

DRAFT ENVIRONMENTAL ASSESSMENT

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**HELICOPTER LANDING AREA**

*Koula Valley, Hanapepe, Kauai*

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Prepared for

**Island Helicopters Kauai, Inc.**  
PO Box 831  
Lihue, Kauai 96766

April 2008

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*Koula Valley, Hanapepe, Kauai*

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Prepared in Partial Fulfillment of the Requirements  
of Chapter 343, Hawaii Revised Statutes and  
Title 11, Chapter 200, Hawaii Administrative rules

Prepared for

**Island Helicopters Kauai, Inc.**  
PO Box 831  
Lihue, Kauai 96766

Prepared by

**Gerald Park Urban Planner**  
1221 Kapiolani Boulevard, Suite 211  
Honolulu, Hawaii 96814

April 2008



## PROJECT PROFILE

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Proposed Action: Helicopter Landing Area  
Koula Valley, Hanapepe, Kauai, Hawaii

Applicant: Island Helicopters Kauai, Inc.  
PO Box 831  
Lihue, Kauai 96766

Approving Agency: Planning Commission of the County of Kauai  
4444 Rice Street, Suite 473  
Lihue, Kauai 96766

Need for Assessment: Section 343-5 (a)(8)(A)  
Propose a helicopter landing area in the  
Agricultural district which may affect the  
Conservation district

Tax Map Key: (4<sup>th</sup>) 1-8-001: por. 01  
Land Area: 11,774.60 acres  
Helicopter Landing Area: Approximately 2,000 square feet

Land Owner: Robinson Family Partners  
PO Box 88  
Makaweli, Kauai 96769

Gay & Robinson, Inc. (Lessee)  
PO Box 88  
Makaweli, Kauai 96769

Existing Use: Open Space

State Land Use Designation: Agricultural  
Kauai General Plan: Open  
Zoning: No Zoning Designation  
Special Management Area: Outside Special Management Area

Anticipated Determination: Finding of No Significant Impact

Contact Person: Walton D.Y. Hong  
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3135-A Akahi Street  
Lihue, Kauai 96766

Telephone: 245-4757

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Island Helicopters Kauai, Inc., a locally owned and Kauai-based helicopter tour operator, proposes to establish a helicopter landing area in Koula Valley near Manawaiopuna Falls at Hanapepe, District of Waimea, County of Kauai, State of Hawai'i. The property bears Tax Map Key 1-8-001: por. 001 encompassing an area of 11,774.6 acres. The proposed landing area will occupy approximately 2,000 square feet of the aforementioned parcel on the floor of Koula Valley. A Location Map and Tax map are shown in Figures 1 and 2.

Koula Valley is owned by Robinson Family Partners who is willing to extend landing rights to Island Helicopters Kauai, Inc. (hereafter the "Applicant") provided they can secure the required permits and approvals for a helicopter landing area.

#### **A. Technical Characteristics**

Applicant operates helicopter tours of Kauai from its place of business at Lihue Airport. Approximately 8 to 16 helicopter tours are flown per day, weather permitting. As part of its tour package, Applicant flies to and above Manawaiopuna Falls where passengers can view and photograph the falls from above. The aircraft does not land and after 1 to 2 minutes, it departs for the continuation of the tour.

Applicant is seeking to have passengers experience Manawaiopuna Falls close up in addition to viewing it from the air. This would be achieved by having a site for its helicopters to land on the floor of Koula Valley. The proposed landing area is an approximately 2,000 square feet area located on top of the mauka bank of Haulili Stream, a tributary to Koula Stream (See Figure 3). The improvement plan is to remove or cut back trees (primarily strawberry guava and kukui) and to trim overgrown brush and grass at the landing area. No structures will be constructed or placed thereon. The area is relatively flat and grading is not required as the current condition of the site can accommodate the proposed improvements. Applicant will maintain the landing area as needed.

At the landing area, the helicopter would land and shut down. No more than six passengers can be accommodated on each tour. Passengers would disembark and walk a short distance to Manawaiopuna Falls with the pilot guiding them along an existing but generally unimproved trail. The trail is about 300 feet long and parallels a section of the Koula Ditch. No improvements to the trail are proposed. The irrigation ditch and trail are maintained by the land owner.

Visitors will be able to see and experience the falls close up, take photographs, and after a few minutes walk back to the helicopter, board the aircraft, depart, and continue with the tour. The entire on-ground experience is estimated to take 20 to 25 minutes. Passengers will also be able to see the remnants of the Koula Ditch which was built as the Hanapepe Ditch in 1889 to supply irrigation water to the sugarcane fields on the flat lands at Hanapepe. No swimming will be permitted at the falls and in adjoining streams. Passengers will not be allowed to carry food to the falls. On-site portable toilets, tables, and benches will not be provided for passenger convenience at either the landing area or the falls.



Applicant anticipates that the number of their daily helicopter tours to Manawaiopuna Falls will be significantly reduced if they are allowed to land at Manawaiopuna Falls as each tour will take longer to complete.

#### **B. Economic Characteristics**

The initial cost of tree cutting and grass trimming is estimated at less than \$500.00. Applicant will maintain the landing area as needed. Maintenance costs, primarily grass trimming, are estimated at \$500 annually. Grass trimmings will be collected, bagged, and transported to Applicant's place of business for disposal.

The landing area is part of a larger lot owned by Robinson Family Partners. The owners and lessees Gay & Robinson, Inc. are willing to grant exclusive landing right to use the land as a landing area to Applicant subject to receiving all necessary permits and approvals. The granting of exclusive rights will assure that other helicopter companies will not be allowed to undertake similar activities in the project area.

#### **C. Social Characteristics**

Koula Valley is uninhabited in the vicinity of the landing area. The Valley is privately owned and closed to public access and public recreational use.



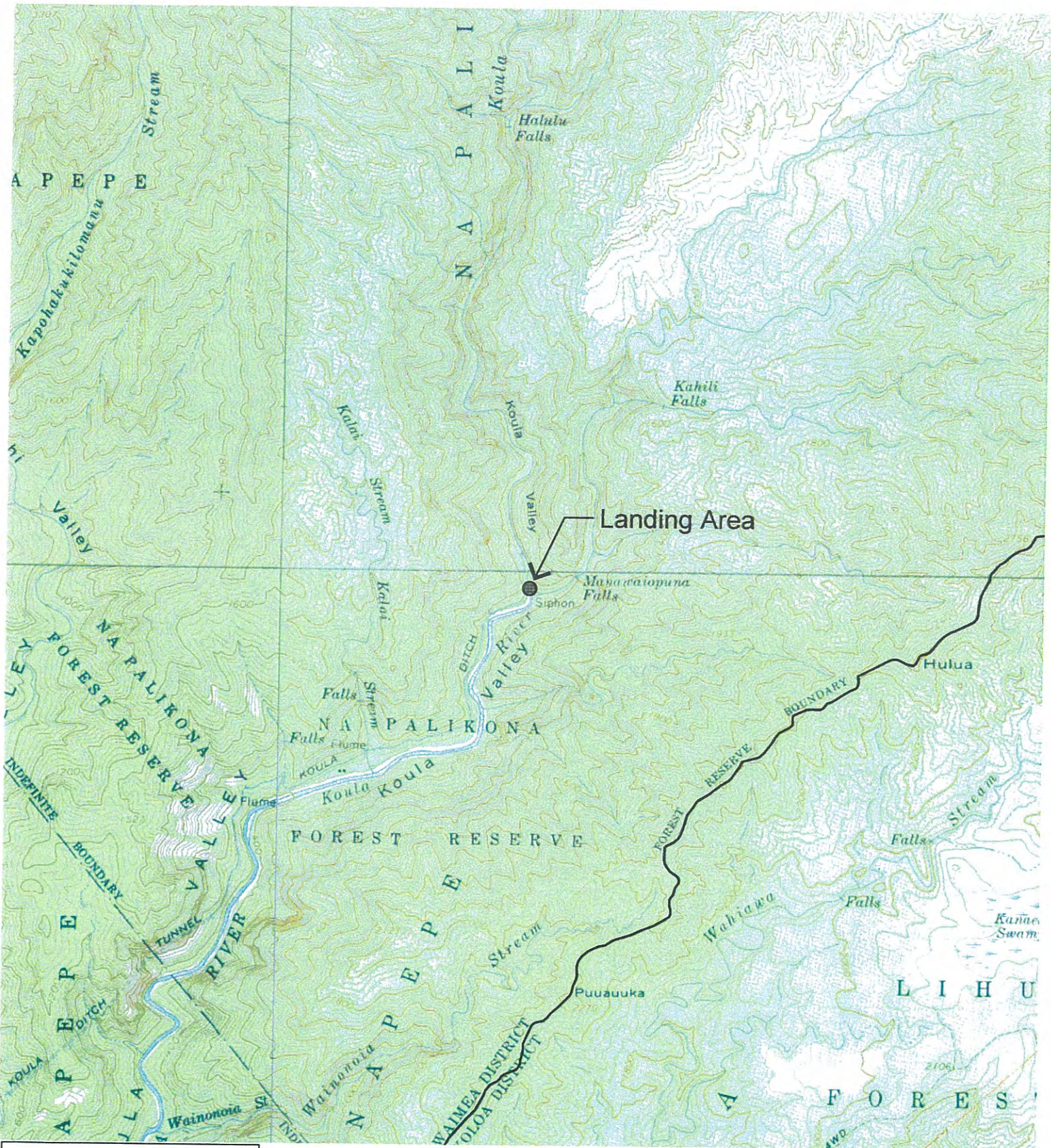
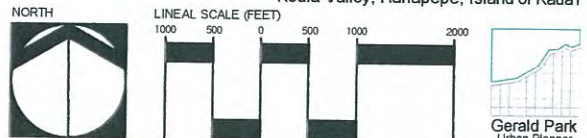


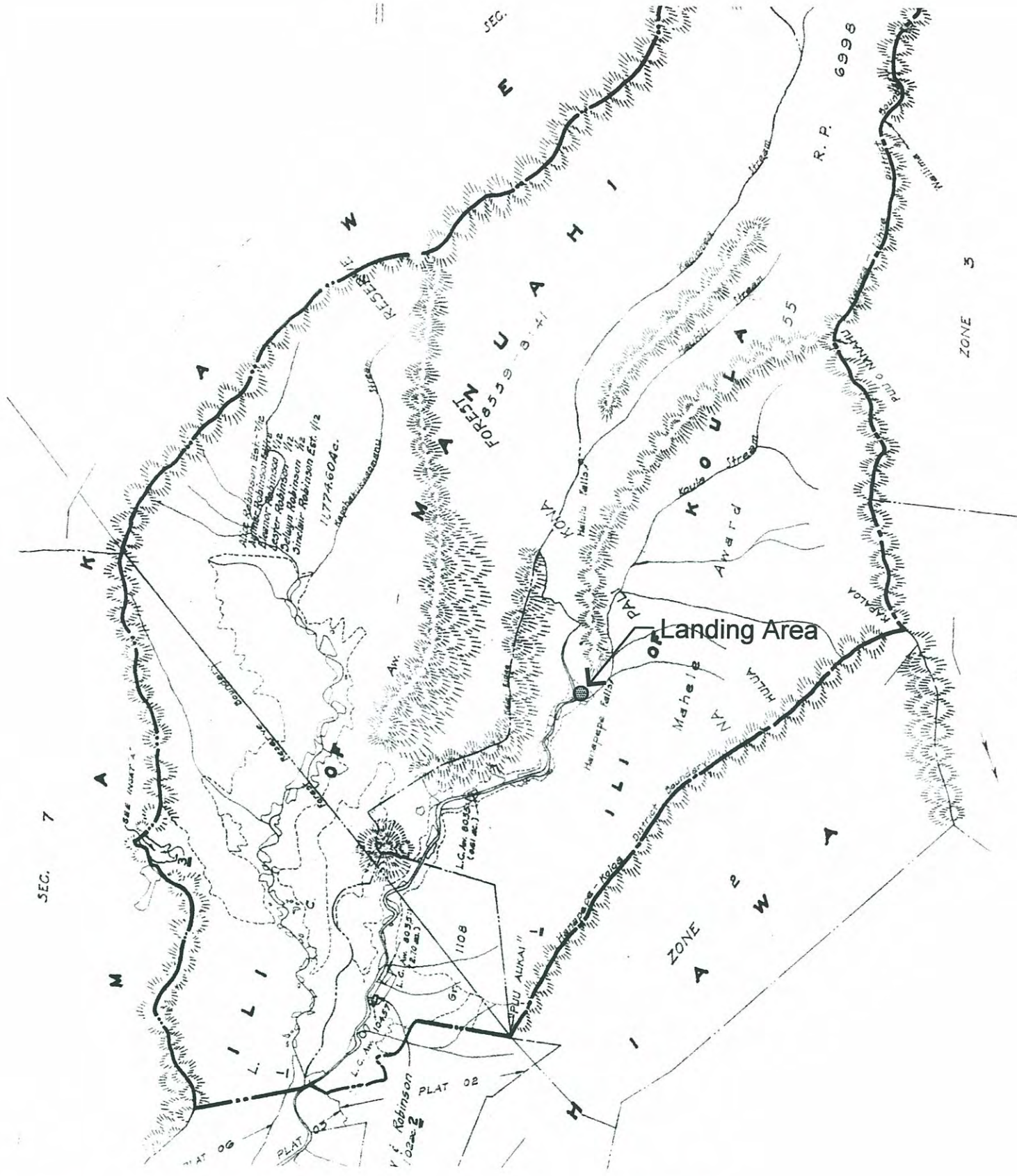
Figure 1  
Location Map  
Helicopter Landing Area

Koula Valley, Hanapepe, Island of Kauai



Gerald Park  
Urban Planner  
March 2008

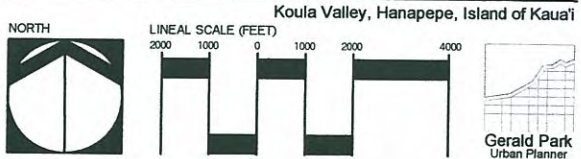




TAXATION MAPS BUREAU		
TERRITORY OF HAWAII		
<b>TAX MAP</b>		
FOURTH		DIVISION
ZONE	SEC.	PLAT
1	8	01
CONTAINING		PARCELS

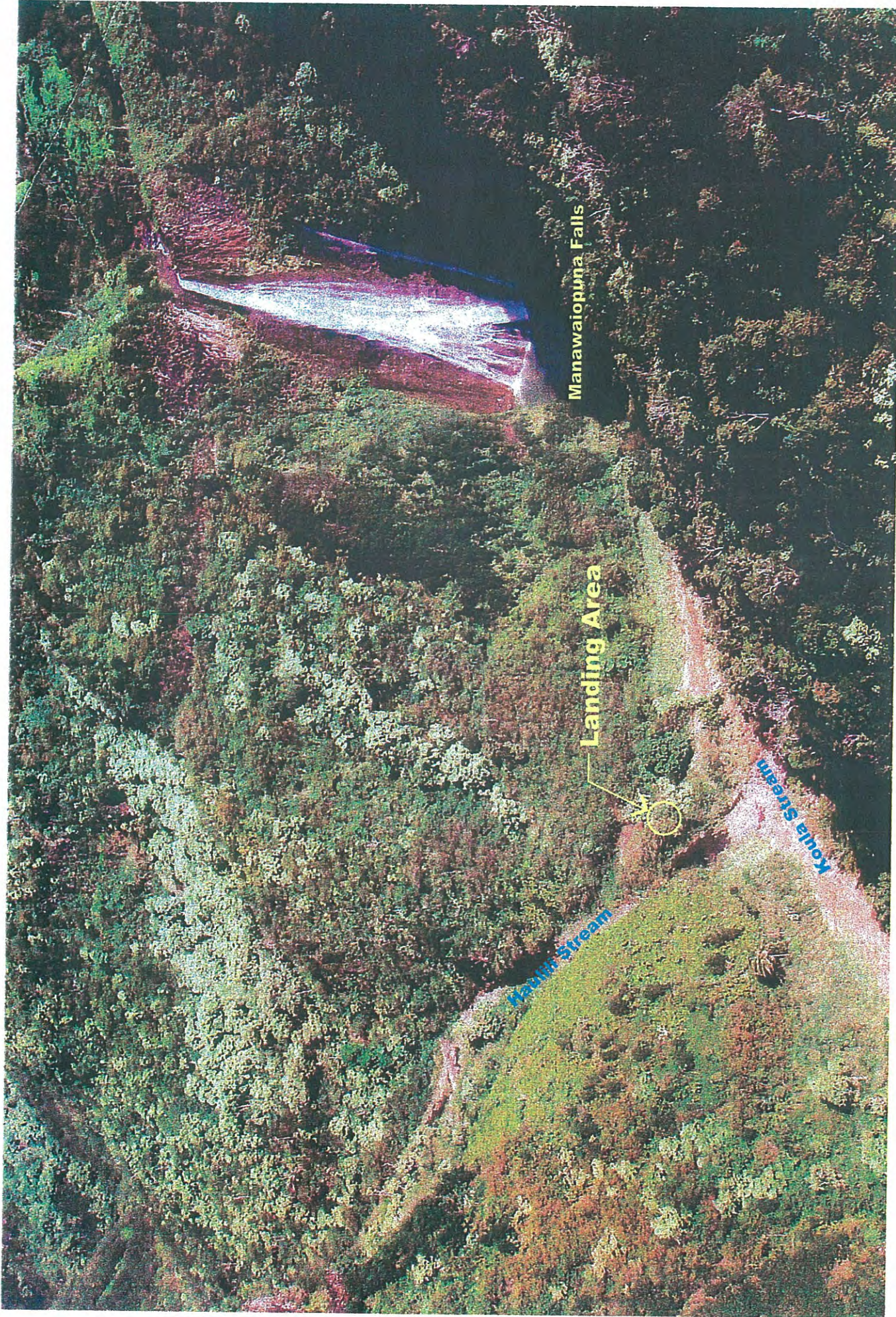
Source: County of Kauai

Figure 2  
Tax Map  
Helicopter Landing Area



Gerald Park  
Urban Planner  
March 2008





Source: Client Photograph

Figure 3  
Landing Area Map  
**Helicopter Landing Area**  
Koula Valley, Hanalei, Island of Kauai





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### A. Existing Use and Improvements

The landing site is located on top of the *mauka* bank adjacent to and overlooking Haulili Stream, a tributary to Koula Stream, on the floor of Koula Valley. The tributary is about 100 to 120 yards to the south of Manawaiopuna Falls.

The landing site is relatively flat and covered with low grass and shrubs. Strawberry guava grows along the top of the river bank and branching extends over the stream and into the landing area. Kukui and one mango tree grows along the upland edge(s) of the proposed landing area (See Photographs 1 and 2). A concrete headwall or abutment about 12 to 15 feet long and 8 feet high buttresses the river bank at the landing area (See Photograph 3). An abutment of similar dimensions is located directly across on the opposite bank.

The top of a concrete slab (approximately 4' W X 15' L) is visible at the landing area. The slab extends between an irrigation flume to the north towards Haulili Stream on the south, a distance of about 20 feet. The slab is the top of an irrigation siphon (or its concrete jacket) crossing under Haulili Stream and in the approximate center of the landing area.

From the landing area, the trail crosses a section of a lined flume and parallels an irrigation ditch to the falls, a walking distance of about 300 lineal feet. The trail to the falls is narrow in some sections (2' to 3') and wider in others (10' to 12'). The width is narrow where vegetation is the tallest and wide where vegetation is less than one foot in height (See Photograph 4). The trail is on a tapering finger of land between the irrigation ditch and Koula Stream. The taper is about 50 to 60 wide near the irrigation flume and about 10 feet wide at the plunge pool.

Manawaiopuna Falls cascades down a near vertical face estimated to be between 325 to 360 feet in height (Figure 5). Tumbling water collects in a plunge pool at the base of the falls. The depth of the pool is not known. A low, cement rubble masonry (crm) dam or weir (about 3-4 foot in height) extends across the stream (See Photograph 6). Pooling water flows over the dam into Koula Stream. A concrete helipad was built on top of the dam for the movie "Jurassic Park" and has since been destroyed by Hurricane Iniki.

On the west side of the plunge pool, water is diverted into an unlined irrigation ditch (Koula Ditch) and makes its way to a flume near the landing area. At the flume, the flow branches toward Koula Stream or enters the irrigation siphon. The hiking trail parallels the irrigation ditch from the flume to the falls.

The property owner does not allow helicopter tour operators to land at or near the base of the falls and the property is closed to the public. An unimproved dirt road leads to the falls from Hanapepe through Hanapepe and Koula Valleys with numerous stream crossings. The road crosses private property and access is not allowed to the public except by permission of the owner.

The owner currently uses the property for grazing horses and cattle.





Photograph 1.



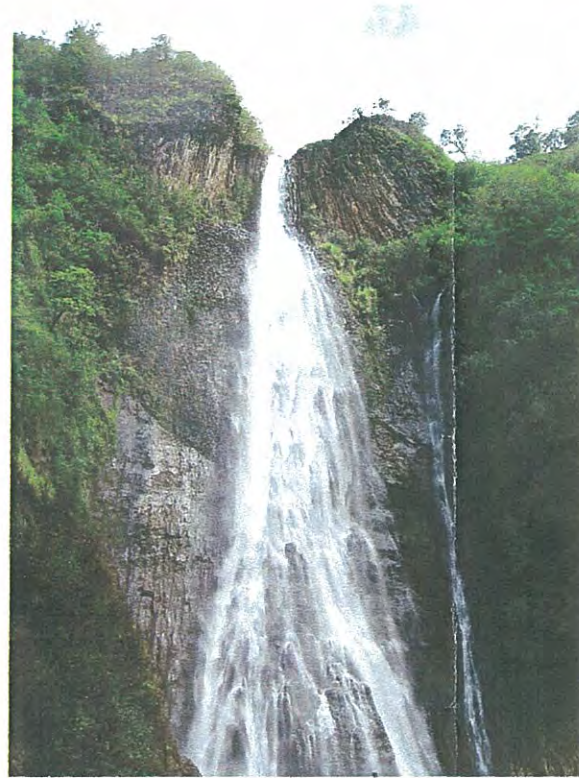
Photograph 4.



Photograph 6.



Photograph 2.



Photograph 5.

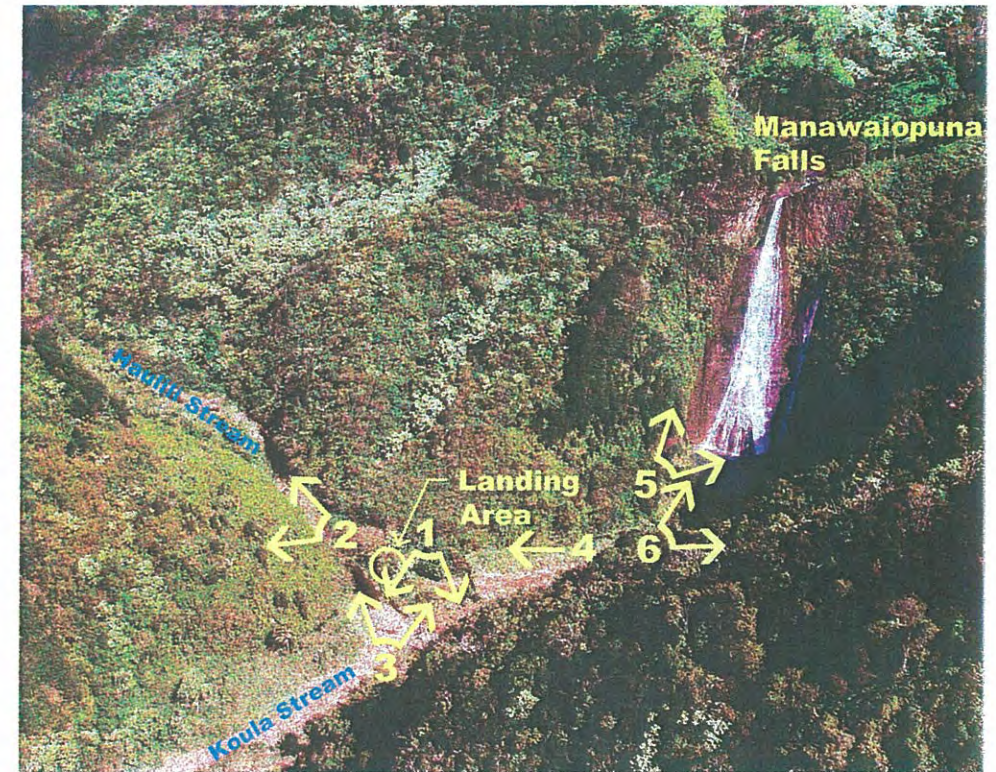


Photo Key Map



Photograph 3.

Photograph 1. Eastern Edge of Landing Area.

Photograph 2. Western Edge of Landing Area.

Photograph 3. Concrete Abutment on South Side of Landing Area.

Photograph 4. View of Trail Looking South.

Photograph 5. Manawaiopuna Falls. Note Geologic Rock Formation.

Photograph 6. Dam Across Plunge Pool.

## Site Photographs Helicopter Landing Area

Koula Valley, Hanapepe, Island of Kaua'i



## B. Environmental Conditions

The island of Kauai was formed from a single great shield volcano, deeply eroded, and partly veneered with much later volcanics. At the top of the shield was a caldera 10 to 12 miles across---the largest in the Hawaiian Islands. Lavas erupted in the caldera gradually filled it, except on the higher northwestern side, and eventually spilled over its low southern rim into the graben (the Makaweli graben on the southern flank of the shield), down which they flowed into the sea (McDonald and Abbot, 1970). McDonald's geologic map of Kauai depicts the **geology** of the project area as being formed of rocks of the Waimea Canyon Volcanic series and the portion of them that built the main mass of the shield outside the caldera are called the Napali formation. At Manawaiopuna Falls, the valley sides appear to consist of a dense basalt rock base with a vertically stratified layer of rock on top (See Photograph 5). Although the geological formations have not been identified in this assessment, it appears that the lower layer is of the Waimea Canyon Volcanic Series and the upper layer the Napali formation.

Ground **elevation** on the valley floor at the landing area is approximately 600 to 620 feet above mean sea level. The sides of Koula Valley rise steeply on both sides of the walking trail to the base of Manawaiopuna Falls to an estimated height of just under 1,000 feet above mean sea level at the top of the falls.

The Soil Conservation Soil Map (1972) identifies one **soil type**---rough mountainous land (rRT) for the area. This soil is found in mountainous areas on all islands. It is characterized as very steep land broken by numerous intermittent drainage channels. The land surface is dominated by deep V-shaped valleys that have extremely steep side slopes and narrow ridges between the valleys. In most places the local relief exceeds 500 feet.

Because of its mountainous and remote location, this area of Koula Valley is not shown on **flood** insurance rate maps; thus there is no flood hazard designation.

Jeffrey Pantaleo Consultants, LLC, archaeological consultants, conducted an **archaeological assessment** of the landing area and trail to Manawaiopuna Falls (2005). The survey findings are summarized thusly: "No significant surface cultural remains were encountered in the project area. The results of the current investigation produced no evidence for sedentary cultural activities during the prehistoric and early historic periods in the subject project area. The project area had undergone extensive ground disturbances from construction and maintenance of the Koula Ditch."

It was further indicated that the proposed landing area "is located on a previously cleared area for an access road probably associated with construction of the Koula Ditch (Ibid)".

A **cultural** impact assessment was prepared in conjunction with the archaeological assessment. The assessment (Orr, 2005) summarizes the occurrence of cultural activities and resources in the project area in the context of western history of historical events in Hawaii, genealogies and pre-historic events, and through interviews with knowledgeable informants. Sections from the assessment are summarized below.

Mo'olelo, oli, mele. Legends, chants, and songs are associated with Koula, Hanapepe, and /or Kona, Kauai.



Wahi pana. Storied places described by genealogies, *mo'olelo*, *oli*, and *mele* for Koula, Hanapepe and/or Kona Kauai are presented.

Heiau. No known *heiau* are associated with the project area.

Ancient Land and Water Resources and Use. The Kona or Waimea district, of which the project area was a part, was considered the largest settlement on Kauai during the ancient period. Wetland taro cultivation was taken place in most of the valleys that were associated with fresh flowing water. While the immediate project area has no evidence of ancient cultivation or habitation, there was known cultivation in areas south of the project area.

Historic Land and Water Resources and Use. The devastating sandalwood era was winding down, but not before heavily modifying the landscape by denuding the upper forest and *kula* lands. According to the testimonies, much of the *kula* lands were converted to pasture; this was followed by mono-crop agricultural practices---the cultivation of sugar cane, which also radically modified the natural landscape with infrastructural roads, bridges, ditches, tunnels, plowing and rock crushing. This was the land history of many places in the Kona or Waimea district, and vicinity of the project lands.

Cultural Resources. Other than *kukui* nuts and ferns adjacent to the project area, there are no cultural resources located in the project lands in the vicinity of Manawaiopuna Falls. However, there are cultural resources in the lower gulches/valleys, which [are] quite a ways south of the project area.

Cultural Practices. It is not known if people of West Kauai specifically use the *kukui* nuts from trees in Ko'ula area. However, the practice of gathering *kukui* nuts continues today for making the condiment *inamona*, for medicinal purposes, for lei, and for *kukui* nut oil, which has several uses including *lomilomi* (Hawaiian massage). Because the project area is not readily accessible it is unlikely that resources in the immediate area would be utilized by cultural practitioners---there are many areas much more accessible.

Hunting feral pigs is a cultural practice that continues today, both for sustenance and sport. This practice is allowed by the owners to employees but not in the vicinity of the project site.

Historic Resources. With the exception of a ditch and berm, which is periodically maintained by the land owner, there are no historic resources in the proposed Manawaiopuna Falls project area. The remnants of the *Jurassic Park* movie are not old enough to be considered historic in the usual sense, although it may be considered "significant" by some movie buffs.

Upland **flora** consists of a mixture of hau, guava, *kukui*, mountain apple, coconut, mango, strawberry guava and assorted grasses (Bruner, 2006; Orr, 2005). *Ohi'a-lehua* is present along the stream and the valley sides. No rare or special trees occur on the subject property. No species listed as protected, threatened or endangered (DLNR, 1998; Federal Register, 1999, 2002) was observed.



No **native forest birds** were observed during a faunal survey of the landing area. Given the location of the property, and available habitats, few native forest birds would be expected. Apapane (*Himatione sanguinea*) and Kauai Amakihi (*Hemignathus kauaiensis*) may on occasion forage in the Ohia'a-lehua and flowering Mountain Apple trees (Bruner, 2006). The *pueo* or Hawaiian owl (*Asio flammeus sanwicensis*) forages in a wide variety of habitats, including river valleys.

No **native water birds, seabirds, or migratory shorebirds** were encountered (Ibid). Three alien (Introduced) species were observed: Japanese white-eye (*Zosterops japonicus*), Hwamei (Chinese Thrush or Melodius Laughing Thrush) (*Garrulax camorus*), and a White-rumped Shama (*Copsychus malabaricus*). The endangered Hawaiian hoary bat is fairly common on Kauai but none were observed during the faunal survey.

The only evidence of **feral mammal** activity was tracks and rooted up areas left by pigs (*Sus scrofa*). Rats (*Rattus spp.*), mice (*Mus musculus*), and cats (*Felis catus*) also occur in the valley.

Due to its remote location and undisturbed condition, **noise** in the vicinity of the landing area is predominantly sounds of nature related to birds, wildlife, the wind and rustling trees, and flowing water from Koula Stream. At the landing area, the sound of falling water from Manawaiopuna Falls is audible in the distance. At the falls, the falls itself "masks" out other ambient noise sources. Noise can also be heard from helicopters flying overhead on their aerial viewing of the falls.

No sources of **air pollution** are known to exist or operate in Koula Valley near the landing area. Air quality, thus, is considered to be very good.

### **C. Land Use Controls**

State and County **land use controls** governing the use of the property are listed below.

- State Land Use Designation: Agricultural
- Kauai General Plan: Open
- Zoning: No Zoning Designation
- Special Management Area: Outside Special Management Area

The site of the landing area is designated Agricultural by the State Land Use Commission (See Figure 4). A portion of the trail leading to Manawaiopuna Falls and the falls is located in the State Conservation district (Protective Subzone).

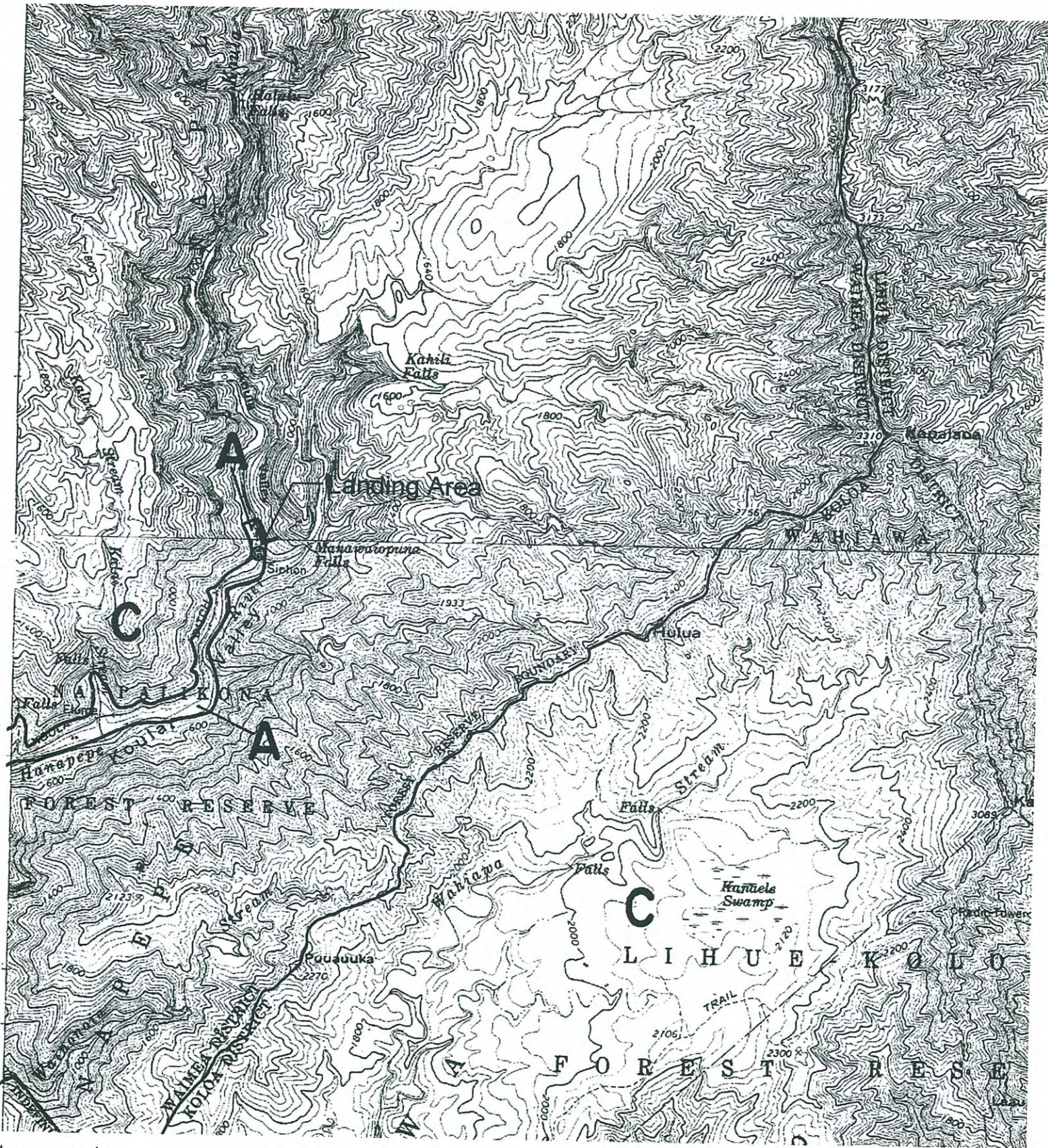
The Office of Conservation and Coastal Lands ("OCCL"), the regulatory branch of the Department of Land and Natural Resources ("DLNR") has determined that a Conservation District Use Permit is not required for the proposed action because they did not consider the Conservation lands as being affected by the proposed activity (See Appendix A, Item 1).

The Kauai General Plan (2000) identifies land generally surrounding the communities of Hanapepe, Eleele, and Kalaheo as Open Space, Parks, Agriculture, Conservation. Mauka of this designation, the General Plan considers the land, to include Koula Valley (which is not identified) Important Land Form. This designated area includes mountains, stream valleys and gulches, bluffs and other small coastal features (General Plan, 2000).

**D. Public Facilities**

There are no public facilities in the vicinity of Manawaiopuna Falls.



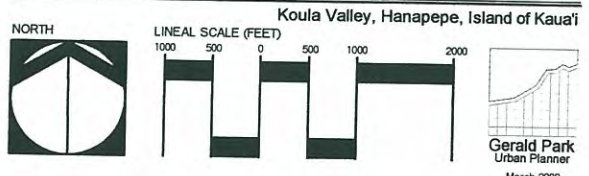


Legend

- U Urban
- R Rural
- A Agriculture
- C Conservation

Source: State of Hawaii, Land Use Commission, Waialeale Quad(K-7) & Koloa Quad (K-8)

Figure 4  
State Land Use  
Helicopter Landing Area





## SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS

3

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The scope of the project was discussed with the Applicant. State and County agencies were contacted for information relative to their areas of expertise. Time was spent in the field noting site conditions and conditions in the vicinity of the landing area. The consultations, studies prepared by others, and field investigation helped to identify existing conditions and features that could affect or be affected by the project. These conditions include:

- There are no rare, threatened, or endangered flora or fauna within the project limits;
- There are no recorded archaeological resources within the project limits;
- There are no cultural resources associated with the project limits;
- There is no flood hazard rating for the area;
- Cattle and horses graze the floor of Koula Valley;
- Helicopter tour companies currently fly over Manawaiopuna Falls but do not land;
- Public access into Koula Valley is not allowed without permission of the landowner;
- There are no public facilities or recreation areas in Koula Valley and Manawaiopuna Falls; and
- The Federal Aviation Administration (“FAA”) has approved the site as a helicopter landing area.

### A. Short-term Impacts

The proposed improvements should not adversely affect ambient **air quality**. Grading and excavation are not proposed thus fugitive dust should not be generated. Because of the limited, small scale clearing and cleaning activities and the remote location of the landing area, dust control measures are not necessary.

Construction **noise** can be expected but will be limited in duration. More than likely chain saws, grass trimmers, and a lawn mower is all that is needed to clear the landing area of unruly vegetation. Clearing activities should take less than one day. There is no noise sensitive area nearby that would be adversely affected by the sounds of power equipment. Sounds of tumbling water from Manawaiopuna Falls and flowing water in the irrigation flume will mask equipment noise. These “water related” noise sources are the loudest in the area. The equipment to be used in preparing the landing area is no different from equipment a homeowner would use to maintain his or her property.

The nearest residential area (Hanapepe Cliffside) to the proposed landing area is about 3 miles to the south. This distance in conjunction with the dense vegetation between the proposed landing area and the inhabited residential area should attenuate sounds. Cutting back trees and branches and mowing grass are not significant noise generating activities.

Trees will be trimmed or cut without removal of the roots wherever possible. The existing trees and remaining roots help to stabilize the soil and avoid exposing the soil which creates opportunities for **runoff and erosion**. If trees need to be removed, the disturbed area should be stabilized as soon as possible with appropriate plant material. The landing site is relatively flat, small in area, and does not require grading. If required, a Best Management



Practices (BMPS) plan for erosion control will be prepared for review and approval by the Department of Public Works.

Wild pigs frequent the area and signs of their **rooting activity** are evident. Existing and future rooted areas in the landing area and along the trail will be filled with soil and grassed for safety reasons and to minimize the occurrence of soil entering the irrigation ditch or stream.

The consulting archaeologist (Pantaleo, 2005) offered the following recommendation "Due to the absence of surface **cultural remains** in the project area, and no improvements or ground disturbing activities are planned in the helicopter landing area and along the trail, no further archaeological work is recommended. However, in the event future improvements or construction activities are planned in the area, archaeological monitoring is recommended to ensure that any subsurface cultural remains are properly documented."

Should subsurface **archaeological or cultural features** be unearthed, work in the immediate area will cease and the State Historic Preservation Division notified immediately for disposition of the finds. If burials are unearthed, the State Historic Preservation Division and the Kauai Police Department will be notified.

Adverse effects on **flora** are not anticipated. Trees, shrubs, and grasses found within the landing area are common to Hawaii and are not rare, threatened, or endangered species or candidates for that status. The observed species also grow in areas away from the landing site.

## **B. Long-term Impacts**

**Ambient air quality** may be affected by exhaust from the helicopter. Air quality at the project area is considered "very good" due to its remoteness and location away from human activity. Point sources of pollution (e.g. a power plant, residential subdivision) and non-point sources (automobiles, construction activities) are not associated with the project area. Exhaust emissions will be dispersed by the prevailing winds and the helicopter rotor blades.

Helicopter downdraft will raise **dust and loose debris** during take-offs and landings. This effect cannot be avoided at the proposed landing area. Airborne dust and debris will settle onto and outside the landing area. Removing grass trimmings from the landing area following maintenance can help to mitigate this impact.

Helicopter landings will introduce a new source of **noise** to the project area. Applicant flies the Aerospatiale Model AS350 B2 in its tour operations. This helicopter model generates noise on the order of 89.8 dB at takeoff and 91.4 on approaches. A typical takeoff will generate noise in the range identified above for approximately 1½ to 2 minutes and a like amount of time when landing. While little can be done to reduce the noise of aircraft landings and departures, the increase in ambient noise level during such times is temporary in duration and should not adversely affect wildlife resources in the area. Wildlife and birds may temporarily leave the area upon hearing noise and with the increase in human activity.

Koula Valley is privately owned and public access restricted. In general, people should not be hiking or driving on the valley floor without permission of the landowner. Since people are not allowed onto the property, there should be no acoustical impacts on humans in the vicinity of the landing area.



**Noise per se** does not generate sufficient energy or changes in air pressure to dislodge materials and it is not likely that noise from a helicopter can do so. Vibration, rather than noise can cause material displacement. Noise from a helicopter, however, does not generate sufficient energy to create sound induced vibration. The trail to the falls is near the base of a valley side not more than 50 feet away on the west. Vegetation covers much of the side. If roots are naturally detached or uprooted, falling vegetation could **dislodge rocks** and other material (or falling rocks could dislodge vegetation). This type of natural occurrence is unavoidable and difficult to mitigate. There are no written records of falling rocks or landslides in this area and no documentation evaluating the condition of the valley sides, slope, and vegetation growing thereon. Rocks dislodged naturally by water and stream flow can be seen at the base of the plunge pool and in the streambed, respectively. The landing area and trail to the falls are located away from the base of the valley sides. Any dislodged rocks should be arrested by the intervening vegetation and ditch before posing a hazard to persons on the trail and landing area. There was no presence of dislodged rocks or debris on the trail and land area.

Mist from Manawaiopuna Falls drifts onto the trail segment between the falls and the irrigation flume keeping the ground moist and vegetation green. Because of the **damp conditions**, frequent use of the trail should not foster erosion and subsequent discharge into the adjoining irrigation ditch. The trail further can be moved further away from the irrigation ditch as a mitigating measure.

Wild pigs frequent the area and their burrowing activities can result in soil being naturally discharged into the irrigation ditch and Koula Stream. In the vicinity of the landing area, Applicant will fill in areas rooted up by pigs both as a safety precaution for passengers and to minimize water quality degradation in adjacent waterways.

The landing site on the valley floor is not a **pristine environment**. Although in a remote and generally inaccessible location, the area was long ago improved for irrigation use and recently used for "on-location" filming of the movie Jurassic Park. The vegetation is not native to Hawaii and no native avifauna and wildlife are known to have established habitat in the area. Resident species identified in this assessment are primarily "alien" or introduced species.

By requiring visitors to stay only on the trail while hiking to the falls, the **native ecosystem** will not be adversely disturbed. Grass that may be trampled on the trail and landing area are not endangered or threatened species and will naturally regrow.

The possibility of **alien species** being introduced to the area should not be discounted. The introduction could be through seeds and spores unknowingly attached to passenger's footwear. If this is a significant concern, passengers should be required to clean their footwear before boarding the aircraft. A mechanical or compressed air cleaner can be setup at the waiting area adjoining Applicant's helipad at Lihue Airport for this purpose.

The introduction of alien species, however, already may be occurring. Workers who maintain the Koula Ditch travel great distances and could unknowingly pick up and deposit seeds along their way to the ditch. Alien species can also be introduced naturally--- the wind can blow seeds and spores into the valley and the same can be transported by birds and deposited in their droppings. In addition, alien species are part of the floral composition in the project area and natural self-propagation assures their continued presence.



No improvements are planned that would create **impervious surfaces** thus there should be no increase in surface runoff over existing conditions. The existing terrain at the proposed landing area slopes in the direction of Koula Stream and flat areas adjoining the stream. The proposed action will not alter this condition.

Applicant has prepared an Emergency Response Action Plan for responding to **emergencies** for tours landing at Manawaiopuna Falls (See Appendix B). Although no structures are proposed to be constructed at the landing area, storing some equipment in a cabinet for emergencies should be considered. The cabinet should be weather-proof, placed at an accessible but inconspicuous location, and painted to blend with the foliage.

The **FAA** has apprised Applicant that helicopter “approach, landing, take-off, and departure can be conducted safely” from the proposed landing site (See Appendix A, Item 2).

The proposed improvements are not anticipated to result in adverse **visual** impacts. The landing area will be visible from the air and appear as a grassed clearing ringed with trees. However, there should be no visual impact if there is no helicopter on the ground.

A helicopter on the ground will be visible from helicopters flying overhead. Due to height restrictions imposed by the Federal Aviation Administration, these overhead helicopters will be at sufficient distance away so that the visual impact of an aircraft on the ground will be minimal.

An aircraft on the ground will indicate man’s presence in the area but should not detract from the overall experience of seeing the falls from the air. Helicopter tour operators position their aircraft for optimum sightlines towards the falls for their passengers at a distance where passengers can view the totality of the falls; this focus on the falls itself from a distance significantly mitigates the intrusion into the viewplane of people at the base of the falls.

The landing area is part of a larger agricultural area used for **grazing horses and cattle**. This use will continue and should not be affected by the proposed use. The presence of the siphon and flume providing irrigation water to the lower Hanapepe Valley lands in sugar cultivation should not be affected. Other agricultural uses are not feasible because of the narrowness of the valley floor, the limited area for any agricultural activity other than grazing, and the lack of ready access for crop cultivation.

There is very little evidence today that the project area may have been part of an ancient **Hawaiian life system**, although there is still evidence that areas south of the project lands were utilized during ancient and very early historic times (Orr, 2005). Waterfalls and fresh water sources in general were very special to traditional Hawaiians and areas such as this may have been a resource area for cultural gathering practices. However, the project area is quite a distance from the nearest traditional habitation sites.

The pig (*Sus scrofa*) was brought to Hawaii by the early Polynesians. Some of them managed to escape from pens and later inter-mixed with domestic species who also managed to escape. These are known today as feral pigs. The **cultural practice** of hunting these animals continues today, both for sustenance and sport. This practice is allowed by the owners only to employees in areas away from the project site.



The lands in the project area were heavily impacted by the historic activities of the 19<sup>th</sup> and 20<sup>th</sup> centuries although limited in the area of the falls due to the narrow valley floor and steepness of the valley walls. Any cultural sites and/or resources would have been destroyed or buried by ranching and sugar cultivation activities (ditch/berm); therefore there will be no adverse impact to any **cultural resources** in the Manawaiopuna Falls project lands.



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**A. No Action**

The no action alternative will maintain the status quo of the property and preclude the occurrence of all environmental impacts---short and long-term, beneficial and adverse---described in this Assessment. The No Action alternative will also deprive people of the opportunity to view and experience the falls.

**B. Vehicular Access**

The opportunity to view Manawaiopuna Falls is limited because of its remote location. Vehicular access is possible but not feasible. An existing dirt access road extends from the town of Hanapepe to Manawaiopuna Falls. The dirt road is used by workers to service the Koula Ditch. It winds through Koula Valley and crosses the Hanapepe River and Koula Stream about seven times before reaching the falls. There are no bridges over the streams, only water crossings. Vehicles driving the dirt road would raise dust, affect ambient noise levels, contribute exhaust emissions, foster erosion, and create the need for restroom facilities en route. Direct impacts associated with water crossings can affect stream flora, fauna, and habitat, increase suspended solids, disrupt natural stream processes, impair water quality, and potentially contribute petroleum by-products to the watercourse. In total, this alternative poses a greater environmental and ecological concern than the proposed helicopter landings. The landowner will not grant permission for such an activity which also prohibits this means of accessing the falls as an alternative.



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Permits and approvals required for the project are listed below. Other permits and approvals may be required depending on final construction plans.

**County of Kauai**

**Planning Commission of the County of Kauai**

- Special Permit
- Use Permit
- Class IV Zoning Permit



## AGENCIES AND ORGANIZATIONS TO BE CONSULTED IN THE ASSESSMENT PROCESS

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### **County of Kauai**

Planning Department

### **State of Hawaii**

Department of Health

Office of Environmental Quality Control

Department of Land and Natural Resources

Division of Aquatic Resources

Division of Forestry and Wildlife

### **Others**

Robinson Family Partners

### **Pre-Assessment Consultation:**

County of Kauai Planning Department

Land Use Commission, State of Hawaii

Department of Land and Natural Resources, State of Hawaii

Federal Aviation Agency

Carl Imparato, Sierra Club of Hawaii

Maka'ala Ka'aumoana

Kodani & Associates, Inc.



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Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (§11-200-12). The relationship of the proposed project to these criteria is discussed below.

**1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;**

Archaeological and cultural surveys of the project area have not identified any resources that will be affected by the proposed action.

The Koula Ditch will continue to remain operational and unaffected by the proposed action. Proposed activities as it relates to the ditch will entail, at the most, up-close viewing and an explanation of the ditch system and how it interrelates to the irrigation system for plantation agriculture.

**2) Curtails the range of beneficial uses of the environment;**

The proposed action will not curtail the beneficial uses of the environment. Fresh water, an environmental resource from Manawaiopuna Falls and the Koula Ditch, a man-made irrigation ditch that channels water out of Koula Valley towards Hanapepe, will not be affected by the proposed action. In addition, Koula and Haulili Streams, the principal water courses in the project area will not be affected

The larger property which includes the project area is and will continue to be used for grazing horses and cattle.

**3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;**

The proposed action will not conflict with the State's long-term environmental policies, goals, and guidelines expressed in Chapter 344, HRS.

**4) Substantially affects the economic or social welfare of the community or State;**

The project will not substantially affect the economic or social welfare of the community or State.

**5) Substantially affects public health;**

Public health will not be adversely affected as the proposed activity is more than three miles from the nearest residence and of limited magnitude.

**6) Involves substantial secondary impacts, such as population changes or effects on public facilities;**



Population changes or effects on public facilities are not anticipated due to the limited scope of the project and non-involvement of public facilities.

**7) Involves a substantial degradation of environmental quality;**

Environmental quality of the project area will be affected by helicopter noise, helicopter landings and take-offs and the presence of people in the area. These effects will be minimal and temporary. A substantial degradation of environmental quality is not anticipated.

**8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;**

The project does not directly involve a commitment for a larger action. The action will be the first to allow tour helicopters to land near Manawaiopuna Falls so that passengers can view the falls close up on foot. This action could lead to possible proliferation of additional landing permits sought by other helicopter tour operators. This potential cumulative impact is probably unlikely and can be mitigated as a) the landowner has given exclusive landing rights in Koula Valley to the Applicant; b) the absence of similar inaccessible waterfalls on privately owned land reduces the likelihood that other applications for similar permits will be forthcoming; and c) regulatory requirements will require approval from state or county agencies or both.

**9) Substantially affects a rare, threatened or endangered species, or its habitat;**

There is no rare, threatened or endangered flora and fauna or habitat on the premises. Flora observed on the premises is common to the island of Kauai.

**10) Detrimentially affects air or water quality or ambient noise levels;**

The proposed use will not detrimentally affect air quality, water quality, and the acoustical environment. Ambient air quality over the proposed landing area may be temporarily affected by the increase in engine exhaust fumes, however, the effect should not be significant because of the limited number of trips. Ambient noise levels will increase as a result of the proposed activities, but the absence of any human habitation within miles of the site will mitigate any effects thereof.

**11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.**

Available information does not document that the proposed landing site is in an environmentally sensitive area.

**12) Substantially affects scenic vistas and view planes identified in county or state plans or studies, or,**

The project area is located away from public highway, scenic view planes and vistas, and will not be affected by the proposed activity. Further, the Kauai General Plan does not specifically identify Koula Valley as providing scenic vistas or view plan or part of a view plane. The valley and Manawaiopuna Falls, however, are included in a broad



resource category defined as Important Land Form. The proposed use will not affect the landform.

**13) Requires substantial energy consumption.**

A negligible increase in energy consumption is anticipated. For a helicopter, take offs and in-flight cruising consume more fuel than approach and landings. The increase, however, is not significant because of the limited number of events occurring on a daily basis.



## REFERENCES

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- Macdonal, Gordon A. and Agatin T. Abbot. 1970. *Volcanoes in the Sea*. University of Hawaii Press (since 1971 the University Press of Hawaii).
- Orr, Maria E. Ka'imipono. March 2005. Cultural Impact Study/Assessment Manawaiopuna Falls 'Ili of Ko'ula, Ahupa'a of Hanapēpē, District of Waimea, Kaua'i Island, Hawai'i
- Pantaleo, Jeffrey Consultants, LLC. April 2005. *Archaeological Assessment of the Proposed Manawaiopuna Falls Tour Helicopter Landing Area, Hanapepe Ahupua'a, Koloa District, Island of Kauai TMK 1-8-01*. Prepared for Island Helicopters, PO Box 831, Liheu, Kauai 96766.
- Park, Gerald. 2008. *Field Observation*.
- U.S. Department of Agriculture, Soil Conservation Service. August 1972. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. In Cooperation with The University of Hawaii Agricultural Experiment Station. U.S. Government Printing Office, Washington D.C.



## APPENDIX A

### CORRESPONDENCE

1. Department of Land and Natural Resources
2. Federal Aviation Agency



LINDA LINGUE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

Laura H. Thiele  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Russell Y. Tsui  
PRINT INDUSTRY  
Ken C. Kawahara  
DEPUTY DIRECTOR - WATER  
Aquatic Resources  
BOATING AND OCEAN RECREATION  
HAWAIIAN CULTURAL PRACTICES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESTORATION REFORM  
INTEGRATING  
FORESTRY AND WILDLIFE  
HAWAIIAN PRESERVATION  
KAILUAHAWI ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

Correspondence: KA-08-98

Ian Costa, Director  
Kauai County Planning Department  
4444 Rice Street  
Suite A473  
Lihue Hawaii 96766

NOV 21 2007

Dear Mr. Costa,

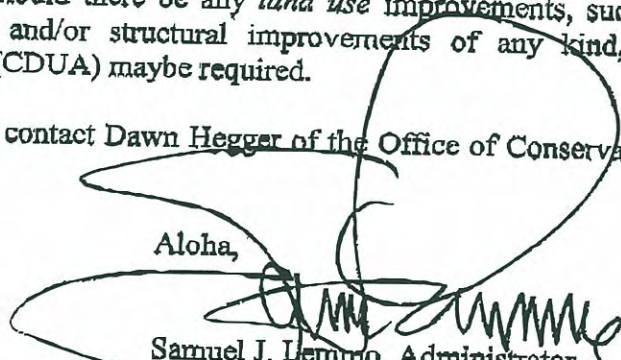
SUBJECT: Regarding Comments for Proposed Island Helicopters Kauai Landing Site on Subject Parcel TMK: (4) 1-8-001:001, Manawaiopuna Falls, Koula Valley, Island of Kauai

The Department of Land and Natural Resources' (DLNR), Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter, dated, November 6, 2007, regarding the proposed landing site for Island Helicopters Kauai on Subject Parcel TMK: (4) 1-8-001:001, Manawaiopuna Falls, Koula Valley, Island of Kauai.

The Office of Conservation and Coastal Lands (OCCL) notes Island Helicopters Kauai proposes to land in the State Land Use (SLU) Agricultural District, and walk to Manawaiopuna Falls that are located a short distance away in the Conservation District. The OCCL notes that the subject parcel appears to be partially located in the SLU Conservation District, Resource and Protective subzones. The OCCL notes the office does not regulate commercial tours that are conducted in the Conservation District. However, should there be any *land use* improvements, such as the clearing of trees, trail construction, and/or structural improvements of any kind, then a Conservation District Use Application (CDUA) may be required.

Should you have any questions, please contact Dawn Hegger of the Office of Conservation and Coastal Lands at 587-0380.

Aloha,

  
Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

cc: KDLO  
Kauai County Planning Department





U.S. Department  
of Transportation  
Federal Aviation  
Administration

Western-Pacific Region  
Honolulu Flight Standards District Office

135 Nakolo Place  
Honolulu, HI 96819-1845

Telephone: (808) 837-8300  
Facsimile: (808) 837-8388

December 13, 2008

Mr. Curtis Lofstedt  
Director of Operations  
Island Helicopters Kauai, Inc.  
P.O. Box 831  
Lihue, HI 96766

Dear Mr. Lofstedt:

Your request for a helicopter landing site at the Manawaiopuna Falls area in the Hanapepe Valley of Kauai is approved. After having flown into/out of the site and walking the area with you, I find that the approach, landing, take-off, and departure can be conducted safely.

Your company must maintain control of the operation at all times. Your pilot is directly responsible for the operation of the aircraft considering winds, weather, and the suitability of the landing site. Obtaining the land owner's permission is your responsibility, as well as any local government approvals.

As the Director of Operations, you may want to visit the site occasionally to determine continued suitability considering vegetation growth, slope, or any other pertinent factors.

If you have any questions regarding this or any other matter, please feel free to call me at (808) 837-8323.

Sincerely,

  
David S. Ryon  
Principal Operations Inspector



APPENDIX B

EMERGENCY RESPONSE ACTION PLAN



# EMERGENCY RESPONSE ACTION PLAN

## for Manawaiopuna Falls Landing

### ISLAND HELICOPTERS KAUAI, INC.

The following is an Emergency Response Action Plan (herein "Plan") for Island Helicopters Kauai, Inc., for responding to emergencies on tours landing at the base of Manawaiopuna Falls, Koula Valley, Hanapepe, Kauai, Hawaii.

The landings will be done at an approved landing site approximately 500 feet from the base of Manawaiopuna Falls. The passengers, after disembarking the aircraft, will be guided and accompanied by the pilot to the base of the falls, using an existing trail. After viewing and photographing the falls, the passengers will return to the aircraft, and the air tour around Kauai continued.

To minimize the possibility of injury, **no one will be permitted to enter into the water at the base of Manawaiopuna Falls, nor to meander from the trail between the landing site and the falls.** All pilots will be instructed to strictly comply with these requirements.

#### Equipment

All of the helicopters will have the following equipment:

- (a) Radio communication equipment capable of communicating with emergency personnel or agencies, the office, or, in the event of transmission and reception limitations due to terrain, with other helicopters in the area;
- (b) First aid kit;
- (c) Fire extinguisher;
- (d) Petroleum absorption pads.

Additional emergency equipment may be stored at the landing site, provided that such equipment shall be stored in such a manner that it is not readily visible from the air.

The company shall have the ability to contact the Robinson Family Partners or Gay & Robinson, Inc., for surface access to the site in the event that such access is necessary due to an emergency.



### Personnel

All pilots shall be trained in First Air and CPR. If available, additional training may be given with respect to neck and back injuries.

All pilots shall be instructed in the Plan.

### In Case of Injury or Medical Incident

In case of any INJURY OR MEDICAL INCIDENT, the pilot shall take the following steps:

1. Stabilize the injured party as much as possible and assess the nature of the problem. If the condition of the party is not serious and can be treated at the scene, take appropriate action to treat;
2. If the injury or medical incident cannot be treated at the scene, transport the subject party by air to the nearest emergency medical facility. At the present time, the nearest such facility is at the G. N. Wilcox Memorial Hospital;
3. If the party cannot be moved from the scene due the nature of the injury or medical incident, request assistance from emergency personnel, such as the Kauai Fire Department for transport to medical facilities. Remain at the scene until assistance arrives, unless it is necessary to leave the area to allow emergency help to land at the site;
4. Notify the office and appropriate agencies of the emergency;
5. A written report shall be prepared by the appropriate personnel to document the events leading up to and actions taken subsequent to the emergency.

### In case of Fire

In case of any FIRE, the pilot shall take the following steps:

1. Put out the fire if possible with available equipment;
2. If the fire is too large to put out with available equipment, move passengers to a safe location, including transporting the passengers out of the area by air;
3. Notice the office of the location and size and the need for Fire Department assistance if required;
4. The office is to request First Department assistance if necessary;



5. If necessary, a representative from the company, Robinson Family Partners, and/or Gay & Robinson shall arrange to meet Fire Department personnel at the nearest point of access to lead them to the site of the fire;

6. A written report shall be prepared by the appropriate personnel to document the events leading up to and actions taken subsequent to the fire.

#### **In case of hard or forced landing**

In the case of any hard or forced landing, the pilot shall take the following steps:

1. Assess the situation and determine the extent, if any, of any injuries requiring medical attention. If there are any injuries, respond to the injury as set forth above;
2. If the forced landing causes a fire hazard, respond accordingly to the hazard. See above, relating to fires;
3. Notify the office and the need for Fire Department or other emergency services if required;
4. Contain fuel leak, if any, by appropriate measures;
5. If the helicopter remains airworthy, remove the passengers and the aircraft from the site;
6. If the helicopter is not airworthy, coordinate with the removal of the passengers and the aircraft from the site;
7. Notify appropriate agencies of the landing incident as may be required by law;
8. A written report shall be prepared by the appropriate personnel to document the events leading up to and actions taken subsequent to the hard or forced landing.

#### **In case of oil/fuel spill**

In the case of any oil or fuel spill or leakage, the pilot shall take the following steps:

1. Locate the source of the oil or fuel, and take appropriate steps to stop further leaking;
2. Take appropriate action to contain the spill, such as using the petroleum absorption pads to soak up the spill, containing by dirt berms, etc.



3. Notify the office of the same, including the nature and size of the spill;
4. The office shall notify the appropriate agencies (such as Fire Department, Department of Health, etc.) of the spill;
5. The company shall take necessary and remedial actions to contain the spill and minimize contamination of the surround environment;
6. A written report shall be prepared by the appropriate personnel to determine the event leading up to and actions taken subsequent to the spill.

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This Emergency Response Action Plan shall be periodically reviewed and updated as necessary.