects will accrue to the community from the proposed action. Lot owners will contribute to the economic well being of the community through the purchase of goods and services and the payment of sales and real property taxes. As documented in this report, the proposed action is not expected to result in any significant adverse impacts to the existing socio-economic environment.

5. *The proposed action does not substantially affect public health*

Comment: The proposed action is not expected to have an adverse effect upon the public's health and welfare. The development of the proposed project will comply with applicable regulatory requirements, permits, and approvals. Best Management Practices will be implemented during construction to mitigate any air, noise, and water quality impacts.

6. *No substantial secondary impacts such as population changes or effects on public facilities are anticipated*



Comment: Based on an assessment of the proposed action and existing socio-economic conditions, the proposed project is not expected to result in any significant secondary impacts to population, housing, and employment. Beneficial secondary effects associated with the proposed action include increasing the limited inventory of heavy industrial lands and creating new business and employment opportunities for the community. Infrastructure systems to be provided for the proposed subdivision include private internal roadways, and private drainage, water, and individual wastewater systems. As such, no impacts to existing public infrastructure systems are anticipated. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks. Impacts upon solid waste disposal and nearby motor sports recreational activities at Maui Raceway Park are considered minimal.

7. *No substantial degradation of environmental quality is anticipated*

Comment: Short-term, construction-related noise and air quality impacts will be addressed through the use of Best Management Practices. From a long term perspective, the proposed project is not expected to have an adverse impact on air quality and ambient noise levels nor is it anticipated to have a significant effect on open space and scenic resources, flora, fauna, streams, and wetlands. The storm water retention basins for the proposed subdivision will be designed in accordance with County drainage standards to ensure that runoff will not have an adverse impact upon adjacent and downstream properties. The proposed action is not expected to result in a substantial degradation of environmental quality.

8. *The proposed action does not involve a commitment to larger actions nor would it cumulatively have a considerable effect upon the environment*

Comment: The proposed action is not expected to result in long-term adverse impacts which are not capable of being mitigated. The proposed subdivision improvements will be completed in a single construction phase. In addition, the proposed action is not part of a larger action nor is it expected to result in cumulative impacts which result in considerable effects on the environment.



9. ***No rare, threatened or endangered species or their habitats would be adversely affected by the proposed action***

Comment: There are no known rare, threatened or endangered species of flora, fauna, or their habitats on the subject property. The proposed project is not expected to result in any short- or long-term adverse impacts to important wildlife habitats or plant and animal life.

10. ***Air quality, water quality or ambient noise levels would not be detrimentally affected by the proposed action***

Comment: Construction activities are expected to result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, will be implemented during construction to minimize wind-blown emissions. Noise impacts will primarily result from construction-related activities. To minimize these impacts, construction will be limited to daylight working hours. Water quality is not expected to be affected.

In the long term, the proposed project is not expected to have an adverse effect on air quality in the area. In addition, the project is not anticipated to have a significant impact on ambient noise levels. As applicable, future lot owners will be responsible for obtaining the necessary Department of Health permits for activities associated with certain types of industrial uses (e.g., air quality permits, noise permits).

11. ***The proposed action would not affect environmentally sensitive areas such as flood plains, tsunami zones, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters***

Comment: The subject property lies within Zone "X", an area of minimal flooding. The project site is not located within any environmentally sensitive areas nor will it have any adverse effects on any such areas. The project site is not subject to flooding or tsunami inundation and the soils underlying the project site are not subject to severe erosion. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

12. ***The proposed action would not substantially affect scenic views and view planes identified in County or State plans or studies***



Comment: The subject parcel does not contain any scenic features nor is it located in a scenic view plane. The proposed project will not affect public view corridors nor will it impact scenic coastal views.

13. *The proposed action would not require substantial energy consumption*

Comment: The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project may create an additional demand for electricity. However, this demand is not deemed substantial or excessive within the context of the region's overall energy consumption.



IX. FINDINGS AND CONCLUSIONS

The proposed action involves a request to amend the current “Agricultural” land use classifications for the subject parcel to allow the property to be used for long-term heavy industrial purposes.

As discussed in Chapter III of this document, the proposed action will not adversely affect the existing physical and socio-economic environment as the proposed project will comply with all applicable Federal, State, and County rules and regulations. The proposed action will not burden government agencies with the responsibility of providing or improving additional public services and infrastructure as public services are adequate and infrastructure will be developed by the land owner.

In light of the foregoing, a Finding of No Significant Impact (FONSI) is warranted as the proposed action is not expected to result in any significant environmental impacts.



X. REFERENCES

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