CHAPTER V

Affected Human Environment, Potential Impacts and Mitigation Measures

V. AFFECTED HUMAN ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. HUMAN ENVIRONMENT

1. Surrounding Land Uses

Existing Conditions. The project site is bound to the south by agricultural lands that are owned by the Applicant. These lands are leased by HC&S for sugar cane cultivation. To the west are agricultural lands that rise to the base of the West Maui Mountains. These lands are used for diversified agriculture and grazing cattle. To the east are agricultural lands that were recently acquired by the County of Maui for a County baseyard and regional park complex. Beyond the County owned property is agricultural land that A&B Properties proposes to develop. The proposed A&B development, known as Wai`ale, may include up to 2,550 residential units together with civic and commercial uses. In 2014 A&B Properties obtained a State Land Use Commission District Boundary Amendment from Agriculture to Urban to support the Wai`ale Development. To the north is the Waikapū Stream, which separates the proposed development from Waikapū Town. Waikapū Town is comprised mostly of single-family residences. Many of these residences were constructed from the early 1900s through the 1950s for workers of the Wailuku Sugar Company. The older neighborhoods are located along East and West Waiko Roads and are bound by the Waikapū Cemetery to the east, the Waikapū Stream to the south, and the mauka reaches of West Waiko Road. In recent years development has begun to stretch north, towards Wailuku, both mauka and makai of Honoapi'ilani Highway.

Potential Impacts and Mitigation Measures. The project area is located within the MIPs Small Town Growth Boundary. The MIP describes Waikapū Country Town as a "self-sufficient small town with a mix of single-family and multi-family housing units in a walkable community that includes affordable housing in close proximity to Wailuku's employment centers ….". The

Waikapū area is an evolving community. The immediate area has seen several new housing developments built-our over the prior decade. These subdivisions have predominantly served the local market rather than off-shore buyers. With the planned development of Wai`ale and the WCT, Waikapū will evolve to become a more complete community, supportive of a concentration of residential housing, public facilities such as parks and schools, shopping, employment and infrastructure to become a more independent small town. The direct, indirect and cumulative impacts associated with the region's growth is discussed in Chapters IV through VI of the ~~DEIS~~ FEIS.

2. **Air Quality**

Existing Conditions. An Air Quality Study was conducted by B.D Neal & Associates to examine the potential short- and long-term air quality impacts that could occur as a result of the construction and operation phases of the development and suggests mitigation measures to reduce any potential air quality impacts where possible and appropriate (**See**: Appendix C, "Air Quality Study".

Both Federal and State standards have been established to maintain ambient air quality. Seven parameters are regulated: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. State of Hawai'i air quality standards are either equally or more stringent than the comparable national standards. Hawai'i air quality standards are comparable to the national standards except those for nitrogen dioxide and carbon monoxide which are more stringent than the national standards.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the project area is very much affected by its elevation near sea level and by nearby mountains. The predominant trade winds tend to be channeled through the area by the mountains to the east and west. Temperatures in the project area are generally very consistent and warm with average daily temperatures ranging from about 68°F to 81°F. A generally semi-arid climate pertains. The project site receives its highest rainfall during the winter and lowest rainfall during the summer. Throughout the year rainfall is relatively low, averaging approximately 20- to 30-inches per year, with the monthly average ranging from 0.25 inches in August to approximately 5-inches in January.[ix]

At 30-feet above the ground, wind speeds across the site range from about 5.5 meters per second to 7.5 meters per second, which is approximately 12 to 17 miles per hour.[x] Except for periodic impacts from volcanic emissions (vog) and possibly occasional localized impacts from traffic congestion and local agricultural sources, the present air quality of the project area is believed to be relatively good. There is very little air quality monitoring data from the Department of Health for the project area, but the limited data that are available suggest that concentrations are generally within state and national air quality standards. During this study's air quality modeling, it was determined that present 1-hour and 8-hour worst-case carbon monoxide concentrations are well within both the state and the national ambient air quality standards.

Potential Impacts and Mitigation Measures. There may be some short- and/or long-term impacts on air quality that may occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust could occur during the project construction phases. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the minor disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction.

State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Therefore, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by the following types of BMP's:

- Watering of active work areas;
- Using wind screens;
- Keeping adjacent paved roads clean; and
- Covering of open-bodied trucks.

Other dust control measures to consider include:

- Limiting the area that is disturbed at any given time;
- Mulching or chemically stabilizing inactive areas that have been worked; and

- Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions.
- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular routes, and locating potential dust-generating equipment in areas of least impact;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and

Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.

To assess the potential long-term impact of emissions from project-related motor vehicle traffic operating on roadways in the project area after construction is completed, a computerized air quality modeling study was undertaken. The air quality modeling study estimated current worst-case concentrations of carbon monoxide at intersections in the project vicinity and predicted future levels both with and without the proposed project. During worst-case conditions, model results indicated that present 1-hour and 8-hour worst-case carbon monoxide concentrations are well within both the state and the national ambient air quality standards.

In the year 2026 without the project, worst-case carbon monoxide concentrations were predicted to decrease (improve) despite an increase in traffic, and concentrations would remain well within standards. This is because emissions from the increase in traffic will be more than offset by the retirement of older, more-polluting vehicles over time. With the project in the year 2026 and with proposed roadway improvements, estimated worst-case carbon monoxide concentrations indicated only minimal or no impact compared to the without project case. Concentrations would remain well within standards. Due to the negligible impact the project is expected to have, implementing mitigation measures for long-term traffic-related air quality impacts is unnecessary and unwarranted.

Regarding the Project's WWRF, the primary issue is the potential for off-site odor nuisance, typically from hydrogen sulfide (H2S) emissions. The Hawai'i Department of Health has established a standard for H2S of 0.025 ppm for a one-hour average. While this standard may

provide protection from detrimental health effects of H2S, it does not guard against odor nuisance. The odor threshold for sensitive individuals is generally taken to be about 0.005 ppm. The Applicant's wastewater reclamation facility designer, Mana Water, has committed to limiting the concentration of H2S at the facility boundary to 0.005 ppm. This, and the significant agricultural buffer around the facility, should effectively preclude the occurrence of offsite odor nuisance from the facility.

3. **Noise Quality**

Existing Conditions. The noise level is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, and heating, ventilation, and air-conditioning equipment. Ramifications of various sound levels and types may impact health conditions and an area's aesthetic appeal.

A Noise Assessment Report was prepared by D.L. Adams & Associates to describe the existing and future traffic noise levels in the environs of the project site. Traffic noise level increases and impacts associated with the project were determined within the project site and along public roadways servicing the development. Impacts from on-site activities and short-term construction noise at the project site were also assessed. Recommendations for minimizing noise impacts are also provided (**See**: Appendix D, "Noise Assessment Report").

The project area is currently exposed to varying daytime ambient noise levels, depending on the proximity to major roadways. The areas adjacent to Honoapi'ilani Highway experience the highest ambient noise levels during peak traffic hours where vehicular traffic noise is the dominant noise source.

Ambient noise levels range from 53 to 64 dBA adjacent to Honoapi'ilani Highway. The ambient noise environment is relatively low in areas that are far from the major roadways. The areas adjacent to Honoapi'ilani Highway experience the highest ambient noise levels during peak traffic hours where vehicular traffic noise is the dominant noise source. The results from the long-term noise measurements conducted at the WCT site indicate that the existing day-night level is less than 60 dBA for areas located beyond 65 feet from the edge-of-pavement of Honoapi'ilani Highway. Therefore, the noise levels for a majority of the project site are within

the HUD site acceptability standards, which state a design goal of Ldn ≤ 65 dBA for the exterior noise level. The noise sources that exist throughout the project site include traffic, wind, birds, occasional aircraft flyovers, and construction equipment.

Potential Impacts and Mitigation Measures. The Noise Assessment Report (See Appendix D) addresses the following noise related impacts:

- Construction phase impacts to neighboring properties and residents of the project;
- Operational phase impacts from project generated traffic and stationary mechanical equipment; and
- Impacts to residents of the project from internal and external vehicular traffic.

Construction Phase Traffic Impacts

The various construction phases of the project will generate significant amounts of noise. Depending on when construction occurs, the WCT development may impact existing adjacent properties, such as the homes and businesses adjacent to Honoapi'ilani Highway and Waiko Road. Similarly, residences from the initial phases may be impacted by construction noise from subsequent phases due to their proximity to the construction site.

Development of the project areas will involve excavation, grading, and other typical construction activities during construction. The use of impact equipment is not anticipated. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction. In cases where construction noise is expected to exceed the HDOH "maximum permissible" property line noise levels, a permit must be obtained to allow the operation of construction equipment.

Prior to issuing the noise permit, HDOH may require action by the contractor to incorporate noise mitigation into the construction plan. HDOH may also require the contractor to conduct noise monitoring or community meetings inviting the neighboring residents and business owners to discuss construction noise. The contractor should use reasonable and standard practices to mitigate noise, such as using mufflers on diesel and gasoline engines, using properly

tuned and balanced machines, etc. However, HDOH may require additional noise mitigation, such as temporary noise barriers, or time of day usage limits for certain kinds of construction activities. Table 27 ~~24~~ identifies standard construction noise source control methods.

Table 27 ~~24~~: Construction Noise Source Control Methods

Construction Noise Source Control Methods	
Scheduling	Limit activities that generate the most noise to less sensitive time periods (e.g. daytime hours).
Substitution	Use quieter methods/equipment when possible (i.e. low noise generators, smaller excavators, etc.).
Exhaust Mufflers	Install quality mufflers on equipment
Reduced Power Options	Use smallest size and/or lowest power as required.
Quieter Backup Alarms	Install manual adjustable or ambient sensitive alarms. Do not use backup alarms during night work.
Motors	Insulate or enclose motors
Equipment Selection	Electric equipment is quitter than pneumatic equipment
Equipment Retrofit	Rubber chucks in jackhammers
Equipment Maintenance	Sharpen and balance tools, repair silencing equipment, replace worn parts and open airways
Staging Area	Maximize the distance between the construction staging areas and nearby receptors to the greatest extent possible

Mechanical Equipment

Expected mechanical equipment may include air handling equipment, condensing units, refrigeration units, etc. Noise from this mechanical equipment at the commercial, mixed-use, and school sites could significantly impact the proposed adjacent noise sensitive residential areas. The HDOH Community Noise Rule stipulates maximum permissible noise limits at the property line for mechanical equipment. The noise limits are 60 dBA during the day and 50 dBA during the night for business and commercial areas. Mitigation of mechanical noise to meet the HDOH noise rules should be incorporated into the project design. For mixed zoning districts, the

primary land use designation is used to determine the maximum permissible noise limits. However, the HDOH takes into consideration background noise levels when assessing noise infractions.

The build out of residential units in the may also incorporate stationary exterior mechanical equipment. For single family homes, noise limits are 55 dBA during the day and 45 dBA during the night. For multi-family homes, noise limits are 60 dBA during the day and 50 dBA during the night. As with the commercial build out, the design and selection of exterior mechanical equipment for the residential units must comply with the HDOH property line noise limits.

Impacts from On- and Off-site Traffic

Future year traffic projections show that the FHWA maximum noise limit of 67 dBA will be satisfied for homes that are located more than 60 feet from the edge-of-pavement of Honoapi'ilani Highway. Although the FHWA criteria is not a regulatory requirement for this project, as it has no authority to enforce land use, its noise limit criteria is recommended by the FHWA to be used as a guideline for consideration of land use and the impact of traffic noise.

The projected traffic volumes and speed limits on the future roadways that provide access to the WCT are not significant enough to generate noise levels greater than 60 dB at the adjacent residential property lines. This is true for the main access roads off of Honoapi'ilani Highway as well as the future Wai`ale Road extension.

The results from the long-term noise measurements conducted at the WCT site indicate that the existing day-night level is less than 60 dBA for areas located beyond 65 feet from the edge-of-pavement along Honoapi'ilani Highway. Therefore, the noise levels for a majority of the project site are within the HUD site acceptability standards, which state a design goal of Ldn ≤ 65 dBA for the exterior noise level.

Residences within the WCT development that are located along Honoapi'ilani Highway and the major perimeter roadways will be exposed to elevated traffic noise. HUD site acceptability standards must be satisfied by providing minimum setback distances or other traffic noise mitigation measures in order to reduce the noise impact to these homes.

Vehicular traffic noise from Honoapi'ilani Highway may impact the proposed development unless noise mitigation is considered. Table 28 ~~25~~ identifies the minimum setback distances to satisfy the HUD Site Accessibility Standards.

Table 28 ~~25~~: Minimum Setback Distances to Satisfy HUD Site Acceptability Standards

Minimum Setback Distances to Satisfy HUD Site Accessibility Standards	
Roadway	**Setback**
Honoapi'ilani Highway	60 feet
Future Wai`ale Road Extension	None Required
Future Main Street	None Required
Future Collector and Minor Streets	Non Required

The guidelines listed below are general in nature and should be applied where residential housing is constructed within the setback limits listed above and noise mitigation becomes necessary. The following are effective noise mitigation measures.

- Construct barrier walls and/or earthen berms along roadways.
- Air-condition buildings instead of relying on natural ventilation.
- Acoustically soften interior spaces by the addition of thick carpeting with a padding underlayment, an acoustical tile ceiling, louvered closet doors, etc.
- Use exterior wall constructions which exhibit high noise reductions.

Typical exterior-to-interior noise reductions for naturally ventilated homes, i.e., with open windows, are approximately 9 dB. Adding absorption to interior spaces, (acoustically softening), can further reduce the noise levels 1 to 5 dB, depending upon the absorption initially present, and the amount of absorption added to the space. Air-conditioned or mechanically ventilated homes will also typically exhibit higher exterior-to-interior noise reductions achieved by several types of building constructions.

Noise impacts from the Wastewater Reclamation Facility

Based on data collected of similar facility and operations, the wastewater treatment facility is not expected to produce high noise levels at or beyond property lines adjacent to it. It is anticipated that noise level at the proposed WWRF site would be compliant with the HDOH noise regulations for all operating hours and classifications. The exact noise level generated by the facility will be a function of the specific design, equipment selection, and operations. If noise from the proposed facility is significantly higher than the data collected at a similar facility, it may require additional acoustical mitigation based on the specifics of the actual equipment and design.

4. **Historical and Archaeological Resources**

Existing Conditions. Archaeological Services Hawai'i, LLC conducted an archaeological inventory survey (AIS) of the parcels and portions of parcels that are proposed for urban development. The AIS also addressed traditional sites previously identified in adjoining lands and or near the Project. These sites are discussed in significant detail in the Traditional and Historical Background and Previous Archaeology sections of the AIS (**See**: Appendix E). As described in the AIS, the Project's Area of Potential Effect is the lands that will undergo ground altering activities during development. Furthermore, the mauka most property along Waikapū Stream within TMK [2] 3-6-004:003 is to be developed utilizing only hiking trails and open space, which already currently exist, and thus minimal ground altering activities are anticipated; however the area was subjected to 31 backhoe trenches in 2007. Note that these lands are to remain in agricultural use, are not subject to changes in land use entitlements, and will not be subject to urban or rural development but are also addressed in the AIS.

The parcels subject to the study included ~~subject parcels to be developed~~ (TMK's 3-6-002:003; 3-6-004:003, 006; and 3-6-005:007) (**See**: Appendix E, "Archaeological Inventory Survey"). The AIS was conducted to determine the presence/absence, extent, and significance of historic properties within the project area and to formulate future mitigation measures for these remains. For the purpose of conducting the AIS, the project area was divided into five areas of analysis based primarily on the TMK's. These areas are described below (**See:** Figure 37 ~~32~~, AIS Site Survey Map).

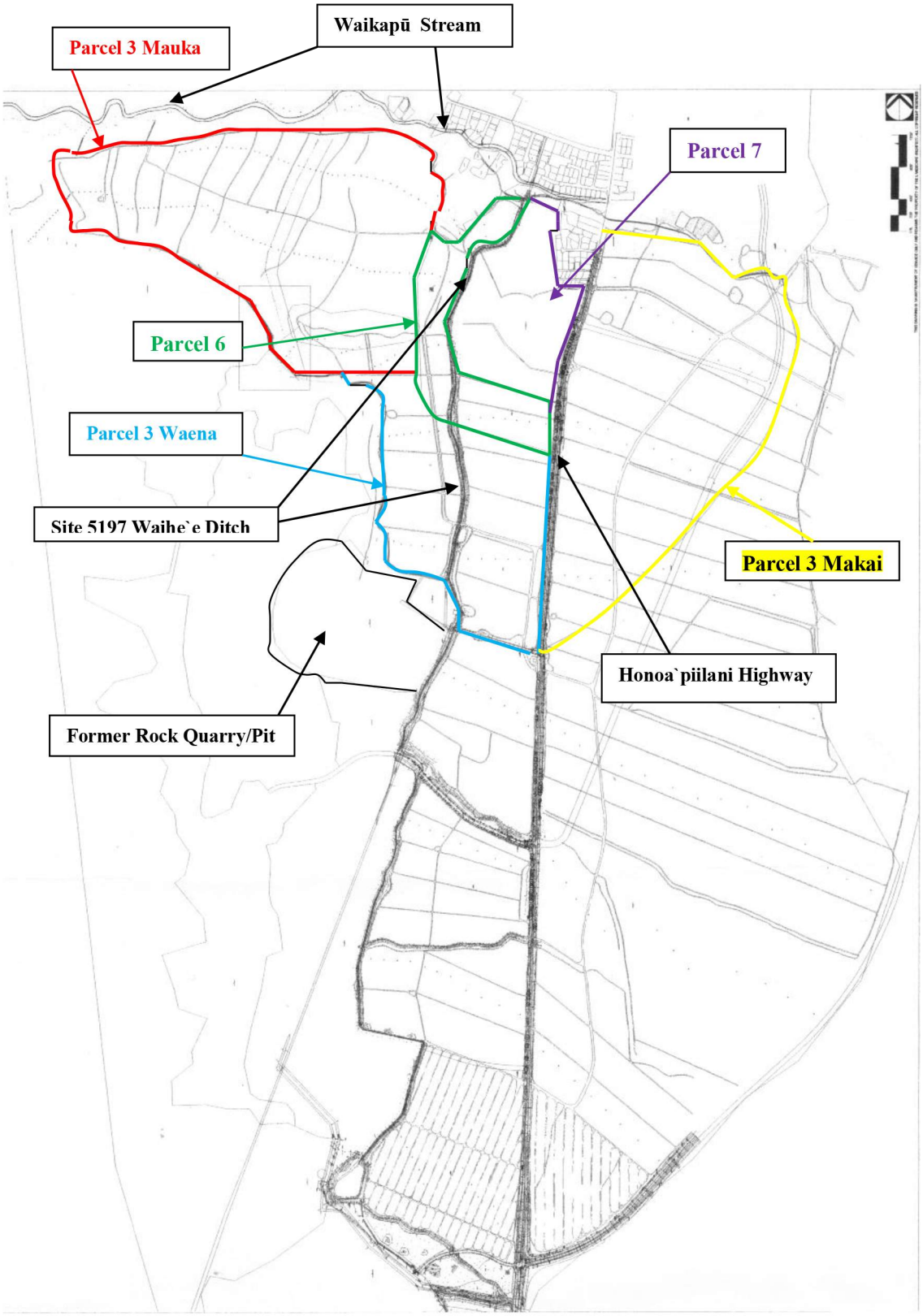

Figure 37: AIS Site Survey Map

Parcel 3 Mauka

Parcel 3 Mauka is the northern portion of TMK 3-6-004:003 and comprises approximately 180 acres that defines the northwestern portion of the project area. Parcel 3 Mauka is currently utilized as pastureland, but was formerly fallow sugarcane.

Parcel 3 Waena

Parcel 3 Waena is the southern portion of TMK 3-6-004:003 and comprises approximately 70-acres. Site 5197 (Waihe`e Ditch) bisects the parcel north/south. Parcel 3 Waena is currently utilized as active sugarcane, pastureland and small scale agriculture.

Parcel 3 Makai

Parcel 3 Makai is a portion of TMK 3-6-002:003 and comprises approximately 250 acres. Parcel 3 Makai is cultivated in active sugarcane.

Parcel 6

Parcel 6 is an L-shaped parcel identified as TMK 3-6-005:006 and consists of 52.976 acres. The northern third of Parcel 6 is currently utilized as pastureland and was formerly fallow sugarcane; the central portion is in small scale agriculture for vegetables and fruit trees, and the southern third is active sugarcane.

Parcel 7

Parcel 7 is within the central portion of the overall project area and consists of the 59.054 acres which constitutes TMK 3-6-005:007 and the MTP. This parcel is enclosed by Waihe`e Ditch to the west; Honoapi`ilani Highway and residential development to the east; existing rural and residential lots to the north and Parcel 6 to the south.

HISTORIC LAND USE

The district (*moku*) of Wailuku is comprised of the following *ahupua`a*: Wai`ehu, Waihe`e, Waikapū, and Wailuku (See Figures 10 and 11 of the AIS in Appendix E of the ~~DEIS~~ FEIS). This region has also been referred to poetically as (four waters) (Nā Wai ‘Ehā and Elbert 1986: 377).

The land that encompasses the Wailuku District was extremely fertile with an abundance of water; thus, enabling large scale cultivation of *kalo* (taro).

The Waikapū Stream supported major irrigation systems with numerous pondfields (*lo'i)* and irrigation canals/ditches *('auwai)*, as well as agricultural crops and animal husbandry practices evidenced by LCA testimony during the Māhele and early map documentation (Figure 13 of the AIS). Subsequently, by the late-1800s the Waikapū Stream utilizing the same *'auwai* irrigation systems contributed to sugarcane cultivation that expanded far beyond the valley.

LAND TENURE

The entire Waikapū *ahupua`a* is comprised of 15,684 acres. There were 121 claims heard for Waikapū during the Māhele of 1845 (Creed 1993). Of these claims, 100 or 82% were awarded. Of these awards, the claimants listed in descending order the following land usage, *lo`i*, *kula*, house lot, salt, *wauke*, Hala, unspecified, potato, pig, sugar, fish , banana and a bull pen. Based on Creeds analysis, *lo`i* constituted the vast majority with 50%, *kula* 2.1%, house lots (1.8%) and the remaining less than 0.5%.

An analysis was conducted of the historic land tenure for the five specific project areas comprising the subject property. The assessment helped to determine the placement of back trenches for subsurface testing. The analysis produced the following documentation:

Parcel 3 Mauka

A total of twenty-eight (28) LCA's and seven (7) Grants were identified. Of the LCA claims, the majority were for *lo`i* (n=21), *kula* (n=11), house lots (n=5) and *hala* (n=5). For the seven grants, only two had land use which was for sugarcane at Grant 1844 'āpana 1 and 2.

In Parcel 3 Waena

No LCA or Grants were documented.

Parcel 6

A total of nineteen (19) LCA's and one (1) Grant were identified within this area. For the nineteen *Kuleana* claims, two had no information, *lo`i* were represented by 16, *kula* (n=7), house lots (n=3) and one no information. The Grant (GR 3152) was to Cornwell but no land use information was available.

Parcel 7

There were eleven (11) Land Commission Awards and 8 Grants within this area. For the *Kuleana* claims there were *lo`i* (n=7), house lots (n=6), *kula* (n=2), sugarcane (n=1) and *`auwai* (n=1). Of the eight Grants, only 2 had information which consisted of sugarcane.

Parcel 3 Makai

No Land Commission Awards were claimed and a total of one (1) Grant was identified within this section and consisted of a reservoir and sugarcane.

As exemplified in the land use tables and Figures 14 and 15 of the AIS (**See**: Appendix E, "Archaeological Inventory Survey"), other post-Contact land use consisted of the commercial production of sugarcane. The earliest commercial sugar production on Maui Island began in Wailuku in 1823 when Hungtai Sugar Works was founded by Chinese merchants. Wailuku Sugar Company was started in November of 1862 by James Robinson and Company, Thomas Cumming, J. Fuller, and C. Brewer and Company. In 1865, C. Brewer and company acquired controlling interest, with Robinson and Company and Cumming as the minority stockholders. In 1894, the Waihe`e Sugar Company and the Waikapū Sugar Company were bought out by the Wailuku Sugar Company. To assist in the infrastructure of sugarcane production, railroad construction was initiated in 1895. At this same time, political and economic issues surrounding water-rights emerged to the forefront (Donham1989:15). In the 1980's, the Wailuku Sugar Company converted to the Wailuku Agribusiness in order to diversify agricultural production.

TRADITIONAL SETTLEMENT PATTERNS

As noted, the current project area is situated along the foothills of the West Maui Mountains in the Waikapū *ahupua`a*. Previous archaeological investigations, coupled with the history of the

area focusing on previous land use, topographic features and ethno-historic accounts, can be used to develop a general predictive model for traditional Hawaiian settlement and subsistence patterns for the project area. The general region, including and encompassing the current project area, is referred to and appears to have once been part of a large wetland taro production area:

> *…Spreading north and South from the base of Waikapū to a considerable distance below the valley are the vestiges of extensive wet-taro plantings, now almost obliterated by sugar-cane cultivation; a few here and there are preserved in plantation camps and under house and garden sites along the roads. Among these gardens there were, in 1934, a few patches of dry Japanese taro. Far on the north side, just above the main road and at least half a mile below the entrance to the canyon, an extensive truck garden on old terrace ground showed the large area and the distance below and away from the valley that was anciently developed in terraced taro culture. On the south side there are likewise several sizable kuleanas where, in 1934, old terraces were used for truck gardening. In the largest of these a few old patches were flooded and planted with Hawaiian taro, and there was some dry Japanese taro. Several terraces were used as ponds planted with lotus for their edible seed. There were probably once a few small terraces on the narrow level strip of the valley bottom in the lower canyon… (Handy and Handy 1972:497).*

A hypothetical model for traditional Hawaiian settlement was developed by Kirch (1985) and Cordy (1978). According to this postulation, the project area would have been an ideal setting for early Hawaiian permanent habitation. Utilizing dates from other Hawaiian Islands, Cordy postulated that initial pre-Contact settlement in lower valleys and coastal regions occurred from 300 to 600 A.D. and by 1000 A.D. fishponds, protected bays, and religious structures.

The subject area contains a dominant waterway, Waikapū Stream with rich alluvial soils. Traditionally, this stream would have been utilized to create extensive irrigation systems containing numerous pondfields with associated *`auwai*. This stream not only supported the main dietary staple, *lo`i kalo,* but also *mai`a* (bananas), *`uala* (sweet potatoes), *kī* (ti) and trees

such as *niu* (coconuts), *wauke* (paper mulberry) and *lau hala*, but was also the freshwater source for the Keālia Ponds.

Habitation and religious structures, along with agricultural sites would have been distributed near the *lo`i* patch and down by the shore for marine exploitation, fish pond maintenance and the collection of salt at the salt pans of Mā`alaea and/or Keālia. Historically, the water source would have been important for some of the same reasons but habitation structures would also have been established around towns, railroads and plantation camps. By reviewing old maps and the Māhele record, the historic settlement patterns can be discerned. Conversely, through these archival records and archaeological investigations, the traditional settlement patterns can merely be inferred.

SITE EXPECTABILITY

Since these earlier studies, numerous archaeological studies have been conducted in the Waikapū and Wailuku *ahupua`a*. The majority of the studies have been implemented based on requirements set forth in the laws pertaining to the environmental impact of proposed development. A significant portion of development has occurred in areas of fallow pineapple and sugarcane. The impact of commercial agriculture on archaeological sites located in non-sand substrates located below 500 feet amsl appears to be severe and has resulted in the complete destruction of a significant portion of pre-contact sites. In areas that contain a sand matrix, intact, previously disturbed and isolated human remains have been documented. Pre-contact site components appear to have been less impacted by intensive agriculture in areas located above 500 feet amsl. Post-contact sites in the region are typically associated with agricultural activities [clearing mounds, water diversion structures (flumes and ditches), habitation, roads, and railroads] and ranching activities (walls).

Based on the aforementioned background information and settlement patterns, the type of sites and/or features that may be encountered within the project area would be associated with traditional and historic habitation, as well as agricultural and animal husbandry sites. Due to the extensive grading activities associated with sugarcane cultivation and the construction of the MTP commercial buildings, no surface structural remains associated with the pre-Contact and

post Contact areas are anticipated; however, features associated with sugarcane cultivation are likely. Remnant subsurface historic properties may include rock alignments, buried cultural deposits, pits and human burials. The likelihood of encountering these subsurface features throughout will be dependent upon the depth of the sugarcane till zone.

AIS FINDINGS

Archaeological procedures were conducted intermittently from February through June 2013 by supervisor Ms. Diane Guerriero (B.A.) and archaeological personnel Ms. Rochelle Barretto. Overall direction and coordination was performed by Ms. Lisa Rotunno-Hazuka (B.A.) and the Principal Investigator was Mr. Jeffrey Pantaleo (M.A).

The AIS fieldwork consisted of a pedestrian survey and subsurface exploration through the execution of 150 backhoe test trenches within the five aforementioned zones. The following historic properties were identified (**See**: Figure No. 38 ~~33~~, Historic Properties Identified during AIS):

- Sites 50-50-04-7881-7884 (formerly TS1, 3-5) comprised of 19 subcomponent features were newly recorded with the majority related to sugarcane cultivation.
- Site 5197 Waihe`e Ditch is extant within the central portion of the project area and was also recorded.
- Site 7881 Features 1-18 consists of concrete lined ditches, sluice gates, dirt culverts with concrete lined headwalls.
- Site 7882 (TS3) is a disturbed, historic L-shaped retaining wall.
- Site 7883 (TS3) comprises a World War II bunker.
- Site 7884 Features 1- 3 (TS 2 and 5) are secondarily deposited historic materials recorded at three localities within the project area.

Potential Impacts and Mitigation Measures. During the investigation, no evidence of traditional Hawaiian activities, with the possible exception of Site 7882 (remnant retaining wall or terrace) was recorded. These negative results are primarily due to the compounded

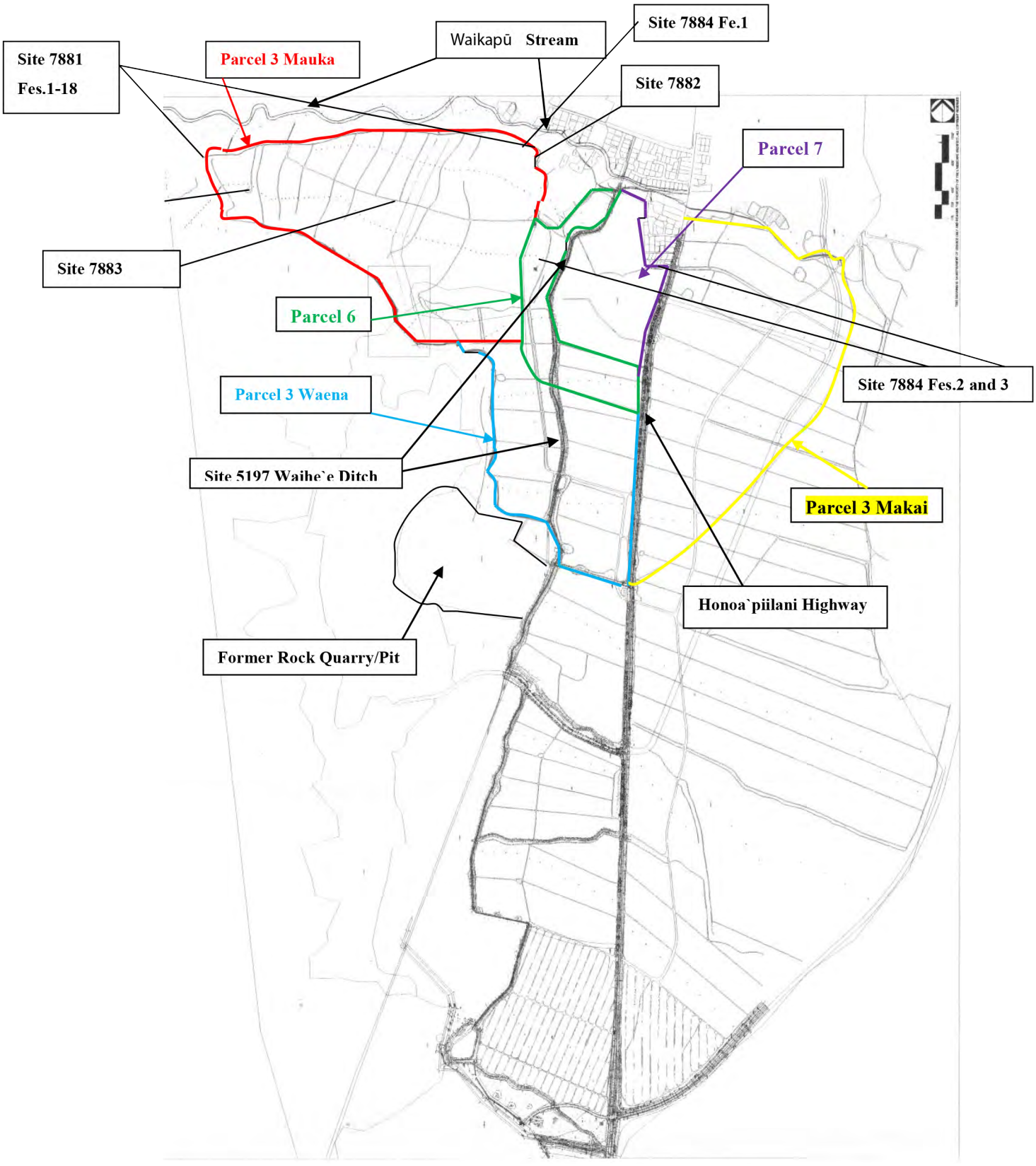

Figure 38:
Historic Properties Identified During AIS

disturbances from sugarcane cultivation, historic habitation and modern land use; and possibly the inherent bias of random sampling during the inventory survey testing. Sites 7881-7884 are considered significant under Criterion D, and one historic property, Site 7883 may be considered significant under Criterion C.

Site 7881 Features 1-18 is comprised of historic agricultural irrigation features consisting of a reservoir, concrete and earthen ditches, as well as sluice gates. These features are located along the northern boundary of Parcel 3 Mauka outside the proposed A.P.E. and will not be adversely affected.

Site 7882 is a remnant L-shaped retaining wall or terrace also located in the Parcel 3 Mauka within the northeast corner. This feature may have been constructed during the traditional period, but this supposition is inconclusive.

Site 7883 consists of a World War II bunker located within the east central portion of Parcel 3 Mauka. This site has been documented at the inventory level and may or may not be affected by proposed development.

Site 7884 comprises surficial scatters of historic domestic refuse (Features 1 and 2) and Feature 3 is a small historic trash dump, likely associated with former habitation.

A section of Site 5197 Waihe`e Ditch bisects the central portion of the project area in a north/south direction. This historic property was also recorded during the current undertaking and may be covered (though continue to be operational) during construction.

Based on the proposed development plan, Site 7884 Features 2-3 (historic trash scatter and refuse pit); a section of Site 5197 (Waihe`e Ditch) and possibly Site 7883 (WWII bunker) may be adversely affected during the development activities. These aforementioned historic properties have been properly recorded and may be removed and or altered during construction; however if it is recommended that if Site 7883, the WWII bunker cannot be preserved in place within the planned development, an interpretive plaque commemorating this site should be erected. Additionally, Sites 7881 (agricultural waterways, sluice gates, reservoirs) and 7882 (L-shaped

retaining wall) may be removed and or altered during construction; although no ground-altering activities are planned at this time.

Archaeological monitoring of Parcel 3 Mauka and Waena is primarily recommended for those areas which contain former LCA's and Grants, as well as extant historic properties; however spot monitoring inspections of other localities not expressed above may also be instituted. Parcels 6 and 7 contain numerous LCA's and Grants; thus monitoring will initially be full time until the nature of the subsurface conditions in relationship to the proposed ground-altering activities is determined. Similarly for Parcel 3 Makai, monitoring will initially be full-time; yet it is envisioned that the primary focus will be along the eastern and western perimeters which are close to Wai`ale and Waiko Roads, known areas to contain traditional and historic burials.

Prior to the commencement of construction, an Archaeological Monitoring Plan (AMP) detailing the localities to undergo monitoring procedures will be prepared and submitted to SHPD for review and approval.

5. **Cultural Resources**

A Cultural Impact Assessment (CIA) was prepared by Hana Pono, LLC to describe existing Native Hawaiian cultural activities, practices and resources that occur on the property, potential impacts from the project, and mitigation, if necessary, to address these impacts.

The CIA was prepared In accordance with the State Office of Environmental Quality Control (OEQC), "Guidelines for Assessing Cultural Impacts". The CIA identifies traditional, historical, or other noteworthy practices, resources, sites, and beliefs attached to the project area and analyzes the impact of the proposed development on these practices and cultural features. Information was collected through extensive research of historical and literary archives and by interviewing and consulting with lineal descendants, kūpuna, and long standing residents who have in depth knowledge of the area. (**See**: Appendix F, "Cultural Impact Assessment", for a complete presentation of the CIA). In addition, cultural consultant Hōkūao Pellegrino prepared a Ka Paʻakai Cultural Analysis based upon the results of the Project's AIS and CIA reports (**See**: Appendix F, A: Ka Paʻakai Cultural Analysis. The analytical framework for the Ka Paʻakai Cultural Analysis is based upon an assessment of the following:

1. The identity and scope of "valued cultural, historical, or natural resources" in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
2. The extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and
3. The feasible action, if any, to be taken by the (agency) to reasonably protect native Hawaiian rights if they are found to exist.

Description of Historical and Existing Conditions. The WCT project site has been used for agricultural purposes, primarily for sugarcane, since the 1870s. Prior to sugarcane, the lands along the Waikapū Stream, and in and around the existing Waikapū Town, were settled by native Hawaiians who cultivated loʻi kalo (wetland taro) and other traditional crops in terraced loʻi. The Waikapū Stream, one of four streams that comprise the Nā Wai ʻEhā, is an important cultural resource to native Hawaiians, who continue to have riparian rights for agricultural purposes. There are Kuleana lots, still owned by native Hawaiian and kamaʻāina families, within Waikapū and in close proximity to the Waikapū Stream. The Waikapū Stream corridor provides access to the Waikapū Valley, where native Hawaiian groups are currently reintroducing indigenous plants and trees into the valley.

The entire project area is located within the ʻili (subdivision) of ʻAikanahā, Kaumuʻīlio, Luapueo, Koʻolau, Kaloapelu, ʻĀhuakōlea, Kaʻōpala, Kaʻalaea, Kamaʻuhāliʻi, Pikokū, ʻŌlohe, Waihalulu, Kamaʻūhāliʻi, in the ahupuaʻa (land division) of Waikapū, moku (district) of Wailuku (Nā Wai ʻEhā), mokupuni (island) of Maui. The total land mass of the Waikapū ahupuaʻa, the southernmost ahupuaʻa in Nā Wai ʻEhā, consists of 15,684 acres from mauka to makai (mountain to the sea). The boundaries of the Waikapū ahupuaʻa are described in detail on page 18 of the CIA (See Appendix F).

Within the Waikapū watershed is an abundance of wai (water). Waikapū Stream was and continues to be an important cultural resource and part of the cultural landscape. Waikapū Stream flows on average of 3-4 MGD (Million Gallons per Day), which classifies it as a small perennial stream (USGS). It flows continuously above the diversions located in the stream built by the former Wailuku Sugar Company.

The upper regions of the Waikapū watershed once had an abundance of endemic and indigenous plants which were utilized for various cultural purposes by Hawaiians of the ahupua‘a. The dryland forested areas were dense with koai‘a (*Acacia koa*), ‘a‘ali‘i (*Dodonaea viscosa*), and alahe‘e (*Psydrax odorata*). All of these tree species would have been used for house construction. The stems of the olonā (*Touchardia latifolia*), a wet forest native plant would have been used for making cordage. Other native plants of importance that were commonly found in the Waikapū watershed was ko‘oko‘olau (*Bidens spp.*) and māmaki (*Pipturus albidus*), used for lā‘au lapa‘au (medicinal purposes). In the low lands of Waikapū, dry gulches, and at the entrance of Waikapū Valley is wiliwili (*Erythrina sandwicensis*) which was used to make papa he‘e nalu (surfboards).

The interior portion of the Waikapū watershed once allowed for extensive traditional pre-contact ‘auwai (irrigation systems) which irrigated vast amounts of land for kalo cultivation. The Waikapū Stream once flowed mauka to makai through the plains of Kama‘oma‘o, into the Keālia fishpond / wetland / estuary, and emptied into Mā‘alaea Bay. Hawaiians utilized the fresh water resources of the Waikapū Stream for lo‘i kalo cultivation. Ancient ditches called ‘auwai were built to bring a portion of stream water into traditional kuleana farm lands. Conservative estimates confirm that at the time of the Māhele of 1848, over 1,400 lo‘i kalo were under cultivation throughout the Waikapū ahupua‘a on a total of about 800 acres. According to oral accounts and scientific data, Waikapū stream once also contained native stream life such as the ‘o‘opu and ‘ōpae. Gathering and eating these aquatic species helped feed the pre- and post-contact populace of Waikapū.

Waikapū Stream experienced some of the earliest impacts and changes due in part to the establishment of Maui’s first sugar plantation; Waikapū Sugar Company, started by James Louzada and Henry Cornwell. Diversions built by Wailuku Sugar Company disrupted the Waikapū Stream and cut off the mauka to makai stream flow to Keālia. Native stream life began to decline and the wetlands of Keālia, which depended upon the stream flow, started to stagnate and dry up. By the early 1900s, the cultural landscape had increasingly changed due to impacts of the sugar plantation and the amount of water used to grow sugar. A visitor to Waikapū in the late 1860s wrote:

> *"The vestiges of extensive wet kalo plantations, are now almost obliterated by sugar-cane cultivation; a few here and there are preserved in plantation camps and under house and garden sites along the roads. The waters of this great stream, now utilized for irrigating a great acreage of sugarcane, was formerly diverted into loʻi."*

In 2013, there were fewer than 15 loʻi kalo on a total of 2 acres of kuleana land that are in cultivation. By comparison, 1,400 loʻi kalo were under cultivation 160 years ago.

There are ongoing efforts in the Waikapū ahupuaʻa to revitalize the water resources of the Waikapū Stream and to restore the remaining kuleana lands with loʻi kalo. The only remaining intact Māhele kuleana lands within the project boundaries are those found along the Waikapū Stream. However, only one such parcel of land is being utilized in its traditional form. The upper most kuleana parcel awarded to Kupalii (LCA 3546) is being leased and managed by Hui Mālama o Waikapū where a few of the loʻi kalo have been restored as well as a native dryland koaiʻa forest. Other lands adjacent to the project area are also being revitalized and used as they once were during the Māhele. Eassie Miller Jr. and his ʻOhana are continuing to cultivate loʻi kalo and maintain their family cemetery. Across the stream is the Pellegrino ʻOhana. The Pellegrino ʻOhana is also cultivating loʻi kalo by utilizing the Waikapū Stream.

The Waikapū Stream is an important cultural resource that plays a significant role in the current traditional practices of the area. Waikapū Valley is another cultural resource which is used for traditional gathering of lāʻau lapaʻau or medicinal plants as well as native plant and tree seeds used for propagation by Hui Mālama o Waikapū and other kamaʻāina of Waikapū. Traditional varieties of kalo and maiʻa (banana) grow in areas throughout the valley and families still gather them as a food source.

The project area was impacted by plantation agriculture at a very early period of time, therefore many kamaʻāina of Waikapū have no recollection of specific traditional practices other than sugarcane cultivation and cattle grazing in the project area. Those that were interviewed during the CIA process remembered cultural practices on kuleana lands being cultivated around the

project area but no accounts of traditional practices on the land being proposed for development.

There are, however, three kuleana lots still owned by descendants of the original claimant Ehunui (L.C.A. 2499 and Grant 1513) found within the lands owned by Waikapū Properties, LLC, but outside of the lands proposed for development.

Potential Impacts and Mitigation Measures. The purpose of the CIA was to investigate the impact that the WCT will have on the cultural practices and customs of the project area and surrounding lands through archival, literary, and oral accounts.

Waikapū has a long and rich cultural history and a strong representation of traditional cultural practices. The cultural practices and beliefs that are subject to this assessment include Hawaiian subsistence and residential agriculture on kuleana lands. These lands utilize the Waikapū Stream, which is a valuable cultural resource. Intricate irrigation systems built prior to western contact continue to be maintained and utilized. There are also on-going projects in the mauka portion of the Applicant's land that are being utilized for cultural site and native habitat restoration, while providing a traditional access point into the Waikapū Valley for gathering of lāʻau lapaʻau (medicinal plants) and native seed gathering.

The surrounding lands as identified through oral and archival accounts are also considered traditional cultural properties or Kuleana lands. These historic lands are associated with traditional practices and beliefs that have been in use prior to the Māhele of 1848. The surrounding traditional cultural properties are associated with events that have made an important contribution to the broad pattern of the Hawaiian culture while yielding information important for research on prehistory or current historical practices. The traditional agricultural practices and cultural/natural site restoration projects have an important value to the native Hawaiian people, the Waikapū community, and other ethnic groups found in Hawaiʻi by enhancing cultural identity and well-being.

Mitigation Measures

The CIA demonstrates that development of the WCT will not have a direct impact upon cultural sites, practices and traditions within the project area. However, the project could produce indirect impacts if not property managed. The following are areas of cultural concern and proposed mitigation measures.

Mahi Kuleana Parcels

There are two kuleana lots privately owned by the Mahi family (LCAw: 2499, R.P. 4070 AP 1 &2 to Ehunui) and (Grant 1153 to Ehunui) that are situated within TMK: (2) 3-6-004:003 on lands that are proposed to remain in agricultural use. These Kuleana lots are identified as TMK: Nos. (2) 3-6-005:009 (0.06 acres) and TMK: (2) 3-6-005:010 (0.5 acres). The subject parcels were initially situated within the confines of the development project, but the development plan was modified to go around these two parcels of land. The Mahi family has expressed that they would like to preserve their lands. In the oral interviews provided by the Mahi Family, they have voiced their concerns about the need to keep these lands in their family while working with the developer to seek a solution that will benefit both parties.

Waikapū Stream

Another community concern is the desire to protect and restore the Waikapū Stream. Waikapū Stream is considered Waikapū's most valuable cultural resource. Waikapū Properties, LLC uses a percentage of Waikapū Stream surface water via Wailuku Water Company's delivery system. The use of this water is for the MTP; irrigation of lands leased to HC&S for cultivating sugarcane, and irrigation to support diversified agriculture. Waikapū Properties since 2012 has drilled a total of 5 groundwater wells to be used for the Project and current and future agricultural endeavors. In May of 2014, The State Commission on Water Resource Management returned 2.9 mgd of surface water to the Waikapū Stream via the IIFS (Interim Instream Flow Process) (CWRM) and established a groundwater aquifer sustainable yield of 4 mgd (CWRM). The Waikapū community and many kuleana farmers are having discussions with the Applicant to establish a long term water use plan for both surface and groundwater. One significant concern of expressed by Kuleana farmers that are using water from Waikapū Stream for kalo cultivation is sedimentation into the stream. It was noted that sedimentation has occurred during large rainfall events as well as from maintenance and management issues associated with the existing

plantation infrastructure. The Applicant is committed to working with neighboring kuleana farmers to help resolve these issues.

Ground Water

The sustainable yield of the Waikapū aquifer is 3 million gallons per day (mgd). The Applicant has drilled 5 ground water wells that will be used for servicing the Project's potable and agricultural water demand. Concerns have been expressed about overall impact of the drilling of wells upon the health of the aquifer and surface water stream flows. The Applicant will strictly adhere to the water use allocations set forth by the State Commission on Water Resources Management (CWRM) to ensure that the pumpage from the on-site wells remains well within the sustainable yield for the aquifer.

Kuleana Agricultural Lands Adjacent to Waikapū Stream

The cultivation of kalo is an important traditional and customary right that is being practiced by kuleana farmers along the Waikapū Stream. These farmers rely upon stream water for their crops. Kalo farmers have shared their concerns about the accessibility of stream flow via the WCT's ʻauwai and the quality of the water within the Waikapū Stream.

Native Dryland Forest and Watershed

Degradation of native plant species and habitats within the Waikapū Ahupua'a are a significant concern for kuleana farmers that rely upon the Waikapū Stream and for Hui Mālama o Waikapū and other kamaʻāina of Waikapū that are actively engaged in the restoration of native dryland forests and invasive species eradication within the Ahupua'a. There is a concern that indirect impacts by increased accessibility into the Ahupua'a by future residents could result in further damage to the forest by introducing additional invasive species and disease. The Applicant is committed to working with the kamaʻāina of Waikapū and other concerned residents to develop proper access management programs to protect the Ahupua'a for future generations.

Inadvertent Finds (Artifacts & Burials)

Because the development will occur on former kuleana lands, there may be the potential of inadvertent finds such as artifacts and burials during the Project's construction phase. It is recommended that if any cultural features (i.e. artifacts, burials, etc.) are uncovered during

construction that the developer immediately contact the State Historic Preservation Division and comply with all applicable state laws. It is further recommended that close communication be maintained with the Waikapū Community since many of the kuleana lands once belonged to Hawaiian families, many of whom have descendants that continue to live in Waikapū.

On-going Community Input

The Waikapū community desires to continue to provide input on how to incorporate traditional cultural practices and knowledge within the development plan in order to maintain the unique traditions and practices of Waikapū and to preserve the community's identity.

Ka Pa'akai Cultural Analysis

The Ka Pa'akai Cultural Analysis (See: Appendix F, A) synthesizes and expands upon the work conducted in the Project's AIS and CIA to address the Land Use Commission's (LUC's) decision making criteria for evaluating a Project's impacts to the rights of Native Hawaiians to exercise traditional and customary practices. In the September 11, 2000 Hawai'i Supreme Court landmark decision ((*Ka Pa'akai o Ka 'Āina v Land Use Commission*), the court established a three-part process relative to evaluating the preservation and protection of customary and traditional native practices: first, to identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary Native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights will be affected or impaired by the proposed action; and third, to specify the feasible action, if any, to be taken by the regulatory body to reasonably protect Native Hawaiian rights if they are found to exist.

The Ka Pa'akai Cultural Analysis finds that there are specific valued cultural, historical and natural resources present and traditional and customary Native Hawaiian rights being exercised within the proposed Project. The Ka Pa'akai Cultural Analysis offers specific mitigation measures to ensure that there are minimal to no adverse effects on any of the cultural practices identified within the CIA. These mitigations center upon the following:

- Ensuring access to and along the Waikapū Stream for traditional and customary practices of Native Hawaiians occurring both within the stream and within the interior valley of the Waikapū watershed;
- Ensuring that the owners of the Mahi Kuleana parcels have access to their parcels;
- Ensuring that current and future Native Hawaiian practices associated with access to kuleana water for loʻi kalo cultivation are protected;
- Conducting archaeological monitoring during development of the subject Property.

The Ka Pa'akai Cultural Analysis further recommends that the Hawai'i Land Use Commission follow-up with the Applicant to ensure that Native Hawaiian rights and practices are preserved and that mitigation measures are formalized prior to securing entitlements. The Applicant has worked with the Waikapū community for several years to support traditional and customary Native Hawaiian Cultural practices within the Waikapū watershed and the Applicant concurs with the general findings of the Ka Pa'akai Cultural Analysis. The specific details regarding the Applicant's commitments can be addressed through further consultation with the relevant stakeholders.

6. **Visual Resources**

Existing Conditions. The WCT project area is located between the town of Wailuku to the north and Māʻalaea to the south along the Honoapi'ilani Highway. The project site generally slopes from west to east with a high elevation of approximately 710 feet mean sea level (msl) at the northwesterly corner and a low elevation of about 256 feet above msl at the southerly corner, within the fertile Central Maui isthmus.

Views from within the project site are both diverse and dramatic. Largely unobstructed views of Haleakalā, the West Maui Mountains, the Central Maui isthmus and the Pacific Ocean are available at the mid and upper elevations. At the higher elevations Wailuku and Kahului, East Maui and South Maui are all visible. From the lower elevations largely unobstructed views are available of the West Maui Mountains, Haleakalā, and sugar cane lands that stretch from Honoapi'ilani Highway to Māʻalaea and Kīhei.

These same lower elevation views are presently available from Honoapi'ilani Highway looking into the project site. The existing mauka view from Honoapi'ilani Highway into the project site is of agricultural fields planted in sugar and diversified crops, the MTP, and the valley and ridgelines of the West Maui Mountains. The makai view from the highway, where not obstructed by right-of-way vegetation, is of the existing sugarcane fields and Haleakalā. When the sugarcane has been harvested there are intermittent views of the ocean horizon (**See:** Figure 8 A-N, "Site Photographs").

Potential Impacts and Mitigation Measures. Chris Hart & Partners, Inc. prepared an island-wide Scenic Resources Inventory Study for the County of Maui, Department of Planning, in July 2006 in support of the General Plan 2030 Update. The purpose of the study was to inventory and rate the island's scenic resources so that appropriate advanced planning and mitigation strategies could be employed to protect these resources. The MIP incorporates the study's scenic roadway corridor recommendations into its "Context and Character Map" and references the corridors in policies within Chapter 3, Heritage Resources (**See:** Figure No. 39 ~~34~~, "Maui Island Plan, Context and Character Map").

The Scenic Resources Inventory Study identifies the area along Honoapi'ilani Highway, fronting the project site, as an area of "High" scenic resource value. In the study, areas of "Exceptional" and "High" resource value are described as having "dramatic and diverse resource values consistently throughout the corridor" and are "typically in a natural condition and unmarked by development." The study's GIS inventory provides "field study" notes that describe the character of the subject corridor. The notes describing the Honoapi'ilani corridor, fronting the project site, are as follows:

> *"High concentration of agricultural lands; open space; and distant Haleakalā views. Intact West Maui mountain views and expansive views of Mā'alaea and the Kīhei coastline and Lana`i views exist. There is considerable utility clutter along the highway. Sprawl conditions along the highway between Waikapū and Mā'alaea should be avoided through the establishment of clear boundaries and features such as landscape plantings and entry signage."*

"Registered Historic Parcels" and "Registered Historic Sites" only represent those listed on State or National Registers and included within Maui County's GIS system. Sites shown are not all-inclusive and do not represent all historic sites on Maui. As additional data becomes available it will be integrated into future mapping.

Kahana
Ka'anapali
Lahaina
Wailuku
Kahului
Pa'ia
Ha'iku
Keanae
Makawao
Pukalani
Property Location
Olowalu
Kihei
Keokea
Hana
Kipahulu
Makena

This map is for informational purposes only and subject to change based on future research and findings.

Figure 39: MIP Context and Character Map

Character & Context Map

Island of Maui

Background Map

For Informational Purposes Only

Legend

- Primary Road
- Na Ala Hele or Other Trail
- Stream
- Wetland, Pond or Reservoir
- Waterfall
- Registered Historic Site
- Registered Historic Parcel
- Parks

Scenic Corridor
- Exceptional
- High
- Medium

Boating Facility
- Boat Launch Ramp
- Small Boat Harbor

Aquatic Activity
- Ocean Recreation
- Board Surfing
- Body Surfing
- Canoe Paddling
- Snorkling/Diving

Miles 0 1 2 3 4 5 6

This is not a zoning map. Please contact the Planning Department for Zoning confirmation.

Prepared by:
Long Range Planning Division
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Map I-1

Chapter 3, Heritage Resources, of the MIP contains policies that discourage sprawl and the merging of the island's small towns. MIP policies also protect views of Haleakalā, the West Maui Mountains, the Pacific Ocean and other scenic resources. As such, design strategies are needed to mitigate the impact of the WCT on visual resources from the Honoapi'ilani Highway fronting the project site. The following documents scenic resource impacts and describes proposed urban design strategies to help mitigate these impacts.

- ***Sprawl.*** The WCTs urban and rural development will have approximately 4,700 linear feet of frontage along the Honoapi'ilani Highway. The proposed development pattern will produce a significant change from the largely undeveloped and open space views that currently exist along what will become the frontage of the project. It is unavoidable that the current open space views of sugarcane will be impacted by the development. However, the following urban design and landscape architectural treatments will be implemented to help reduce the appearance of sprawl like conditions and to create an aesthetically pleasing sense of place fronting the project site:
    - ***Large Setbacks along the Highway.*** Setbacks of at least 60 feet, and in some areas significantly more than 60-feet, will be utilized along each side of the Honoapi'ilani Highway to separate the development from the public right-of-way.
    - ***Landscape Planting within the Right*-of-Way**. Within the setbacks, the planting of large canopy Monkey Pod trees, tropical shrubs and ground covers will be maintained to create a sense of separation and definition between the urban development and the highway and to create a green canopy enclosure and greenway as a passage through the town.
    - ***Separated Pedestrian and Bicycle Facilities***. An approximate 10-feet wide shared pedestrian and bicycle track, separated from the highway, will meander along the highway frontage. The shared use path will promote non-motorized transportation, while producing more opportunities for the public to experience the pleasant scenery along the highway.

- ***Haleakalā and West Maui Mountains from Honoapi'ilani Highway***. From Honoapi'ilani Highway, the elevation of the project site rises rather gradually, at a 3% to 6% slope,

from about 325-feet above msl to about 550-feet above mls where the Waikapū Ditch traverses north to south across the property. From the Waikapū Ditch the slopes increase to between 10% and 15% as the elevation increases to the foot of the West Maui Mountains. The foot of the West Maui Mountains is at an elevation of approximately 1,250 feet at the upper reaches of the WCT property and is about 6,800 feet from the highway.

In order to mitigate the obstruction of views from the highway to the West Maui Mountains and Haleakalā, buildings will be setback at least 75-feet from the highway and building heights will be limited to a maximum of 30-feet along the highway frontage. Building placement and areas of separation will also help to create view corridors between the highway and the mountains.

Within the project, roadways are purposefully aligned, where practicable, to capture mauka and makai view corridors. This opportunity exists at each entrance into the project site and along these roads as they travel east to west. In addition, views of the West Maui Mountains, Haleakalā and the Pacific Ocean will also be preserved in various locations from public spaces within the WCT, including the Village Green, the Waikapū River Park, Waihe'e Ditch Greenway and the Waikapū Station Greenway.

- ***Open Space Resources***. The project will impact views of agricultural lands on each side of the Honoapi'ilani Highway fronting the development. While these views are not unique within Central Maui, they do enhance Maui's beauty and are an important visual resource. In order to mitigate this impact, approximately 800 acres of agricultural land will be preserved in perpetuity as an open space buffer and permanent separation between Waikapū Town and Mā'alaea. Along the section of the highway where agricultural land is to be preserved, largely unobstructed views of Haleakalā, the West Maui Mountains and partial views of the Pacific Ocean exist.

Within the project site, the WCT will transform the current character of the MTP from a visitor oriented attraction to a park-like village center, with its existing lagoon, gardens, open spaces, shops, and restaurant coming together to create a new sense of place. While the existing agricultural and open space ambiance of the lands abutting the MTP will become an urban and

rural settlement pattern, the WCT will maintain a rural and agricultural ambiance at its boundaries because of the preservation of agricultural lands and incorporation of agricultural supporting activities, such as a farmers market, within the project site.

From an urban design perspective, the proposed project will complement the unique country-town architectural character that exists in Waikapū, Wailuku, Pāʻia, and Makawao. WCT design guidelines are being developed to control the density, architectural design, and variation of all buildings in the WCT to help preserve scenic resources and the aesthetic character of the development. Goals of the design guidelines will be to preserve views and maintain the aesthetic character of the community. A defining quality of the urban design character of the development will be to create architecturally pleasing streets with landscape planting that frames the travel ways and provides scale around architectural elements. As part of the ~~DEIS~~ FEIS, a visual impact assessment was conducted to determine how views might be impacted along Honoapi'ilani Highway, fronting the project site, following the Project's build-out. Figure No. 40 ~~35~~, A-E is a simulation of before project and after project views along Honoapi'ilani Highway.

1. ***Before***. Looking in a south-easterly direction towards sugar land with Haleakala in the background.

1. ***After***. Looking in a south-easterly direction over the makai development with Haleakala in the background and separated pedestrian and bicycle path in the foreground.

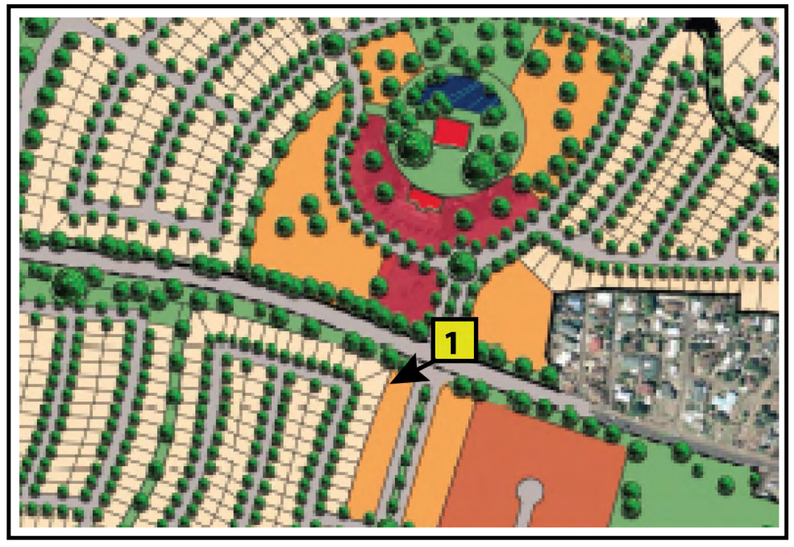

Figure 40, A
Visual Simulation of Pre- and Post Project Views

WAIKAPŪ COUNTRY TOWN

HAWAII LAND DESIGN

PLANNING CONSULTANTS HAWAII, LLC

2. ***Before***. Looking in a south-easterly direction towards sugar land with Haleakala in the background.

2. ***After***. Looking in a south-easterly direction over the makai development with canopy trees in the background and separated pedestrian and bicycle path in the foreground.

Figure 40B:
Visual Simulation of Pre- and Post Project Views

WAIKAPŪ COUNTRY TOWN

HAWAII LAND DESIGN

PLANNING CONSULTANTS HAWAII, LLC

3. ***Before***. Looking in a north-westerly direction with the West-Maui Mountains in the background and the MTP grounds in the foreground.

3. ***After***. Looking in a north-westerly direction through the project with the West-Maui Mountains in the background.

Figure 40C:
Visual Simulation of Pre- and Post Project Views

WAIKAPŪ COUNTRY TOWN

HAWAII LAND DESIGN

PLANNING CONSULTANTS HAWAII, LLC

4. ***Before***. Looking in a south-westerly direction through the MTP with the West Maui Mountains in the background.

4. ***After***. Looking in a south-westerly direction through the project with the West Maui Mountains in the background and the separated pedestrian and bicycle path in the foreground.

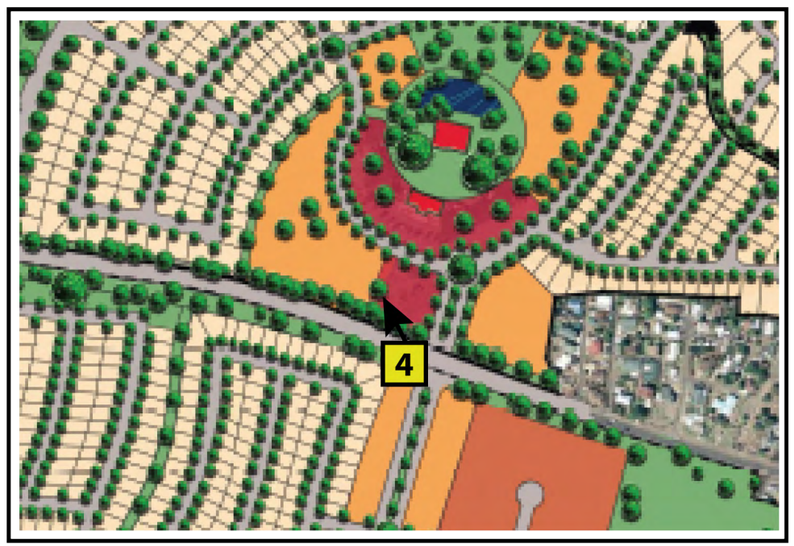

Figure 40 D:
Visual Simulation of Pre- and Post Project Views

WAIKAPŪ COUNTRY TOWN

HAWAII LAND DESIGN
PLANNING CONSULTANTS HAWAII, LLC

5. ***Before***. Looking in a westerly direction through the MTPs agricultural fields with the with the West Maui Mountains in the background.

5. ***After***. Looking in a westerly direction through the project with the West Maui Mountains in the background and the separated pedestrian and bicycle path in the foreground.

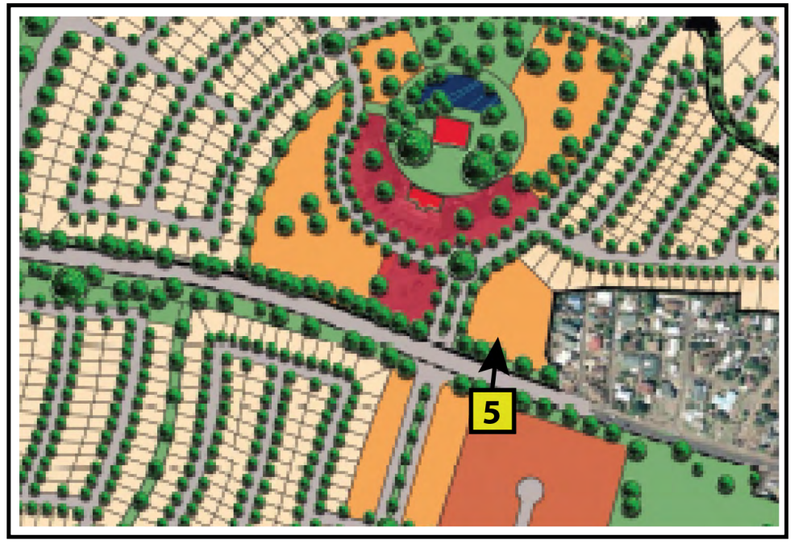

Figure 40 E:
Visual Simulation of Pre- and Post Project Views

WAIKAPŪ COUNTRY TOWN

HAWAII LAND DESIGN
PLANNING CONSULTANTS HAWAII, LLC

7. Agricultural Resources

Existing Conditions. In July 2013 Planning Consultants Hawai'i, LLC prepared an Agricultural Impact Assessment (AIA) to assess the long-term impact of the project on the State's and County's agricultural industries (**See:** Appendix G, "Agricultural Impact Assessment").

The scope of the study included the following tasks:

- Assessment of the current status of Hawai'i's agricultural industry;
- Assessment of the current availability of agricultural lands;
- Analysis of existing agronomic conditions within the project site;
- Description of the recent agricultural history of the property;
- Assessment of the impact of the project on current agricultural operations; and
- Analysis of the project's consistency with State and County agricultural policies.

The project area encompasses approximately 14 acres of State Urban District land and 1,562 acres of State Agricultural District land (**See**: Figure No. 5, "State Land Use Designation"). The existing MTP retail shops, restaurant, convention hall, tropical gardens and lagoon are on the urban designated land. In order to implement the Master Plan, approximately 485 acres will be re-designated from the State Agricultural District to the State Urban and Rural Districts.

Current Status of Hawai'i's Agricultural Industry

While agriculture, predominantly sugar and pineapple, dominated Hawai'i's economy from the late 1800s through the 1950s, its overall significance has declined dramatically since the advent of mass market tourism. In 1927, sugar alone created 56,600 jobs throughout the State, whereas in 2011 the entire agricultural industry employed just 6,900 workers. [xi] In 2011, agriculture employed 1,600 Maui County workers, which was 2.4% of the 67,200 wage and salary jobs in the County.[xii]

Hawai'i farmers face stiff competition in local, national, and international markets. In the Hawai'i market, off-shore suppliers dominate the market for most fresh fruits, vegetables, dairy, meat, and poultry products. It has been estimated that 85% of all food consumed in Hawai'i statewide is imported.