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March 19, 2012

TO: THE HONORABLE LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

ATTN: OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION 

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR LANAI AIRPORT
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

The Department of Transportation, Highways Division, has reviewed the Draft Environmental Assessment (DEA) for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the next OEQC edition of *The Environmental Notice*.

We have enclosed a completed OEQC Publication Form, one (1) PDF copy on CD, one (1) hard copy of the Draft EA, and a copy of the project summary.

Should you have any questions, please contact our Project Manager, Mr. Evan Kimoto at (808) 838-8803, Engineering Branch, Airports Division.

Enclosures

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
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DEPT OF HEALTH

**Agency Action EA
Chapter 343, HRS
Publication Form**

Project Name: Draft EA for
Lānaʻi Airport Runway Safety Area Improvements

Island: Lānaʻi

District: District of Maui

TMK: 2-4-9-002: Parcel 041

Permits: NHPA-Section 106 Consultation; ESA-Section 7 Consultation; Coastal Zone Management Federal Consistency Review; National Pollutant Discharge Elimination System, Notice of Intent (NOI) Form C – Construction Storm Water Permit

Proposing/Determination

Agency: State of Hawaiʻi, Department of Transportation - Airports Division, 400 Rodgers Boulevard, 7th Floor, Honolulu, HI 96819-1880. Evan Kimoto, Project Manager, (808) 838-8803

Consultant: R.M. Towill Corporation, 2024 N. King Street, Suite 200, Honolulu, HI 96819. Brian Takeda, Project Coordinator, (808) 842-1133

Status: 30-day comment period

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The State Department of Transportation, Airports Division (HDOT), proposes to construct runway improvements at the Lānaʻi airport. The purpose of the proposed project is to place fill material in the runway safety area (RSA) at the south end of the existing runway to comply with the Federal Aviation Administration (FAA) airport safety design requirements.

The project will involve placing fill material at the runway safety area located at the south end of the runway to re-work the existing grade to meet airport safety design requirements. The fill material will be acquired through grading and excavation of the approximately 250 acres of airport property surrounding the airfield. Approximately 1 million cubic yards of soil will be needed to fill a roughly 31.2-acre area that includes the runway safety area and adjacent areas to the acceptable slope.

Approximately 900 feet of new perimeter fence will be erected to encompass the improved runway safety area. Related improvements include relocation of existing navigational aids, a drainage culvert and fencing out of the RSA.

February 2012

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared in Accordance with the Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Title 11, Chapter 200

***Lāna'i Airport
Runway Safety Area Improvements***

State Project No. AM-4022-15

Island of Lāna'i, Hawai'i

March 2012

Proposing Agency:

State of Hawai'i
Department of Transportation
Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

DRAFT ENVIRONMENTAL ASSESSMENT

***Lāna'i Airport
Runway Safety Area Improvements***

Island of Lāna'i, Hawai'i

State Project No. AM-4022-15

Prepared Pursuant to the
Hawai'i Revised Statutes (HRS), Chapter 343, and
Hawai'i Administrative Rules (HAR), Title 11, Chapter 200

November 2011

Prepared for:
State of Hawai'i
Department of Transportation
Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

Prepared by:
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RMTC Reference No. 21806-0P

Table of Contents

Table of Contents	<i>i</i>
Project Summary	<i>iii</i>
Chapter 1 Project Overview	1
1. A. Purpose of the Project	1
1. B. Purpose of the Environmental Assessment	1
1. C. Project Location	2
1. D. Proposed Action	2
1. E. Alternatives	5
1. No Action	5
2. Extension of Runway Northward	5
2. Preferred Alternative - Proposed Action	5
Chapter 2 Description of Existing Environment, Potential Impacts, and Proposed Mitigation Measures	6
2. A. Physical Environment	6
1. Surrounding Land Uses	6
2. Topography and Soils	6
3. Agriculture	8
4. Natural Hazards	10
5. Flora and Fauna	11
6. Hydrology	13
7. Archaeological Resources	13
8. Cultural Impact Assessment	14
9. Air Quality and Noise Characteristics	15
10. Scenic Resources	15
11. Recreational Resources	16
2. B. Public Services	16
1. Airport Operations	16
2. Police, Fire Protection and Medical Services	17
3. Solid Waste Disposal	17
2. C. Infrastructure	18
1. Roadways	18
2. Water System	18
3. Wastewater System	19
4. Drainage	19
5. Electrical and Communications Systems	19
6. Housing and Economic Considerations	19
Chapter 3 Relationship to Land Use Plans, Policies, and Controls	21
3. A. State Land Use District	21
3. B. Maui Island Plan	21

3. C. Countywide Policy Plan.....22

3. D. Lāna‘i Community Plan.....23

3. E. Maui County Zoning.....24

3. F. Coastal Zone Management Objectives and Policies.....24

 1. Recreational Resources.....24

 2. Historical/Cultural Resources.....25

 3. Scenic and Open Space Resources.....25

 4. Coastal Ecosystem.....26

 5. Economic Use.....26

 6. Coastal Hazards.....27

 7. Managing Development.....27

 8. Public Participation.....28

 9. Beach Protection.....28

 10. Marine Resources.....28

Chapter 4 Significance Criteria Assessment.....30

Chapter 5 List of Permits and Approvals.....33

Chapter 6 Agencies and Organizations to be Consulted for the EA.....34

References.....37

Appendix A - Biological Surveys for Lāna‘i Airport Safety Zone Improvements, Island of Lāna‘i

PROJECT SUMMARY

Project	Lāna‘i Airport Runway Safety Area Improvements State Project No. AM-4022-15
Proposed Action	Grading activities to correct non-compliant grades in the runway safety area at the south end of the Lāna‘i Airport facility. Accessory improvements include installation of a new perimeter fence surrounding the improved runway safety area.
Applicant or Proposing Agency	State of Hawaii Department of Transportation – Airports Division 869 Punchbowl Street Honolulu, Hawaii 96813 Glenn Okimoto, Director of Transportation
Accepting Authority	State of Hawaii Department of Transportation 869 Punchbowl Street Honolulu, Hawaii 96813 Glenn Okimoto, Director
Draft EA Preparer	R. M. Towill Corporation 2024 North King Street, Suite 200 Honolulu, Hawaii 96819 Brian Takeda, Planning Project Coordinator
Location	Lāna‘i Airport, Lāna‘i, Hawai‘i
Land Ownership	State of Hawaii Department of Transportation, Airports Division 400 Rodgers Boulevard, 7th Floor Honolulu, HI 96819-1880
Tax Map Key (TMK)	2-4-9-002: Parcel 041
Project Area	Approximately 250 Acres
Existing Land Use	Airport facility
County Zoning	Airport
State Land Use	Urban
Permits That May Be Required	FEDERAL: NHPA-Section 106 Consultation, ESA-Section 7 Consultation STATE: Coastal Zone Management Federal Consistency Review; National Pollutant Discharge Elimination System (NPDES), Notice of Intent (NOI) Form C -Construction Storm Water Permit

Chapter 1 Project Overview

1. A. Purpose of the Project

The State Department of Transportation, Airports Division (HDOT), proposes to construct runway improvements at the Lānaʻi airport. The purpose of the proposed project is to place fill material in the runway safety area (RSA) at the south end of the existing runway to comply with the Federal Aviation Administration (FAA) airport safety design requirements. Lānaʻi airport's Airport Reference Code (ARC) designation is C-III, which requires a 500-foot wide by 1,000-foot long runway safety area. At present, there is an approximately 30-foot drop located roughly 100 feet from the southern end of the airport runway.

The runway safety area surface gradient standards in the Advisory Circular 150/5300-13 call for following:

- “ For the first 200 feet (60 m) of the runway safety area beyond the runway ends, the longitudinal grade is between 0 and 3 percent, with any slope being downward from the ends.
- For the remainder of the safety area, the maximum longitudinal grade is such that no part of the runway safety area penetrates the approach surface or clearway plane. The maximum allowable negative grade is 5 percent”. *AC150/5300-13-Section 502.b(1)*.

In order to comply with the runway safety area surface gradient standard, the State Department of Transportation, Airports Division is proposing to place fill material in the runway safety area at the south end of the existing runway to achieve the proper grade.

Approximately 900 feet of new perimeter fencing will be erected to encompass the improved runway safety area.

Other proposed improvements include relocation of the Glide Slope Antennae, an instrument shelter and an Automated Weather Observing System (AWOS) to accommodate the new RSA construction at the south end of the runway. On the north end of the runway, an existing localizer equipment shelter will need to be relocated out of the RSA along with realignment of the fence line and improvements to an existing drainage culvert.

1. B. Purpose of the Environmental Assessment

The preparation of this Environmental Assessment (EA) is required as a result from the proposed use of FAA funds (National Environmental Policy Act (NEPA) and HDOT lands or funds (Chapter 343, HRS).

This EA is prepared pursuant to the requirements of the Chapter 343, Hawaiʻi Revised Statutes (HRS). It assesses the potential for adverse environmental impacts due to construction of the proposed airport improvements. As appropriate, mitigation measures to address potential for negative environmental impacts are identified.

The requirements for NEPA documentation will be handled through the filing of Documentation for Categorical Exclusions listed under Title 23 of the Code of Federal Regulations, Section 771.117(d).

This document informs interested parties and seeks public comment on subject areas that should be addressed prior to the filing of the Final EA (FEA). FAA, the accepting authority, will issue its decision only after all the comments received are reviewed on the draft EA. A Finding of No Significant Impact (FONSI) is anticipated by HDOT.

1. C. Project Location

The proposed project is located on the island of Lānaʻi (see Figure 1, Project Location). The airport property is located approximately 3 miles southwest of Lānaʻi City. The proposed project site includes majority of the open area surrounding the airport facility, within the existing Lānaʻi airport property, identified by TMK: 2-4-9-002: Parcel 041.

Access to the Lānaʻi Airport is off of Kaunalapau Highway. Kaunalapau Highway (State Hwy 440), is a two-lane roadway that runs from Lānaʻi City to Kaunalapau Harbor on the western coast of Lānaʻi. A two-lane airport access road leads from Kaunalapau to the airport.

There are two secondary roads located at either end of the airport. Miki Road is located to the north and Kaupili Road is located to the south of the airport. To alleviate potential traffic impacts resulting from construction vehicles, these secondary roads may be used to access the project site.

1. D. Proposed Action

HDOT is proposing to construct runway improvements at the Lānaʻi airport, which involves placing approximately 1 million cubic yards of fill material at the runway safety area located at the south end of the runway to rework the existing grade to meet FAA airport safety design requirements. The fill material will be acquired through grading and excavation of the approximately 250 acres of airport property surrounding the airfield. Approximately 1 million cubic yards of soil will be needed to fill a roughly 31.2-acre area that includes the runway safety area and adjacent areas to the acceptable slope (see Figure 2, Site Plan).

Approximately 900 feet of new perimeter fence will be erected to encompass the improved runway safety area. Related improvements include relocation of existing navigational aids, a drainage culvert and fencing out of the RSA.

The existing drainage patterns of the airfield area are sufficient to support the airport and runway, and will be maintained.

Construction is estimated to occur in early summer of 2011 and will last approximately 6 months. The total project cost estimate is approximately \$21 million. Funding sources will be from the Federal Aviation Administration (FAA) and State Airport funds. FAA will contribute approximately 95 percent and the State of Hawaiʻi will contribute 5 percent of the funding needed for this project.

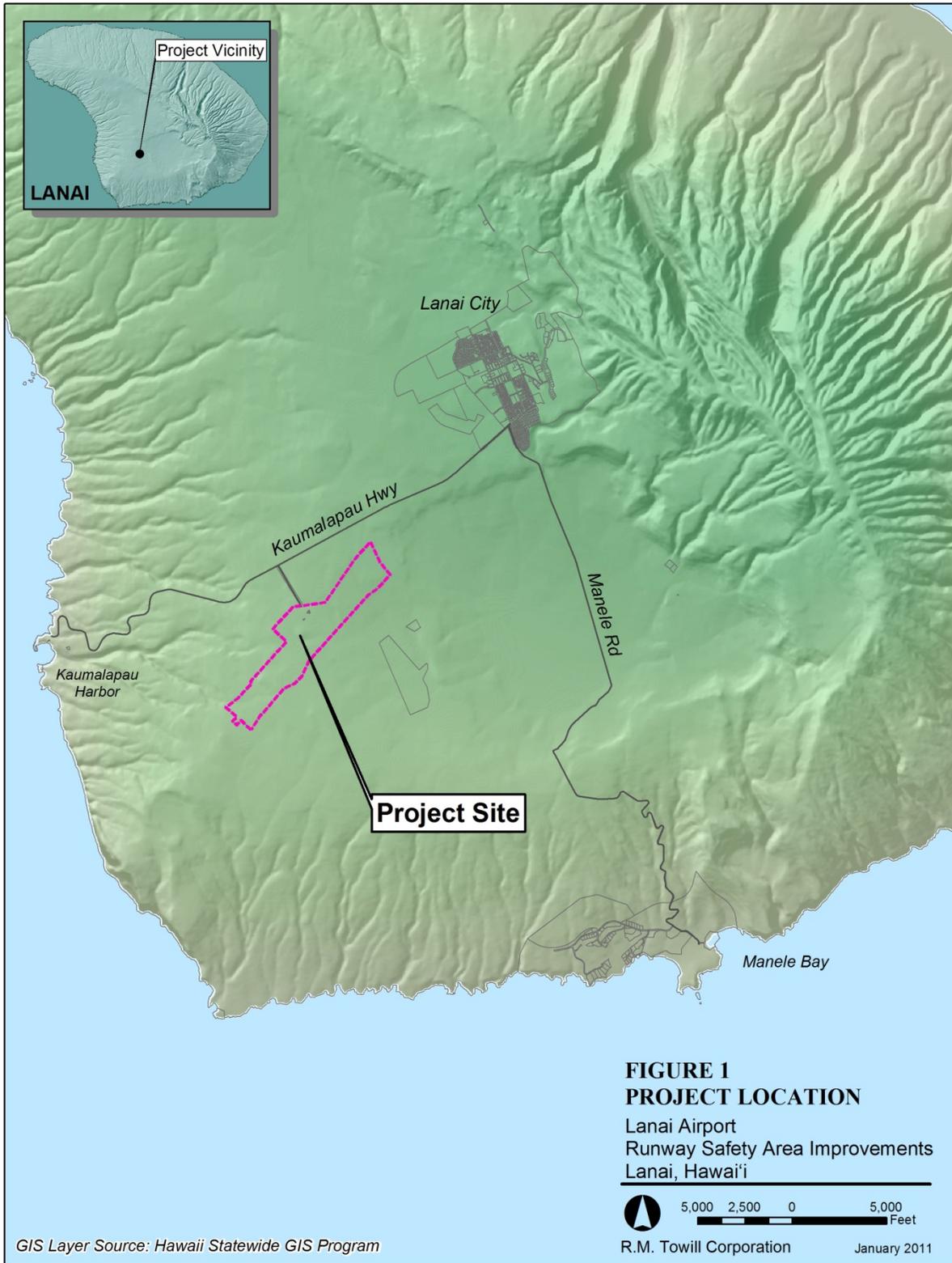


Figure 1. Project Location Map

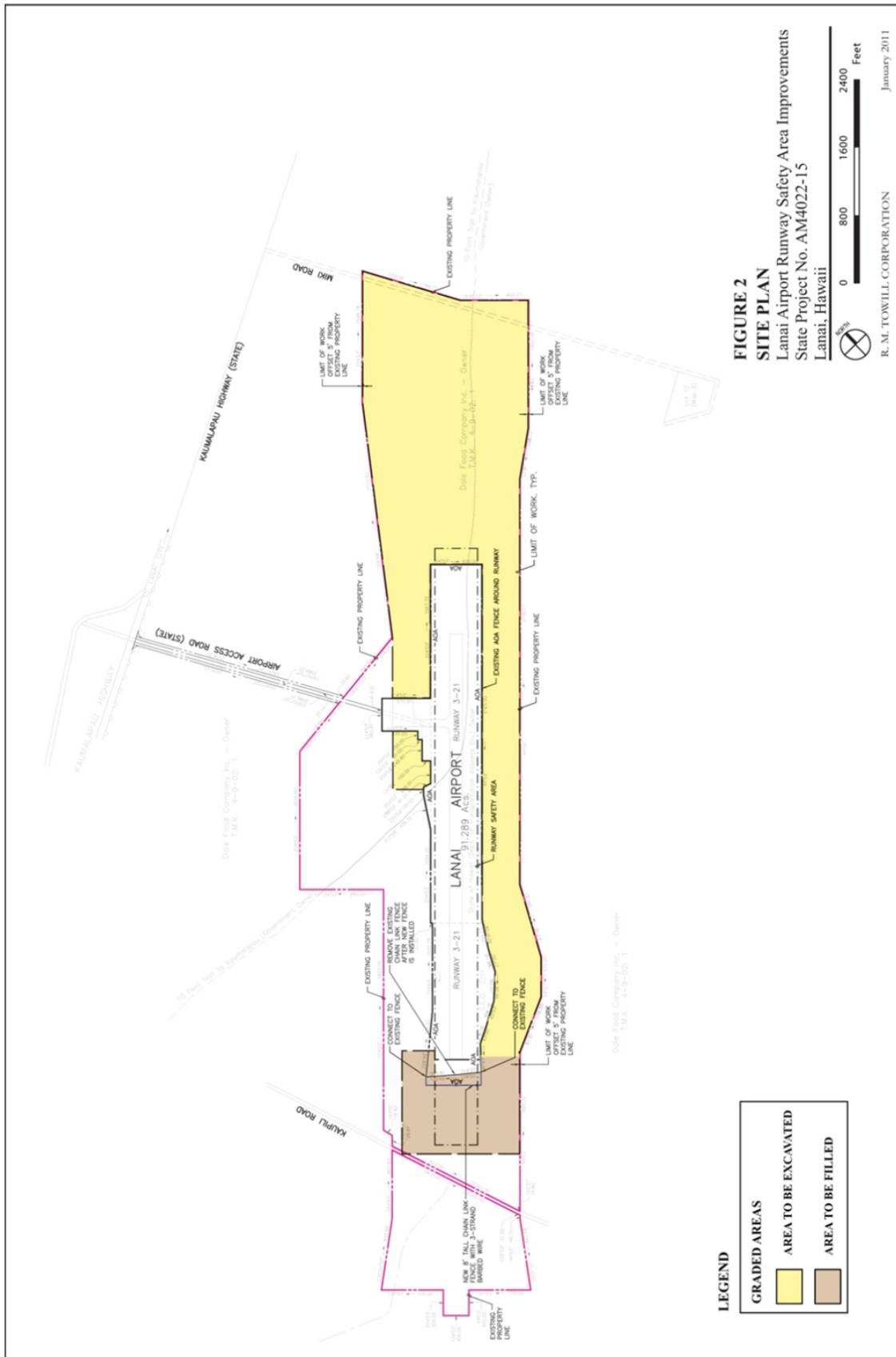


Figure 2. Site Plan

1. E. Alternatives

1. No Action

The No Action Alternative involves no further action to improve the runway safety area. No action would involve no further planning and engineering cost for development and result in the continued use of the airport facility that does not meet current safety design standards. The airport would continue to operate in non-conformance with the surface gradient standard for the runway safety area.

The No Action Alternative is not considered a viable nor feasible alternative because it would fail to address the need for the airport to meet the FAA safety design requirements. For this reason the No Action Alternative is rejected from further consideration.

2. Extension of Runway Northward

This alternative would extend the runway at least 1,000 feet to the north to allow for the runway safety area at the south end of the runway to be compliant with the FAA safety design requirements. This action would involve grading and construction of the new extended runway surface. Because the runway will be shifted to the north, the navigational aids will also have to be realigned or relocated. Realignment or relocation of the navigational aids will result in temporary closure of the airport. Long-term impacts would involve aircraft operations taking off and landing closer to Lānaʻi City, resulting in a possible increase in aircraft noise.

The extension of the runway to the north will bring the airport closer to Lānaʻi City. The 1998 Lānaʻi Community Plan included the prohibition of extending the Lānaʻi Airport's runway in the direction of Lānaʻi City, as one of its implementing actions for Physical Infrastructure.

While this alternative meets the need to improve to the Lānaʻi Airport runway safety area in keeping with the FAA airport safety design requirements, it was rejected from further consideration because of the following reasons:

- Existing Community Plan policy to “prohibit the extension of Lanaʻi Airport's runway in the direction of Lanaʻi City”;
- The potential for airport closure to relocate navigational aids; and
- Possible increase in noise impacts from runway being moved closer to Lānaʻi City.

3. Preferred Alternative - Proposed Action

The subject proposed action is the preferred alternative and involves re-grading the runway safety area located at the south end of the runway to meet FAA airport safety design requirements. Fill material will be placed in the runway safety area and adjacent areas to correct the existing grade. The fill material to be used at the site will be obtained by grading the adjacent open area surrounding the airfield. The proposed action will enable the runway safety area to meet the FAA airport safety design requirements.

Chapter 2 Description of Existing Environment, Potential Impacts, and Proposed Mitigation Measures

2. A. Physical Environment

1. Surrounding Land Uses

a. Existing Conditions

Lāna‘i Airport is located on the Island of Lāna‘i and is located approximately 3 miles southwest of Lāna‘i City. The airport has a single runway configuration, designated Runway 3-21, that is 5,000 feet long and 150 feet wide, and aligned in a northeast-southwest direction. The single 75 feet wide by 287.5 feet long taxiway serves as both an entrance and an exit for Runway 3-21.

The airport property covers approximately 504 acres and is surrounded by lands designated for agricultural use. Prior to the airport facility being constructed in 1940, the project site and the surrounding area were used for pineapple cultivation.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project is compatible with uses within the airport. The proposed facility improvements will take place entirely within the boundary of the airport parcel, and therefore, it is not anticipated to impact adjacent lands.



Photo 1. View of the Existing End of the Runway Safety Area Looking West

2. Topography and Soils

a. Existing Conditions

Lāna‘i Airport is located on the southwest portion of the island and approximately 2 miles east of the nearest coastline. The Airport lies on a relatively flat ridge where the surrounding terrain slopes away from the site in both the easterly and westerly directions. The terrain beyond the ends of the runways falls to the southwest and rises at 2 percent to the northeast. The elevation at the project site ranges from 1,200 feet above mean sea level (MSL) to 1,400 feet MSL.

According to Soil Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lānaʻi, State of Hawaiʻi, as prepared by the U.S. Department of Agriculture, 1972, the project site and surrounding area are comprised of soils from the Molokaʻi-Lahaina association. Soils from the Molokaʻi-Lahaina association are found upland, and consist of deep, nearly level to moderately steep, well-drained soils that have moderately fine textured or fine textured subsoil. The two soil types in this area are Molokaʻi silty clay loam. MuA has 0 to 3 percent slopes and is characterized by moderate permeability, slow runoff, and slight erosion hazard. MuB, has 3 to 7 percent slopes and is defined by slow to medium runoff and slight to moderate erosion hazard.

b. Potential Impacts and Proposed Mitigation Measures

The potential for significant adverse effects to topography are not anticipated based on the scope and extent of the proposed project. The proposed grading activities will not result in major changes to the affected topography, aside from the fill at the runway safety area that is required for safety design requirements. The excavation activities in the adjacent areas will mainly consist of surface grading and will result in a more consistent grade across the property.

Protection from construction storm water runoff will be addressed through the implementation of a Best Management Practices (BMPs) plan to govern all ground-disturbing activities. Measures will include the use of vegetative, structural and management practices, as required, to prevent untreated construction storm water runoff from entering state waters and to reduce the effects of erosion and weathering.

There are no anticipated long-term adverse impacts to soils at the project area. Ground disturbance will only be undertaken during construction, and any waste material that cannot be reused will be removed from the project site. Adherence to Federal and State guidelines governing construction of the project shall also be employed including the review and approval of the construction plans and related environmental entitlements that will be filed with the appropriate agencies for this project. This will include the preparation of an Erosion Control Plan (ECP) and the implementation of erosion and sediment controls in accordance with the National Pollutant Discharge Elimination System (NPDES) permit that will be secured for this project.

Mitigation against the loss of soils and construction materials in storm water runoff will be addressed through adherence to the requirements of Hawaiʻi Administrative Rules (HAR), Chapter 11-55, Water Pollution Control (NPDES Permit Program).

Temporary BMPs shall include the use of silt fences and other applicable measures to prevent storm water from carrying soil away from the active work area. Other measures will include frequent spraying of water on the disturbed area to control dust. Vegetative controls will be used as permanent BMPs to stabilize disturbed areas. Permanent BMPs (grassing) will be installed once final grades are established.

The following are typical BMP measures that would be applied to the subject project to address NPDES construction storm water requirements:

Before Construction

- Existing ground cover will not be destroyed, removed or disturbed more than 20 calendar days prior to start of construction.

- Erosion and sediment control measures will be in place and functional before ground disturbance may begin, and will be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.

During construction:

- Clearing shall be held to the minimum necessary for grading, equipment operation, and site work.
- Construction shall be sequenced to minimize the exposure of cleared surface areas. Areas of one phase shall be stabilized before another phase can be initiated. Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as silt fences or vegetative controls such as grass seedling or hydromulching.
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that remain unfinished. Permanent soil stabilization using vegetative controls and/or soil binders shall be applied as soon as practicable after final construction.
- All control measures will be checked as necessary.
- Maintenance and fueling of construction equipment and vehicles shall be performed only in designated areas. Clean up materials shall be placed in a conspicuous location to facilitate cleanup in the event of inadvertent leaks or spills. Refueling and maintenance of vehicles and equipment shall not be permitted outside of designated refueling areas.
- All liquid materials including petroleum, oils, and lubricants (POLs), solvents and cleaners shall be stored in sealable containers. No open containers for the storage of such materials will be permitted.

After construction:

- All equipment no longer necessary to the site will be removed. Construction debris and refuse will be disposed of at an approved facility that accepts construction and demolition debris waste by the contractor.

3. Agriculture

a. Existing Conditions

The Land Study Bureau (LSB) classification is an inventory and evaluation of the overall productivity rating of the State's non-urban lands. Soils are grouped into land types based on soil and productive capabilities such as soil properties, topography, climate, and other factors such as technology and crop type. There are 2 sets of productivity ratings, Overall Productivity Rating - "A", very good to "E", not suitable, and Crop Productivity ratings for pineapple, sugar, vegetables, forage, grazing, orchard, and timber. (Land Classification Systems and Agricultural Land Use Planning in Hawaii <http://www.hawaii.stateassessment.info/library/chillingworthhigiclandclassificationsystems-091030225434-phpapp01.pdf>)

The Land Study Bureau has classified the land in the project area with the soil productivity rating of "D".

According to the Maui County General Plan 2030, the State Department of Agriculture has developed a classification system that analyzes soil productivity, water retention, erosion, chemical makeup, and factors favorable for root growth. Under the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) system, there are three classifications:

1. Prime – land that has the best physical, chemical, and climatic properties for crop production.
2. Unique – land that is best suited for special or high-value crops such as watercress, coffee, or taro.
3. Other – land that may not be the most productive, but is convenient for agricultural purposes because of its location, access to water, or other factors.

Together, these types of agricultural lands form the important agricultural lands of the County. The ALISH map of the area indicates that the project site falls within the "unique" agricultural land category.

b. Potential Impacts and Proposed Mitigation Measures

The proposed facility improvements will be limited to the area within the existing airport property, therefore the proposed project is not anticipated to have a negative impact on the surrounding areas’ potential for agricultural use.



Photo 2. View Facing North Towards the Terminal**Photo 3 View Facing Northeast Along the Eastern Boundary**

4. Natural Hazards

a. Existing Conditions

The Hawaiian Islands are susceptible to five main types of natural hazards: earthquakes and volcanic activity, hurricanes, tsunamis and floods.

Earthquakes and Volcanic Activity

Natural hazards in the Hawaiʻi region are infrequent and rarely destructive. Earthquakes occurring in Hawaiʻi are closely linked to volcanic activity. Volcanic activity will not affect the proposed project directly through volcanic eruption, as there are no active volcanoes on the island of Lānaʻi.

According to the U.S. Geological Survey (USGS), Lānaʻi is located in the Zone 2 category for seismic activity as established by the Uniform Building Code (UBC). The UBC provides minimum design criteria to address the potential for damage due to seismic disturbances. The range of seismic risk varies from Zone 0, indicating no damage, to Zone 4, indicating major damage. <http://hvo.wr.usgs.gov/earthquakes/hazards/>

Although the possibility of earthquakes on Lānaʻi is lower than that of the other island's, the potential for damage to the proposed project site may occur from an earthquake of sufficient magnitude. The potential for damages to the proposed project will be minimized by complying with appropriate Federal, State, and County design standards.

Tsunami

A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. These waves can occur at any time with limited or no warning.

The tsunami evacuation maps for the island of Lānaʻi indicate that the project site is located well beyond the limits of coastal flooding resulting from a tsunami event.

Hurricanes

Heavy rains and strong winds associated with tropical storms occasionally impact the Hawaiian Islands and can cause flooding and major erosion. Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane force wind speeds. Hawaiʻi's annual "hurricane season" is from June through November.

Flood Hazard

Based on the Flood Insurance Rate Map (FIRM) for the Island of Lānaʻi, the project area is located in Zone X; areas determined to be outside of 0.2 percent annual chance floodplain.

b. Potential Impacts and Proposed Mitigation Measures

Earthquake and Volcanic Activity Hazard

The material to be placed in the runway safety area will be general fill and not designed to support any structures. At a minimum, the filled area will be designed so that the fill slopes will be graded appropriately to maintain stability.

Hurricane and Tsunami Hazards

The proposed project involves only grading activities and not anticipated to be affected by hurricanes. The disturbed areas will be stabilized with vegetative cover to minimize erosion from storm-generated runoff. The project area is outside of the tsunami inundation areas, therefore no mitigation measures are proposed.

Flood Hazard

The proposed project site is not within flood-prone areas and therefore not expected to be significantly impacted by flooding events. No further mitigation measures related to flooding are planned or proposed.

5. Flora and Fauna

a. Existing Conditions

As part of this project, a biological survey was done in February 2011 to describe the flora and fauna within the project limits (see Appendix A). Vegetation in the vicinity of the project site is mostly grasses and scattered low-lying scrub vegetation. Of the 56 species observed, four are considered native to the Hawaiian Islands and include ʻilima (*Sida fallax*), ʻuhaloa (*Waltheria indica*), koaliʻai and ʻaʻaliʻi (*Dodonaea viscosa*). No plant species considered threatened or

endangered, or which otherwise are considered to be rare or of special significance by the State of Hawaiʻi or federal government were found within the project site.

Faunal species found at the site included two mammalian species. Seven Axis deer (*Axis axis*) were sighted and tracks, scat and sign of both deer and dog (*Canis f. familiaris*) were encountered at numerous locations within the project site. One dog was heard barking outside the project site. Although no rodents were detected during the course of this survey, it is likely that three of the four established alien *muridae* found on Lānaʻi, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), European house mouse (*Mus musculus domesticus*) use various resources found within the general project area. No mammalian species protected or proposed for protection under either the federal or state endangered species programs were detected during the course of this survey.

A total of 138 individual birds of 16 species were recorded during station counts. Two of the species detected, Pacific Golden-Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*) are native migratory shorebirds. The remaining 14 species recorded are all considered to be alien to the Hawaiian Islands and included the Sky Lark (*Alauda arvensis*), Northern Cardinal (*Cardinalis cardinalis*), and house Sparrow (*Passer domesticus*). These three bird species accounted for almost half of the total number of individual birds recorded. Although not detected during the survey, Hawaiian Petrel (*Pterodroma sandwichensis*) likely over-fly the airport between April and the end of November each year as there is a colony of this endangered species on Lānaʻi. There are neither nesting colonies, nor appropriate nesting habitat for Hawaiian Petrels within, or close to the Lānaʻi airport. The petrel is listed as endangered under both federal and State of Hawaiʻi endangered species statutes.

b. Potential Impacts and Proposed Mitigation Measures

No adverse effects to rare, threatened or endangered flora are anticipated as all work will remain within the previously-disturbed area within the airport property. Upon the completion of work, all areas of exposed soils will be vegetated with appropriate vegetative cover and/or soil binders to stabilize the disturbed areas.

The proposed action poses to Hawaiian Petrels is the increased threat that birds will be downed after becoming disoriented by outdoor lighting associated with the proposed night-time construction activity. Collision with man-made structures is considered to be the second most significant cause of mortality of these seabirds in Hawaiʻi. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets for feral mammals.

Throughout the duration of the project, the contractor will be required to shield night-time lighting to minimize potential impacts to birds (including the Hawaiian Petrel) flying over the project site at night. Upon completion of the project, all temporary impacts (noise, night-time lighting, dust, etc.) are expected to return to preconstruction conditions. In the long-term, the proposed project is not anticipated to adversely impact rare or threatened biological resources in the area.

6. Hydrology

a. Existing Conditions

Surface Waters

There are no standing bodies of water on the subject property. The existing drainage pattern at the project site is mainly surface flow following the existing topography. Storm water runoff flows in an easterly direction and eventually discharges in a tributary of the Kaumalapau Gulch which runs across the southwestern portion of the property.

The only major surface water in the vicinity of the project site is the ocean, which is approximately 2 miles to the west of the project site. There are no perennial or intermittent streams, or wetlands in close vicinity of the project site.

Ground Water

Lānaʻi has basal and high-level dike confined aquifers. Ground water on Lānaʻi comes from dike basal ground water derived from rainfall. The rainfall is absorbed into the ground and is impeded by a series of volcanic dikes. These dikes supply the basal lens of fresh water that sits under the island. A Numerical Ground Water Model for the Island of Lānaʻi, Hawaiʻi
<http://hawaii.gov/dlnr/cwrmpublishedreports/CWRM-1.pdf>

b. Potential Impacts and Proposed Mitigation Measures

There may be temporary impacts concerning the quality of the surface runoff during site grading activities. Due to aviation safety considerations care will be taken during construction to ensure storm water runoff will not create standing water which potentially could attract water birds and create a potential aviation hazard. Site grading will be designed to prevent low areas where ponding may occur. A Best Management Practices (BMPs) Plan will be prepared and implemented to handle storm water runoff associated with the proposed project.

The proposed project is not anticipated to itself constitute an adverse potential impact on the groundwater resources of the area. The potential for construction related impacts to groundwater are principally anticipated to involve discharges percolating into the ground from petroleum products and other chemicals associated with construction vehicles and machinery. Mitigation measures include the preparation of a NPDES Construction Stormwater Permit to address discharges of storm water runoff associated with the proposed construction activity. A BMPs Plan, to be done as part of the NPDES permit, will address both the proper handling of petroleum products and the potential for mixing of storm water with construction materials and debris by describing appropriate management, structural, and vegetative controls that may be applied at the project site. Both project design measures and implementation of BMPs are expected to prevent adverse impacts to ground water and coastal waters.

The proposed project does not involve construction of impermeable surfaces, therefore no impacts to groundwater recharge is anticipated.

7. Archaeological Resources

a. Existing Conditions

Previous archaeological studies in and around the proposed project site has revealed that the area was used for traditional Hawaiian cultivation of sweet potato, gourd and sugar cane during pre-contact times. Other investigations show that agriculture and habitation settlements once took

place along the rim of Miki and Palawai basins until the time of the Great Mahele and sporadically into the 1920s. The previous extensive commercial pineapple cultivation resulted in destruction of most of the surface features associated with traditional agriculture and settlement. The ongoing improvements to the Lānaʻi Airport Operations Area have also significantly altered the ground surface of the site.

Previous studies also indicate the former presence of the Ili o Lono Heiau within the overall airport property and the presence of previous pre-contact habitation along the basin rim may present some potential for encountering subsurface cultural materials.

Additional archaeological studies have been commissioned as part of this proposed project, and the results will be included in the Final EA.

b. Potential Impacts and Proposed Mitigation Measures

The potential for adverse effects to historic or archaeological resources are not anticipated due to extensive alteration of the ground from previous agricultural activities and the existing activities related to the operations of the Lānaʻi Airport. Because there is always the potential for the discovery of ʻiwi or other cultural remains, any inadvertent finds will immediately result in the cessation of work and the immediate reporting of the find to the State Historic Preservation Division (SHPD) at or (808) 692-8015. SHPD will furnish further instructions regarding the treatment of the find and the conditions when work may be resumed.

8. Cultural Impact Assessment

a. Existing Conditions

The following information is from a 2009 Cultural Impact Assessment report done for a previous Lānaʻi Airport improvement project.

The upland area of the Miki and Palawai Basins were well known dry land agricultural lands where crops such as sweet potato, gourd and sugar cane were cultivated.

Through cultural interviews, it was revealed that there the site of the former Ili o lono *heiau* was located in an area approximately where the center of the existing runway is. This *heiau* was a dry land agricultural *heiau* of the area chief. The destruction of the *heiau* coincides with the commencement of pineapple cultivation in the area in the early 1920's.

Cultural interviews also made reference to a traditional mauka-makai trail which provided between the coastal and upland settlements and resources. This trail followed the Kamoku-Kalulu *ahupuaʻa* boundary through what is now the northeastern portion of the airport property (near the existing parking lot). This trail does not exist today.

Additional studies have been commissioned as part of this proposed project, and the results will be included in the Final EA.

b. Potential Impacts and Proposed Mitigation Measures

The potential for adverse effects to cultural resources is not anticipated as the project site consists of a previously disturbed area and includes plant species not normally associated with cultural gathering or use activities (see Section 5. Flora and Fauna, above).

9. Air Quality and Noise Characteristics

a. Existing Conditions

No sampling data was collected on air quality. However, air quality at the project site is generally good due to the regular presence of prevailing winds, and its location on the island. Existing major sources of air pollution are not present with the exception of airplane exhaust from landing and departing aircraft, however, these particulates generated by these emissions are intermittent and quickly dispersed.

Ambient noise emissions in the area generally result from traffic along roadways and aircraft traffic.

Construction-associated noise is anticipated to result from clearing and grading activities. Construction equipment is expected to include, but not be limited to bulldozers, excavators, graders, dump trucks, and other related heavy equipment.

b. Potential Impacts and Proposed Mitigation Measures

Construction activities are expected to have little to no impact to air quality since the project will be of limited duration, and where engine exhausts may be a source of potential air pollution, all internal combustion equipment will be governed in accordance with applicable state regulations in HAR, Chapters 11-59 and 11-60, relating to Air Pollution Control.

During construction, fugitive dust is expected to be generated. Fugitive dust will be controlled with the regular wetting of the soil by the contractor and/or by the use of dust screens, as required. The use of water for dust control will only be in amounts sufficient to dampen the soils to inhibit the generation of dust without causing runoff that could be discharged into state waters. Once grading activities are completed, all disturbed areas will be stabilized with appropriate vegetation or through the use of soil binding products. It is anticipated that there will be no long-term effects to air quality as conditions will return to pre-construction levels once the project is completed.

The construction related noise will be temporary and limited to the duration of the project. Upon completion of work, noise will return to pre-existing background levels. No further measures are anticipated to be required.

10. Scenic Resources

a. Existing Conditions

The project area is located in an existing airport facility. The airport is located in a relatively flat area, surrounded by agricultural fields and undeveloped areas.

b. Potential Impacts and Proposed Mitigation Measures

No adverse impacts to scenic and visual resources are anticipated. The proposed project is limited to grading activities within the existing airport property and is not expected to significantly affect existing viewplanes.

Construction activities will temporarily alter the visual resources of the area, by the presence of equipment and personnel in the vicinity of the project site. Upon the completion of construction,

all equipment and personnel will be removed. No mitigation measures are anticipated to be required.

11. Recreational Resources

a. Existing Conditions

The project site is part of the existing airport facility and does not support recreational activities.

A traditional beach/mountain access trail was referenced in the cultural impact assessment following the Kalulu-Kamoku *ahupuaʻa* boundary near the project site. However, this trail is no longer in existence.

b. Potential Impacts and Proposed Mitigation Measures

For safety and security reasons, access into the project site is restricted. Any recreational resources in the areas surrounding the airport property will not be affected by the proposed improvements; therefore no mitigation measures are anticipated to be required.

2. B. Public Services

1. Airport Operations

a. Existing Conditions

Existing regularly scheduled air service to Lānaʻi includes Island Air and go!Mokulele. Air Taxi and charter services are provided by Marjet, Paragon Air and Trans Air. The hours of operation are generally from 6 a.m. to 8 p.m., daily.

The proposed project will have the potential to disrupt airport operations. The presence of heavy equipment and personnel within the RSA is prohibited during aircraft operations. Relocation of the navigational aids has the potential of disrupting flight schedules. Runway closure will be required when construction activities are ongoing.

The proposed grading activity within the airport property has the potential to increase wind-driven dust onto the runway and affect flight operations.

b. Potential Impacts and Proposed Mitigation

To minimize disruption to aircraft operations, the proposed construction activities will be scheduled to occur at night, after the last scheduled flight has departed and end prior to the first scheduled arriving flight in the morning. To provide for additional safety margin, construction activities will begin 30 minutes after the last flight and end at least 30 minutes prior to the scheduled arrival of the morning flight. All equipment will be relocated to a designated staging area and personnel will vacate the work site prior to the morning deadline. The relocation of the navigational aids will be scheduled outside of the regular airport operating hours to prevent disruption airport operations.

Additionally, the contractor, in coordination with DOT-Airports, will develop a contingency plan to re-open the runway should emergency landings or emergency air evacuations be necessary.

Coordination with FAA will be done to ensure that the operation of navigational aids will not be disrupted during construction.

During grading activities, water trucks will be used to keep disturbed areas dampened to prevent dust pollution. Throughout the construction period, dampening of the soil may be done as necessary to prevent excessive dust from hindering airport operations. Refer also to Section 2- Topography and Soils for additional BMPs to handle dust pollution and soil erosion.

2. Police, Fire Protection and Medical Services

a. Existing Conditions

The Public Facilities Assessment Update for the County of Maui (2007) states that police and security services for island residents are provided by the Maui County Police Department (MPD). The Lānaʻi Police Station is situated in Lānaʻi City. Fire prevention, protection, and suppression services for the island of Lānaʻi are provided by the Maui County Department of Fire and Public Safety. Located in Lānaʻi City, the Lānaʻi Fire Station is staffed by fire fighters on alternating work shifts and is equipped with two (2) vehicles with a water storage capacity of 700 gallons per vehicle.

The Lānaʻi Community Hospital is the major medical facility on the island. The 14-bed facility provides acute and long-term medical care, as well as 24- hour emergency medical service.

b. Potential Impacts and Proposed Mitigation

Police, fire protection and medical services are not expected to be adversely impacted by the proposed action. The proposed project will not result in increase of airport personnel or extend existing service area limits.

As stated earlier, the contractor will develop a contingency plan to re-open the runway should emergency landings or emergency air evacuations be necessary.

3. Solid Waste Disposal

a. Existing Conditions

According to the Public Facilities Assessment Update for the County of Maui (2007), residential solid waste disposal on Lanai is provided by the Maui County Department of Environmental Management (DEM), while commercial disposal service is provided by a private disposal service. Opened in 1974, approximately 17 acres of the Lanai landfill's 35.67-acre site is currently utilized as a landfill. The existing landfill is anticipated to reach approximately 10 to 20 year's capacity in 2056 (R. M. Towill, 2007).

b. Potential Impacts and Proposed Mitigation

The construction of the proposed project is not expected to have any long-term impacts to solid waste facilities based on the limited scope and scale of work. Short-term impacts are anticipated in the form of construction debris that will be generated requiring disposal. The construction contractor shall be responsible for the disposal of construction debris at a county-approved landfill or disposal site in conformance with County regulations. Material excavated from the site will be used as fill material for the runway safety area improvements.

2. C. Infrastructure

1. Roadways

a. Existing Conditions

Access to the Lanai Airport is off of Kaumalapau Highway. Kaumalapau Highway is a two-lane State Highway (Highway 440), running from Lanai City to Kaumalapau Harbor on the western coast of Lanai. The airport access road off of Kaumalapau Highway is also a two-lane roadway. The intersection of Kaumalapau Highway and the airport access road is an unsignalized intersection. Traffic levels are fairly low and there are no traffic problems in the area.

b. Potential Impacts and Mitigation Measures

Short-term construction activities associated with the project will involve the use of heavy equipment (i.e. bulldozers, graders, dump trucks, compaction rollers, etc.) for the proposed earthwork. Traffic may be temporarily impacted during mobilization and demobilization activities.

The proposed project is not anticipated to generate additional vehicular traffic that will affect traffic or levels of service at or near the airport and Kaumalapau Highway. Miki Road and Kaupili Road may be used as access routes for construction vehicles.

The large heavy equipment to be used for the project could obstruct airplane landings and take-offs if they are in the runway safety area. To prevent any chance of obstruction from occurring, the construction schedule will be coordinated with flight schedules to ensure equipment does not interfere with flight operations.

2. Water System

a. Existing Conditions

The water system for Lanai is owned and operated by Lanai Water Company. The Lanai Airport water system is part of the domestic water supply system for Lanai City. Potable water service to the airport is supplied by Windward Well 6 and Leeward Well 8. Water is transmitted to the airport through an existing 6-inch waterline along Kaumalapau Highway. A 2.5-inch waterline connects with the 6-inch waterline and runs along the airport access road to a central meter and is distributed to serve the various airport facilities. The fire storage is supplied by the fresh water (non-treated) Palawai irrigation grid fed by Well Nos. 2 and 4 and the Hii Tank via a 10-inch main which connects to a 120,000 gallon steel water tank located to the northeast of the terminal building.

b. Potential Impacts and Mitigation Measures

Short-term use of potable water from the water system will be required for dust control and irrigation. Non-potable water will be utilized for these activities. Water usage will be temporary and will cease after the completion of the project.

3. Wastewater System

a. Existing Conditions

The proposed project will not create additional long-term demands on the existing wastewater infrastructure. It is anticipated that up to 12 workers will be hired to construct the proposed improvements.

b. Potential Impacts and Mitigation Measures

No long-term impacts to wastewater facilities are anticipated. Wastewater generated during construction by work crews is expected to be handled through the use of portable sanitary toilets or by the restroom facilities located at the airport. The use, operation and maintenance of portable sanitary toilets will be in accordance with applicable regulations of the State and County of Maui.

4. Drainage

a. Existing Conditions

The airport lands lie on a relatively flat ridge where the surrounding terrains slope away from the subject property in a westerly direction towards Kaunalapau Gulch.

b. Potential Impacts and Mitigation Measures

The proposed grading activities are not expected to significantly alter the drainage patterns of the airport facility. The work does not include new impervious areas therefore there will be no increase in storm water runoff. The proposed improvements are not anticipated to adversely impact adjacent and downstream properties.

5. Electrical and Communication Systems

a. Existing Conditions

Electrical, telephone, and CATV services to the Lanai Airport are provided by Maui Electric Company (MECO), Hawaiian Telcom, and Time Warner Cable TV, respectively.

The existing electrical distribution system at the Lanai Airport is a State owned system. The telephone and CATV services are routed in the same underground duct lines as MECO's service.

b. Potential Impacts and Mitigation Measures

No utilities are expected to be impacted during the proposed project. No mitigation measures are anticipated and none are proposed.

6. Housing and Economic Considerations

a. Existing Conditions

The proposed project is anticipated to have a beneficial impact on the economy. On a short-term basis, the project will support construction and construction-related employment. Assuming that the workers will come from other islands, the project will have an impact on the local economy during the period of construction in the form of housing and living expenses.

b. Potential Impacts and Mitigation Measures

The proposed project will not result in a long-term increase in the Island’s population. As such, the project is not anticipated to have an adverse impact upon demographic parameters.

Chapter 3 Relationship to Land Use Plans, Policies, and Controls

3. A. State Land Use Districts

The State Land Use Commission classifies all lands in the State of Hawaiʻi into one of four land use designations: Urban, Rural, Agricultural and Conservation. According to HRS, Chapter 205, State Land Use Law:

“Chapter 205, HRS, Districting and classification of lands:”

“(a) There shall be four major land use districts in which all lands in the State shall be placed: urban, rural, agricultural and conservation. The land use commission shall group contiguous land areas suitable for inclusion in one of these four major districts. The commission shall set standards for determining the boundaries of each district provided that:”

“(1) In the establishment of boundaries of urban districts those lands that are now in urban use and a sufficient reserve area for foreseeable urban growth shall be included;”

“In establishing the boundaries of the districts in each count, the commission shall give consideration to the master plan or general plan of the county.”

(b) Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.

The proposed action involves the use of land within the urban district. The project involving the runway safety area improvements in support of the operations of the Lānaʻi Airport is consistent with this designation.

3. B. Maui Island Plan

The Maui Island Plan states as its vision: “Maui Island will be environmentally, economically and culturally sustainable with clean, safe, and livable communities and small towns that will protect and perpetuate a pono lifestyle for the future.”

Core Values

According to the Maui Island Plan, the following values will be implemented to achieve the island’s vision:

- A. Responsible stewardship applying sound natural resource management practices;
- B. Respect and protect our heritage, traditions, and multi-cultural resources;
- C. Plan and build communities that include a diversity of housing;
- D. Retain and enhance the unique identity and sense of place;
- E. Preserve rural and agricultural lands and encourage sustainable agriculture;
- F. Secure necessary infrastructure concurrently with future development;
- G. Support efforts that contribute to a sustainable and diverse economy for Maui;
- H. Create a political climate that seeks and responds to citizen input;
- I. Respect and dignity for every person living on Maui;
- J. Establish a sustainable transportation system that includes multiple modes, including walking, biking and mass transit, as well as automobile-based modes; and
- K. Recognize and be sensitive to land ownership issues and work towards resolution.

The following section discusses goals, objectives and policies in the Maui Island Plan that are relevant to the proposed project.

Harbors and Airports

Goal:

6.11 Maui will have harbors and airports that will efficiently, dependably and safely facilitate the movement of passengers and cargo.

Objective:

6.11.2 Upgraded airport facilities and navigation aids to serve the needs of passengers, freight movements, and general aviation.

Policies:

6.11.2. d. Work with the State and Kahului Airport users to:

b. increase infrastructure investments and improve operating procedures;

The proposed airport improvements will provide for a safer air transportation facility that meets FAA safety design standards.

3. C. Countywide Policy Plan

The Countywide Policy Plan¹ provides broad goals, objectives, policies, and implementing actions that represent the preferred direction of the County’s future. This includes: (1) a vision statement and core values for the County to the year 2030; (2) an explanation of the plan-making process; (3) a description and background information regarding Maui County today; (4) identification of guiding principles; and (5) a list of countywide goals, objectives, policies, and implementing actions related to the following core themes²:

- Protect the Natural Environment
- Preserve Local Cultures and Traditions
- Improve Education
- Strengthen Social and Healthcare Services
- Expand Housing Opportunities for Residents
- Strengthen the Local Economy
- Improve Parks and Public Facilities
- Diversify Transportation Options
- Improve Physical Infrastructure
- Promote Sustainable Land Use and Growth Management
- Strive for Good Governance

Furthermore, this Countywide Policy Plan will provide the policy framework for the development of the Maui Island Plan and the nine Community Plans³. The Community Plans are intended to reflect the unique characteristics of each Community Plan Area and enable residents and stakeholders to address challenges that are specific to their regions.

¹ County of Maui. County Wide Policy Plan. <http://www.co.maui.hi.us/index.aspx?NID=420>

² Chapter 2.80B, Maui County Code, requires at a minimum that the Countywide Policy Plan address “population, land use, the environment, the economy, and housing.”

³ The nine Community Plan Areas are Hana, Kahoʻolawe, Lanaʻi, Molokaʻi, Kihei-Makena, Makawao-Pukalani-Kula, Paʻia-Haʻiku, Wailuku-Kahului, and West Maui.

H. Diversify Transportation Options

Goal: Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.

Objective:

- 3. Improve opportunities for affordable, efficient, safe, and reliable air transportation.*

Policies:

- c. Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.*

The proposed project will improve opportunities for efficient, safe, and reliable air transportation. The airport improvements will ensure that the airport meets existing FAA airport safety design requirements.

3. D. Lāna‘i Community Plan

The project site is located in the Lāna‘i Community Plan region, which is one (1) of the nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of future development in the region. Land use guidelines are established by the Lanai Community Plan land use map, and as indicated, the subject property is situated within an area designated for "Airport" use. The proposed action is in keeping with the Community Plan's "Airport" use designation for the property.

The Lāna‘i Community Plan was last updated in 1998. It is currently under review and is up for amendment later this year. The Lāna‘i Community Plan sets forth goals, objectives, policies, implementing actions, and standards which identify preferred future conditions, steps to be taken to achieve stated goals, and specific measures which are necessary to attain the desired goals. The proposed action is in consonance with the following provisions of the Community Plan:

Physical Infrastructure

Provide adequate, reliable and well-designed public infrastructure systems in a timely fashion to meet the social, economic and public safety and welfare needs of the Lāna‘i community.

Transportation

Objectives and Policies:

8. Ensure that planning, design, operation of, and access to airports and harbor facilities address the needs of the island's residents.

The proposed project supports the community plan’s objective to ensure the safe operation of the Lāna‘i airport facility.

3. E. Maui County Zoning

As designated by Maui County zoning code, the subject property is located in the “Airport District”.

The proposed improvement is consistent with the existing zoning designation.

3. F. Coastal Zone Management Objectives and Policies

All land and water use activities in the state must comply with HRS, Chapter 205A, Hawai‘i Coastal Zone Law. The State of Hawai‘i designates the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of HRS, Chapter 205(A)-2, as amended, for the areas from the shoreline to the seaward limit of the State’s jurisdiction, and any other area which a lead agency may designate for the purpose of administering the CZMP. The following is an assessment of the project with respect to the CZMP objectives and policies set forth in Section 205(A)-2.

Although the project site is not located within the Special Management Area (SMA), as set forth in Chapter 205A, HRS, this section addresses the project's relationship to applicable coastal zone management considerations.

1. Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

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

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

Response:

Recreational and shoreline facilities and public access to the shoreline will not be adversely affected by the project, as the project is approximately 2 miles from the nearest shoreline. The project will take place entirely within the boundaries of the airport facility, which does not provide formal recreational opportunities. The proposed improvement is not a direct generator of, nor does it create a demand for, regional recreational resources.

2. Historical/Cultural Resources

Objective:

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

Policies:

- a. Identify and analyze significant archeological resources;
- b. Maximize information retention through preservation of remains and artifacts or salvage operations; and
- c. Support state goals for protection, restoration, interpretation, and display of historic resources.

Response:

There are no archaeological or cultural resources known to be present within the immediate project site, as much of the project vicinity had been previously disturbed during prior intensive agricultural activities in the area as well as during the construction of the airport facility. However, in accordance with HRS, Chapter 6E, and the requirements of the SHPD, DLNR, should any historic resources, including human skeletal and significant cultural remains, be identified during the construction of the proposed project: (1) work will cease in the immediate vicinity of the find; (2) the find will be protected from any additional disturbance by the contractor; and (3) the SHPD, will be contacted immediately at (808) 692-8015 for further instructions including the conditions under which work activities may resume.

3. Scenic and Open Space Resources

Objective:

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

Policies:

- a. Identify valued scenic resources in the coastal zone management area;
- b. Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline; c. Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

- d. Encourage those developments that are not coastal dependent to locate in inland areas.

Response:

The potential for adverse visual impacts is anticipated to be minimal. The proposed project will involve work on the existing runway safety area within a surrounding area used for airport purposes. The proposed project is limited to grading activities within the existing airport property and is not expected to significantly affect existing viewplanes.

4. Coastal Ecosystem

Objective:

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

Policies:

- a. Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- b. Improve the technical basis for natural resource management;
- c. Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- d. Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- e. Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Response:

Impacts to the coastal ecosystems are not expected as a result of this project. During construction, BMPs will be employed to prevent potential pollutant (sediment) discharges into storm water runoff. These measures will be in place and functional before project activities begin and will be maintained throughout the construction period.

5. Economic Use

Objective:

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

Policies:

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

- (ii) Adverse environmental effects are minimized; and
- (iii) The development is important to the State's economy.

Response:

The proposed improvements is intended to support the existing airport facility, which provides a critical transportation service for the Lānaʻi economy. The proposed project is not dependent on the coastline and is not contrary to the objective and policies for economic use.

6. Coastal Hazards

Objective:

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies:

- a. Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- b. Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
- c. Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
- d. Prevent coastal flooding from inland projects.

Response:

The Lanai Airport is located at elevation 1,300 feet MSL and in an area of minimal flooding. The proposed project will not result in increase of storm water runoff from the airport facility. Any drainage improvements constructed as part of this project will be designed in accordance with the drainage standards of the HDOT, to ensure that the project will not adversely affect downstream and adjoining properties from the effects of flooding and erosion. To mitigate for other natural hazards, the proposed improvements will be designed to meet current grading design standards.

7. Managing Development

Objective:

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

Policies:

- a. Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- b. Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- c. Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response:

The proposed project conforms to all State and County of Hawaiʻi land use regulations. A comprehensive list of permits that may be required is provided in Section 8, Permits and Approvals That May Be Required. While the proposed project site is under jurisdiction of the CZMA, no coastal resources will be adversely affected.

8. Public Participation

Objective:

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

Policies:

- a. Promote public involvement in coastal zone management processes;
- b. Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
- c. Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response:

Although the proposed project does not involve development within the coastal area, the provision for public participation will be provided through the environmental review process as required in HRS, Chapter 343. Public comments will be received during the public comment period associated with the filing of the Draft Environmental Assessment. In addition, environmental permit applications filed for the subject project will be subject to governmental agency and public review as required under law.

9. Beach Protection

Objective:

Protect beaches for public use and recreation.

Policies:

- a. Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
- b. Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
- c. Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response:

The proposed project neither involves nor requires the direct use of beaches or shoreline resources.

10. Marine Resources

Objective:

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

Policies:

- a. Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- b. Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
- c. Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- d. Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- e. Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: Coastal ecosystems will not be affected by the proposed project. During construction, BMPs will be employed to prevent sediment from entering State waters. These erosion and sediment control measures will be in place and functional before project activities begin and will be continually maintained throughout the construction period.

Chapter 4 Significance Criteria

In accordance with the provisions set forth in HRS, Chapter 343, and the significance criteria in HAR, Chapter 11-200-12, this Draft Environmental Assessment has preliminarily determined that the project will have no significant adverse impact to air and water quality, existing utilities, noise, archaeological or cultural sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area.

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

The proposed project is not anticipated to adversely impact any natural or cultural resources. The project site is located on an existing airport facility that has been previously disturbed by intensive agricultural activities prior to the construction of the airport. Any potential archaeological or cultural remains that may have once existed at the site are believed to have been destroyed during prior development activities. No significant archaeological or cultural sites are therefore anticipated to be discovered. However, in the unlikely event that any remains or artifacts are encountered, practices as previously identified in this document will be applied:

Any inadvertent finds will immediately result in the cessation of work and the immediate reporting of the find to the SHPD at (808) 243-1285 (Maui Island) or (808) 692-8015 (Main Office, Oʻahu). SHPD will furnish further instructions regarding the treatment of the find and the conditions when work may be resumed.

2. Curtails the range of beneficial uses of the environment.

The proposed project and the commitment of land resources would not curtail the range of beneficial uses of the environment. The proposed action will be implemented on lands dedicated for airport use.

3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

The proposed project is consistent with the environmental policies, goals and guidelines as delineated in HRS, Chapter 344, and as documented in this Environmental Assessment.

4. Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.

The proposed project has been assessed for potential social, visual, and environmental impacts in accordance with the requirements of HRS, Chapter 343, and HAR, Chapter 11-200. With implementation of the mitigation measures as identified in this document, no substantial impacts to the economic welfare, social welfare, and cultural practices are expected to result.

5. Substantially affects public health.

The proposed project will be developed in accordance with Federal, State, and County of Maui, rules and regulations governing public safety and health. Potential sources of adverse impacts have been identified and appropriate mitigative measures developed. The primary public health concerns are anticipated to involve air, water, noise, and traffic impacts. However, it is expected that these impacts will be either minimized or brought to negligible levels by the appropriate use of the mitigation measures described in this document.

6. Involves substantial secondary impacts, such as population changes or effects on public facilities.

The proposed project will not, by itself, stimulate unexpected changes in population. No adverse impacts to the domestic water and wastewater capacities and facilities are anticipated. Onsite runoff will be accommodated by existing drainage patterns. The project is not expected to significantly impact other public services such as fire, health care, and emergency medical services. No adverse impacts upon educational or recreational services are anticipated. The proposed improvement is limited to grading activities within an existing airport facility; once construction activities are complete, all conditions will return to pre-construction conditions.

7. Involves a substantial degradation of environmental quality.

The proposed project will be developed in accordance with the environmental policies of HRS, Chapter 343. The analysis provided in this Environmental Assessment indicates that no environmental degradation is anticipated or expected.

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

The proposed project is designed to specifically address the need for safety improvements to the existing runway safety areas and does not involve a commitment for other, larger actions. The potential for cumulative impacts associate with the proposed project are not anticipated or expected.

9. Substantially affects a rare, threatened, or endangered species, or its habitat.

There are no rare, threatened or endangered species of flora, fauna or avifauna that will be adversely affected by the proposed project.

10. Detrimentially affects air or water quality or ambient noise levels.

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling of exposed areas, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related activities, however the project site is located away from residential or noise-sensitive areas. Water quality is not expected to be affected. In the long term, the proposed project is not anticipated to have a significant impact on air and water quality.

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.

The proposed project is not located within and would not affect environmentally sensitive areas. The project area is not subject to flooding or tsunami inundation. Soils of the project area are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project area.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.

The project area is not identified as a scenic vista or viewplane. The proposed project is limited to grading activities within the existing airport property and is not expected to significantly affect existing scenic corridors and coastal, scenic and open space resources.

13. Requires substantial energy consumption.

The proposed project will require use of energy primarily in the form of petroleum-based fuels for construction vehicles and equipment. Electricity will also be required and may be provided by a generator or by direct connection to outlets provided on-site. Other uses of energy will be in the form of labor to complete the project. Upon completion of the project, there will be no further requirement for the use of construction related energy. Maintenance of the project site as part of the airport facility is not expected to result in substantial use of energy resources, beyond existing use.

Based on the review and analysis of the above factors, it has been preliminarily determined that a HRS, Chapter 343, Environmental Impact Statement (EIS) will not be required, and that an anticipated Finding of No Significant Impact (FONSI) should be issued for this project.

Chapter 5 List of Permits and Approvals

State of Hawai‘i

- Department of Health, Clean Water Branch
National Pollutant Discharge Elimination System (NPDES) Permit:
Notice of Intent (NOI) Form C: Storm Water Associated with Construction Activities
- Department of Transportation, Airports Division
Plan review and approval
- Office of Planning-CZM Office
CZM Federal Consistency Review

Federal

- National Historic Preservation Act, Section 106 Consultation
- Endangered Species Act, Section 7 Consultation

Chapter 6 Agencies and Organizations to be Consulted for the Environmental Assessment

The following agencies, organizations, and individuals will be contacted during the Chapter 343, HRS, environmental review process to disclose the environmental conditions of the site, the proposed undertaking, and the potential impacts and mitigation measures that will be applied to ensure against adverse impacts.

State Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Honolulu, Hawaiʻi 96850-0001

District Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
70 Hookele Street, Suite 202
Kahului, Hawaiʻi 96732

Airports District Office
U.S. Department of Transportation
Federal Aviation Administration
P. O. Box 50244
300 Ala Moana Blvd., Room 7-126
Honolulu, Hawaiʻi 96813

Pacific Islands Manager
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122,
Box 50088
Honolulu, Hawaiʻi 96813

State Comptroller
State of Hawaiʻi
Department of Accounting and General Services
1151 Punchbowl Street, #426
Honolulu, Hawaiʻi 96813

Chairperson
State of Hawaiʻi
Department of Agriculture
1428 South King Street
Honolulu, Hawaiʻi 96814-2512

Director
State of Hawaiʻi
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaiʻi 96804

Superintendent
State of Hawaiʻi
Department of Education
P.O. Box 2360
Honolulu, Hawaiʻi 96804

Chairperson
State of Hawaiʻi
Department of Hawaiian Home Lands
P. O. Box 1879
Honolulu, Hawaiʻi 96805

Director
State of Hawaiʻi
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaiʻi 96814

Chief
Clean Water Branch
State of Hawaiʻi - Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaiʻi 96814

Program Chief
District Environmental Health
State of Hawaiʻi
Department of Health
54 High Street
Wailuku, Hawaiʻi 96793

William Aila, Jr., Chairperson
State of Hawaiʻi
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaiʻi 96809

Dr. Puaalaokalani Aiu, Administrator
State of Hawaiʻi
Dept. of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaiʻi 96707

Glenn Okimoto, Director
State of Hawaiʻi
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaiʻi 96813
cc: Ferdinand Cajigal, Maui District Engineer

Director
State of Hawaiʻi
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaiʻi 96813

Chief Executive Officer
State of Hawaiʻi
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaiʻi 96813

Director
State of Hawaiʻi
Office of Planning
P. O. Box 2359
Honolulu, Hawaiʻi 96804

Director
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawaiʻi 96793

Administrator
Maui Civil Defense Agency
200 South High Street
Wailuku, Hawaiʻi 96793

Fire Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaiʻi 96732

Director
County of Maui
Department of Housing and Human Concerns
One Main Plaza
2200 Main Street, Suite 546
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Parks and Recreation
700 Halia Nako Street, Unit 2
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaiʻi 96793

Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, Hawaiʻi 96793

Director
County of Maui
**Department of Environmental
Management**
One Main Plaza
2200 Main Street, Suite 175
Wailuku, Hawai‘i 96793

Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawai‘i 96793

Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawai‘i 96793

Council Chair
Maui County Council
200 South High Street
Wailuku, Hawai‘i 96793

Hawaiian Telcom
60 South Church Street
Wailuku, Hawai‘i 96793

Manager
Customer Operations
Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawai‘i 96733

References

Federal Emergency Management Agency. 2010. “Tsunami.”

<http://www.fema.gov/hazard/tsunami/index.shtm>

Land Classification Systems and Agricultural Land Use Planning in Hawai‘i.

<http://www.hawaii.stateassessment.info/library/chillingworthhigiclandclassificationsystems-091030225434-phpapp01.pdf>

U.S. Soil Conservation Service, December 1973. Soil Survey of Islands of Kaua‘i, O‘ahu, Maui, Moloka‘i, and Lāna‘i. State of Hawai‘i.

State of Hawaii, Department of Transportation – Airports Division. 2009. Final Environmental Assessment. Proposed Aircraft Rescue Fire Fighting Station, Fueling Facility and Hangar at Lanai Airport.

APPENDIX A

Biological surveys for Lānaʻi Airport safety zone improvements, Island of Lānaʻi

February 24, 2011 (Rev: April 1, 2011)

AECOS No. 1257

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Introduction

This report describes results of vertebrate and botanical field surveys for an Environmental Assessment (EA) of proposed runway safety area improvements at the Lānaʻi Airport on the Island of Lanaʻi (Fig. 1). Planned improvements will involve grading of areas surrounding the existing runway outside of the security fence (Fig. 2). Improvements to the Airport Access Road at the intersection with Kaunalapau Highway are also anticipated.

Methods

The project site surrounding the existing Lānaʻi Airport was visited on January 25-26, 2011 and surveyed for botanical and vertebrate resources. The botanical survey involved walking over all accessible areas of the property outside the airport security fence and noting the names and relative abundance of all ferns, fern allies, and flowering plants growing there. Field notes were translated into a flora listing. For the most part, plant names follow *Manual of the Flowering Plants of Hawaiʻi* (Wagner et al., 1990, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for crop and ornamental plants.

Birds utilizing the area were surveyed at ten count stations spaced approximately equidistant from each other within the study site. Six-minute point counts were made at each station. Stations were each counted once. Field

¹ Rana Biological Consulting, Inc., Kailua-Kona, Hawaiʻi.

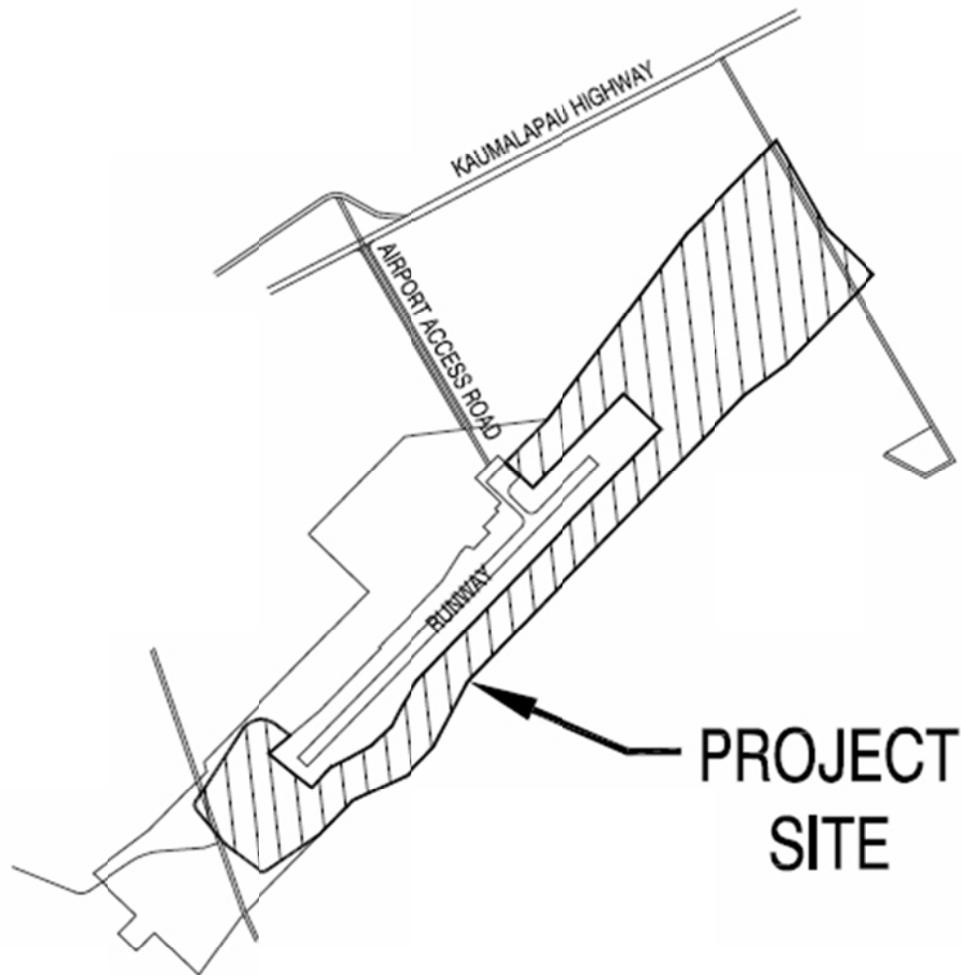


Figure 2. Project site (survey area) in relation to existing runway at Lāna'i Airport.

observations were made with the aid of Leica 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated during the early morning hours, the peak of daily bird activity. Time not spent counting stations was used to search the rest of the site for species and habitats not detected during count sessions.

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Lāna'i are alien species, and most are ubiquitous. The

survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate mammalian species observed and heard within the project area.

Avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 51st supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010). Mammal scientific names follow Tomich (1986). Place names follow *Place Names of Hawaii* (Pukui et al., 1974) and USGS topographic maps.

Results

The project site surrounds the existing airfield runway on all but 2/3 of the western side (Fig. 2), extending away from the ends of the runway to field access roads to the northeast and southwest. A security access road lies outside the security fence in most of this area. The land slopes gently from northeast to west and southwest, being elevated above the runway as a hill on the southeast. The runway is supported on fill at its southwest end, where the steepest slopes occur. The land is rather featureless except for field roads indicating use of the land for pasture; there is no evidence that commercial growing of pineapple (*Ananas comosus* cultivars) occurred in this area.

Vegetation

The project site is mostly covered with grasses and very scattered shrubs (Fig. 3); trees appear on the landscape mostly southwest from the end of the runway. Although everywhere dominated by grasses—particularly Guinea grass (*Urochloa maxima*)—recent rains have encouraged a profusion of seedlings of a wide variety of forbs, only a few of which had adult plants in evidence. This situation suggests the forbs had mostly dried up and disappeared some time previous, and the seeds left behind were now responding to the natural watering. Since the survey was undertaken midway through the wet season, the abundance of these species will likely increase considerably through the remainder of the season.

The area surveyed at the intersection of the Airport Access Road and Kaumalapau Highway is a regularly mowed verge. Plants here are grasses and ruderal forbs. Because mowing can influence the species that survive and propagate, the plants here are slightly different than those dominating the safety area.



Figure 2. General aspect of vegetation and gently rolling terrain in project area north of the airport (runway just visible on horizon under arrow). Trees on horizon at far right are in the airport terminal area.

Flora

Table 1 lists all of the plant species identified by the survey. A total of 56 flowering plant species were observed in the project area. No ferns or fern allies were recorded. Of these 56 species, four (4) are considered native to the Hawaiian Islands (7.1%). These species are *'ilima* (*Sida fallax*), *'uhaloa* (*Waltheria indica*) and *koali'ai* (*Ipomoea cairica*), all generally common lowland species throughout the islands, especially in leeward areas; and *'a'ali'i* (*Dodonaea viscosa*), a shrub that is widespread in the Islands. *'Ihi'ai* (*Oxalis corniculata*) is thought to likely be an early Polynesian introduction, as may be *kūkaepua'a* and *'uhaloa*. The low number of native plants is typical for most lowland, disturbed sites in the Hawaiian Islands and reflects on past highly disturbed nature of this area where grazing by various ungulates has been a constant for over a century.

Table 1. Listing of plant species observed in the Lāna'ī Airport safety area site on Lāna'ī, January 25-26, 2011.

Species	Common name	Status	Abundance	Notes
<i>FLOWERING PLANTS</i>				
DICOTYLEDONES				
AMARANTHACEAE				
<i>Amaranthus</i> sp.		nat	R	<2>
ANACARDIACEAE				
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	nat	R	
APIACEAE				
<i>Ciclospermum leptophyllum</i> (Pers.) Sprague	fir-leaved celery	nat	R1	<3>
ASCLEPIADACEAE				
<i>Asclepias physocarpa</i> (E. Mey.) Schlechter	balloon plant	nat	AA	<2>
ASTERACEAE				
<i>Acanthospermum australe</i> (Loefl.) Kuntze	Paraguay burr	nat	R3	<1>
<i>Ageratum conyzoides</i> L.	<i>maile hohono</i>	nat	R	<2>
<i>Bidens alba</i> (L.) DC	Spanish needle	nat	U2	
<i>Bidens pilosa</i> L.	<i>kī</i>	nat	R	
<i>Calypocarpus vialis</i> Less.	---	nat	U2	<1>
<i>Conyza bonariensis</i> (L.) Cronquist	hairy horseweed	nat	U	
<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	---	nat	R	<3>
<i>Emilia fosbergii</i> Nicolson	Flora's paintbrush	nat	A	
<i>Heterotheca grandiflora</i> Nutt.	telegraph weed	nat	C	<2,3>
<i>Hypochoeris</i> cf. <i>radicata</i> L.	cat's ear	nat	R	<3>
<i>Lactuca serriola</i> L.	prickly lettuce	nat	R	<3>
Indet. Asteraceae	---	--	R	<3>
CASUARINACEAE				
<i>Casuarina equisetifolia</i> L.	ironwood	nat	R	<1>
CHENOPODIACEAE				
<i>Chenopodium carinatum</i> R. Br.	---	nat	A	
CONVOLVULACEAE				
<i>Ipomoea cairica</i> (L.) Sweet	<i>koali 'ai</i>	ind	R	
CUCURBITACEAE				
<i>Momordica charantia</i> (Jacq.) Sw.	wild bitter melon	nat	U	<2>
EUPHORBIACEAE				
<i>Chamaesyce hypericifolia</i> (L.) Millsp.	graceful spurge	nat	R	
<i>Chamaesyce hirta</i> (L.) Millsp.	garden spurge	nat	R	
FABACEAE				
<i>Acacia mearnsii</i> De Wild.	Black wattle	nat	R	
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	nat	R	
<i>Crotalaria incana</i> L.	fuzzy rattlepod	nat	U	
<i>Desmodium incanum</i> DC	Spanish clover	nat	R	
<i>Desmodium triflorum</i> (L.) DC	---	nat	R	

Table 1 (continued).

Species	Common name	Status	Abundance	Notes
FABACEAE (cont.)				
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	nat	U	
<i>Indigofera suffruticosa</i> Mill.	indigo	nat	U	
<i>Leucaena leucocephala</i> (Lam.) de Wit	<i>koa haole</i>	nat	O2	
<i>Medicago</i> cf. <i>polymorpha</i> L.	burr clover	nat	R	<1,3>
<i>Mimosa pudica</i> L.	sensitive plant	nat	U	
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine vine	nat	R	
MALVACEAE				
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	nat	R	<1>
<i>Sida ciliaris</i> L.	---	nat	R	
<i>Sida fallax</i> Walp.	<i>'ilima</i>	ind	C	<2>
<i>Sida rhombifolia</i> L.	Cuba jute	nat	R	
NYCTAGINACEAE				
<i>Boerhavia coccinea</i> Mill.	false <i>alena</i>	nat	R	<1>
OXALIDACEAE				
<i>Oxalis corniculata</i> L.	yellow wood sorrel; <i>'ihi'ai</i>	pol	R	
PLANTAGINACEAE				
<i>Plantago lanceolata</i> L.	narrow-leaved plantain	nat	AA	
PORTULACACEAE				
<i>Portulaca oleracea</i> L.	pigweed	nat	R	
PROTEACEAE				
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silk oak	nat	R	
SAPINDACEAE				
<i>Dodonaea viscosa</i> Jacq.	<i>'a'ali'i</i>	ind	O1	
SOLANACEAE				
<i>Solanum linnaeanum</i> Hepper & P. Jaeger	apple of Sodom	nat	C	
STERCULIACEAE				
<i>Waltheria indica</i> L.	<i>'uhaloa</i>	ind	O	
VERBENACEAE				
<i>Lantana camara</i> L.	lantana	nat	AA	
<i>Verbena litoralis</i> Kunth	<i>ōwī</i>	nat	R	
FLOWERING PLANTS				
MONOCOTYLEDONES				
POACEAE				
<i>Bothriochloa pertusa</i> (L.) A. Camus	pitted beardgrass	nat	C	<1>
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	nat	R	
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	nat	U	
<i>Digitaria insularis</i> (L.) Mez ex Ekman	sourgrass	nat	C1	
<i>Digitaria ciliaris</i> (Retz.) Koeler	Henry's crabgrass	nat	U	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	nat	R	
<i>Melinis repens</i> (Willd.) Zizka	Natal redtop	nat	O	
<i>Saccharum officinarum</i> L.	sugar cane	nat	R	
<i>Urochloa maxima</i> (Jacq.) R. Webster	Guinea grass	nat	AA	

Table 1 (continued).

TABLE 1 LEGEND:

Status = distributional status

End = endemic; native to Hawai'i and found naturally nowhere else.

Ind = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.

Orn = Ornamental, always or a planting in this situation; or escaped ornamental.

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

Abundance = occurrence ratings for plants:

R - Rare - only one or two plants seen.

U - Uncommon - several to a dozen plants observed.

O - Occasional - More than a dozen plants seen, but encountered infrequently.

C - Common - considered an important part of the vegetation and encountered regularly.

A - Abundant - found in large numbers; may be locally dominant.

AA - Abundant and dominant - a defining species for the survey area.

Numbers (1-3) after an abundance rating for a species indicate modifications for localized abundance increases as per the following examples:

R1 - species encountered perhaps once, but several plants seen together.

O2 - a species encountered only occasionally, but seen in clusters of many..

U3 - plant uncommon in its distribution, but very numerous where encountered.

Notes:

<1> Found also or exclusively in verge at intersection.

<2> Plant potentially abundant; present as seedlings.

<3> Plant lacking fruit or flowers; identification may be uncertain.

It is likely that some inconspicuous grasses are present in the survey area, but were missed, being not yet in flower.

Avian Survey Results

A total of 138 individual birds of 16 species, representing 14 separate families, were recorded during station counts (Table 2). Two of the species detected, Pacific Golden-Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*) are native to the Hawaiian Islands. Both of these species are indigenous migratory shorebird species. The remaining 14 species recorded are all considered to be alien to the Hawaiian Islands.

Avian diversity and densities were in keeping with the habitat present on the site, and it's location. Three species—Sky Lark (*Alauda arvensis*), Northern Cardinal (*Cardinalis cardinalis*), and house Sparrow (*Passer domesticus*)—accounted for 48.5% of the total number of individual birds recorded during station counts. The most commonly recorded species was Sky Lark, which accounted for slightly more than 17% of the total number of individual birds recorded. An average of 14 birds was detected per station count.

Mammalian Survey Results

Two mammalian species were detected during the course of this survey. Seven Axis deer (*Axis axis*) were seen within the project site. Additionally, we encountered the skeletal remains of two other deer. Tracks, scat and sign of

both deer and dog (*Canis f. familiaris*) were encountered at numerous locations within the site. One dog was heard barking outside the project site.

Table 2. Avian species detected around Lāna'i Airport, January 2011.

Common Name	Scientific Name	ST	RA
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Grey Francolin	<i>Francolinus pondicerinaus</i>	A	1.50
Ring-necked Pheasant	<i>Phasianus colchicus</i>	A	0.40
Meleagridinae - Turkeys			
Wild Turkey	<i>Meleagris gallopavo</i>	A	0.20
CICONIIFORMES			
ARDEIDAE - Herons, Bitterns & Allies			
Cattle Egret	<i>Bubulcus ibis</i>	A	0.30
CHARADRIIFORMES			
CHARADRIIDAE - Lapwings & Plovers			
Charadriinae - Plovers			
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM	0.80
SCOLOPACIDAE - Sandpipers, Phalaropes & Allies			
Scolopacinae - Sandpipers & Allies			
Ruddy Turnstone	<i>Arenaria interpres</i>	IM	0.10
COLUMBIFORMES			
COLUMBIDAE – Pigeons & Doves			
Spotted Dove	<i>Streptopelia chinensis</i>	A	0.10
Zebra Dove	<i>Geopelia striata</i>	A	0.50
PASSERIFORMES			
ALAUDIDAE - Larks			
Sky Lark	<i>Alauda arvensis</i>	A	2.40
CETTIIDAE - Cettia Warblers & Allies			
Japanese Bush-Warbler	<i>Cettia diphone</i>	A	1.20
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	0.50
MIMIDAE - Mockingbirds & Thrashers			
Northern Mockingbird	<i>Mimus polyglottos</i>	A	0.40

Table 2 (continued).

Common Name	Scientific Name	ST	RA
	STURNIDAE – Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	0.20
	CARDINALIDAE – Cardinals Saltators & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	2.30
	FRINGILLIDAE – Fringilline And Cardueline Finches & Allies Carduelinae – Carduline Finches		
House Finch	<i>Carpodacus mexicanus</i>	A	0.90
	PASSERIDAE - Old World Sparrows		
House Sparrow	<i>Passer domesticus</i>	A	2.00

Key to Table 2.

- ST Status
 A Alien species – Introduced to Hawai‘i by humans, and now established in the wild
 IM Indigenous Migratory species – native migratory species does not breed in Hawai‘i
 RA Relative Abundance: Number of birds detected divided by the number of count stations
 (10)

Discussion

Botanical Resources

No plant species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai‘i endangered species programs (DLNR 1998, USFWS 2005a, b, 2011) were recorded in the survey area. Although some native plant species are present, these are common species that can be expected to re-establish following site grading. Trees are generally absent from the site; the few present are non-native and widely scattered to the southwest (Fig. 4). In conclusion, it is not expected that grading of the proposed project site will result in long-term deleterious impacts to any plant species currently listed as endangered, threatened, proposed for listing under ESA, or considered an important botanical resource.

Avian Resources

The findings of the avian survey are consistent with the location of the property, and the habitats present on the site. Two of the 16 avian species detected during the course of this survey: Pacific Golden- Plover and Ruddy Turnstone,



Figure 4. Shrubby growth just south of the runway. “Hill” in background on right is the berm supporting the south end of the runway. Shrubs here are mostly ‘a‘ali‘i and lantana (in flower).

are native to the Hawaiian Islands. Both of these species are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawai‘i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai‘i for the trip back to the Arctic in late April or the very early part of May each year. The remaining 14 avian species detected during this survey are all considered to be alien to the Hawaiian Islands (Table 2). No avian species protected or proposed for protection under either the federal or State of Hawai‘i endangered species programs were detected in the project area during the course of this survey (DLNR 1998, USFWS 2005a, b, 2011).

Hawaiian Petrel - Although not detected during this survey, Hawaiian Petrel (*Pterodroma sandwichensis*) likely over-fly the airport between April and the end of November each year as there is a colony of this endangered species on Lāna‘i (Simons et al., 1998). The petrel is listed as endangered under both federal and State of Hawai‘i endangered species statutes. The primary cause of mortality in Hawaiian Petrels is thought to be predation by alien mammals at

the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered to be the second most significant cause of mortality of these seabirds in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1994, 1998; Podolsky et al., 1998; Ainley et al., 2001). There are no nesting colonies, nor appropriate nesting habitat for Hawaiian Petrels within, or close to the Lāna'i airport.

The principal potential impact that the proposed action poses to Hawaiian Petrels is the increased threat that birds will be downed after becoming disoriented by outdoor lighting associated with possible night-time construction activity, and following build-out with exterior lighting which may be installed as part of this action.

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitat currently present on the site. Both mammalian species detected during the course of this survey are alien to the Hawaiian Islands. Although no rodents were detected during the course of this survey, it is likely that three of the four established alien *muridae* found on Lāna'i, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), European house mouse (*Mus musculus domesticus*) use various resources found within the general project area. No mammalian species protected or proposed for protection under either the federal or state endangered species programs were detected during the course of this survey (DLNR, 1998; USFWS, 2005a, 2005b, 2011).

Critical Habitat

There is no federally delineated Critical Habitat on or incorporating the site or adjacent to the property. Thus the proposed safety improvements will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under state law.

Recommendations

- If nighttime work will be required in conjunction with the construction of the project, it is recommended that lights be shielded to reduce the potential for interactions of nocturnally flying Hawaiian Petrels with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).

- It is also recommended that if there is to be exterior lighting associated with the operation of the improved safety area or roadway improvements at the Lāna'i airport that these be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).

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