U.S. Fish & Wildlife Service

Hanalei *National Wildlife Refuge*

Hanalei Valley Viewpoint Environmental Assessment

May 2019

Hanalei National Wildlife Refuge

Hanalei Valley Viewpoint

at

Hanalei National Wildlife Refuge

Environmental Assessment

May 2019

Prepared by the

U.S. Department of the Interior

U.S. Fish and Wildlife Service - Pacific Region

911 NE 11th Avenue

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and

Hanalei National Wildlife Refuge

Kauai National Wildlife Refuge Complex

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ABBREVIATIONS

Abbreviation	Full Phrase
2003 EA	Final Environmental Assessment and Finding of No Significant Impact for the Hanalei Valley/Hanalei National Wildlife Refuge Scenic Stop
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AFONSI	Anticipated Finding of No Significant Impact
APE	Area of Potential Effect
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CSH	Cultural Surveys Hawaii, Inc.
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act of 1972
DLNR	Department of Land and Natural Resources
DOFAW	Department of Land and Natural Resources, Division of Forestry and Wildlife
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
ft^2	Square foot (or feet)
GHG	Greenhouse Gas
HAR	Hawaii Administrative Rules
HDOT	Hawaii Department of Transportation Highways Division
HEPA	Hawaii Environmental Policy Act

Abbreviation	Full Phrase
HNWRAHD	Hanalei National Wildlife Refuge Historic and Archaeological District
HRS	Hawaii Revised Statutes
LOS	Level of Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969
NOx	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
NWRS	National Wildlife Refuge System
OHA	Office of Hawaiian Affairs
ORAR	Outdoor Recreation Access Routes
PM2.5	Fine Particulate Matter less than 2.5 micrometers
RCRA	Resource Conservation and Recovery Act of 1980
Refuge System	National Wildlife Refuge System
SDOH	State of Hawaii Department of Health
SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
SEA	Supplemental Environmental Assessment
Service or USFWS	U.S. Fish and Wildlife Service
SMA	Shoreline Management Area
SO	Secretarial Order
SO_2	Sulfur Dioxide
SUP	Special Use Permit

PROJECT INFORMATION

Project Name	Hanalei Valley Viewpoint at Hanalei National Wildlife Refuge
Proposing Agency:	Hawaii Department of Transportation Aliiaimoku Building 869 Punchbowl Street Honolulu, HI 96813
Approving Agency:	Hawaii Department of Transportation Aliiaimoku Building 869 Punchbowl Street Honolulu, HI 96813
Project Location:	Hanalei National Wildlife Refuge Island of Kauai, Hawaii
Lot Tax Map Key Number:	TMK (4) 5-3-001-016
Lot Size:	5.428 acres
Existing Land Use:	Abandoned plant nursery to be operated as part of the Hanalei National Wildlife Refuge
State Land Use District:	Conservation: Resource Subzone
County Zoning Designation:	Agriculture
Project Description:	Construct the Hanalei Valley Viewpoint at Hanalei National Wildlife Refuge on approximately five acres of Refuge land off Kuhio Highway. Viewpoint includes a welcome and orientation kiosk, short trails to two viewpoints, seating, interpretive signage, and parking for vehicles and tour buses.
Anticipated Determination:	In accordance with the provisions of HRS Chapter 343, this draft EA concludes that the proposed project will not have significant adverse impacts on the environmental quality of the area and anticipates a finding of no significant impact (AFONSI).

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EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (Service) proposes to build the Hanalei Valley Viewpoint at Hanalei National Wildlife Refuge (Refuge or NWR). The proposed project would allow the Service to deliver our mission more fully to the local community and visitors to the North Shore of Kauai, connect the public with the Refuge, and provide an alternative for visitors wishing to learn more about the Refuge to minimize traffic on the narrow Ohiki Road entrance.

This draft Environmental Assessment (EA) has been prepared pursuant to requirements of the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321-4347), Hawaii Revised Statute (HRS) Chapter 343, as amended, and Hawaii Administrative rule (HAR) Title 11, Chapter 200. Compliance with HRS 343 and HAR Title 11 is initiated because of the use of state funds and a state right-of-way along Kuhio Highway (State Route 56).

The proposed Hanalei Valley Viewpoint will formalize public access to Hanalei NWR, providing views to the sensitive landscapes of the Hanalei Valley that currently have limited public access. The proposed viewpoint is intended to welcome and orient visitors to Hanalei NWR and the Hanalei Valley, present the mission of the Service and National Wildlife Refuge System (Refuge System), and the purposes and management of Hanalei NWR. It would also provide educational and interpretive opportunities and an excellent location for photographing and enjoying views of the Hanalei Valley, Hanalei NWR, and Hanalei Bay.

The proposed viewpoint would be constructed on land to be owned by the Service that is within a Conservation District, located along the Kuhio Highway (State Route 56) approximately 1/10th of a mile east from the intersection of Kuhio Highway (State Route 56) and Ka Haku Road (the main entrance to Princeville). No portion of the site is in the shoreline management area as defined within HRS Chapter 205A.

The viewpoint project was originally proposed in 2003 through a public-private partnership involving the State of Hawaii Department of Transportation Highways Division (HDOT), the Federal Highway Administration (FHWA), the Princeville Corporation, and the Service, however, the project was not completed at that time. The site, conceptual facility design and operations, and anticipated impacts to the human environment were analyzed in the June 2003 Final Environmental Assessment and Finding of No Significant Impact for the Hanalei Valley/Hanalei National Wildlife Refuge Scenic Stop (2003 EA) (HDOT and FHWA 2003). A Finding of No Significant Impact (FONSI) was signed selecting both the location for the new viewpoint and the facility design elements which were to be used in developing the final design of the new viewpoint (HDOT and FHWA 2003). Final design was delayed until the proposed project was reinitiated in 2016.

The proposed viewpoint would function independently of the existing overlook, which is located just southwest of the main entrance to the Princeville shopping center. The existing overlook is primarily under jurisdiction of HDOT and neither the Service nor HDOT are proposing changes.

Constructing the new viewpoint would require clearing approximately 1.5 acres of an abandoned plant nursery that is overrun with non-native species and nursery debris. Approximately 0.5 acres would be paved for parking and approximately 0.1 acres would be paved for pedestrian trails. The remaining area would be landscaped and seeded to prevent potential erosion.

The viewpoint would serve to welcome and orient visitors to Hanalei Valley and Hanalei NWR. The location would provide safe access to and from Kuhio Highway, an improved visitor experience with short trails, lookouts, an orientation kiosk, and interpretive signage. The viewpoint would include the following program elements:

- Entrance sign and security gate
- Viewpoints for the Hanalei Valley, River, and Bay
- Welcome and orientation area
- Visitor contact area
- Low-impact development of on-site stormwater management
- Interpretive and educational displays
- Screening and buffering from adjacent land uses
- Safe site access
- Landscaping with native and beneficial non-native plants
- Universal accessibility
- Perimeter fence
- Vehicle and tour bus parking
- Possible portable restrooms or vault toilets depending on funding

The Service intends to apply to the Department of Land and Natural Resources (DLNR) for a Conservation District Use Permit (i) to construct a new viewpoint of the Hanalei Valley and Hanalei NWR in the Conservation District portion of Lot 27 under HAR §§13-5-24(c) R-7 and 13-5-41 and (ii) to remove invasive species and plant native and endemic plants and trees in the project site pursuant to HAR §13-5-22(b) P-4 (B-1), HAR §13-5-22(b) P-13 (B-2) and HAR §13-5-22(b) P-11 (B-1) (collectively, the "proposed project"). As part of the approval process for the new viewpoint, HAR §13-5-31(a) requires submission of an HRS Chapter 343 draft EA. HDOT is the state's proposing and approving agency due to partial funding of the project and use of Kuhio Highway right-of-way.

The approving agency will issue its determination of significance related to the 13 administrative criteria for significant impacts described in HAR §§ 11-200-12 in a notice of determination letter to the Office of Environmental Quality Control (OEQC). In accordance with the provisions of HRS Chapter 343, this draft EA concludes that the proposed project will not have significant adverse impacts on the environmental quality of the area. The key elements of this finding are as follows:

Consistency with State of Hawaii Environmental Policy: The project is consistent with the goals of Hawaii environmental policy. The project establishes a new viewpoint for public recreational and educational use. The viewpoint and interpretive displays would enrich the understanding of the ecological systems and natural resources important to the people of Hawaii.

Historic and Cultural Sites: The proposed project would have no impact on historic or cultural sites. The cultural resources survey conducted for the 2003 EA concluded that there was no sign of surface archaeological sites and no pre-contact land alteration anywhere in the project area (Cultural Surveys Hawaii, Inc. 2000). The State Historic Preservation Officer (SHPO) concurred with a finding of "*no adverse effect*" on March 1, 2019. Interpretive signage at the proposed viewpoint would provide information on the cultural and natural history of the valley.

Flora and Fauna: The project would clear approximately 1.5 acres of an abandoned plant nursery overrun with non-native species. Any restorative landscaping would include only native and beneficial non-native plants. The opeapea (Hawaiian hoary bat), an endangered species, is known to roost and forage in the vegetation along the Hanalei Valley ridgeline. To minimize impacts to the

Hawaiian hoary bat, site clearing would be timed to avoid disturbance during the bat-birthing and pup-rearing season (June 1 through September 15). During this time, woody plants greater than 15 feet tall would not be disturbed, removed, or trimmed. There would be no direct or indirect impacts to listed waterbirds, seabirds, or plants (USFWS 2016).

Socioeconomic Environment: There would be no significant direct effect to social or economic activities at the site of the proposed viewpoint since none occur there now. The site is used for composting vegetation, but several other composting and green waste sites exist on the North Shore of Kauai. Constructing the proposed viewpoint would have a negligible to minor effect on the North Shore's socioeconomic environment. Construction would add approximately $3.3 million to the local economy as materials are purchased and a construction company is hired. Based on current visitation at the existing overlook, the estimated number of people traveling through the area that might stop along the way, and visitation to Kilauea Point NWR, the Service forecasts up to 1,000 visitors a day to the new viewpoint. The viewpoint would generate minimal economic activity because the Service is not proposing to permit commercial sales on the site; however, commercial tour operators would be required to operate under a commercial special use permit and at some point the Service could propose a modest entrance fee to the site to help pay for maintenance and operations.

Visual and Aesthetic Resources: There would be minimal impact upon visual or aesthetic resources. The proposed viewpoint would provide viewing portals with panoramic views of the Hanalei Valley, which would offer a slightly different vantage point than that offered by the existing overlook. The view would include Hanalei NWR with its taro fields against the dramatic mountain backdrop of Halelea Forest Reserve. Hanalei Town and Hanalei Bay would also be visible from the viewpoint. This view is not available at the existing overlook and the new site offers much more room to safely park and provide interpretation and environmental education. To minimize visual impacts, the viewpoints would be built on-grade and integrated into the surrounding landscape. Landscaping and retention of much of the existing vegetation along the bluff would screen the parking area from the valley floor and would provide screening of the viewpoint for residences on the valley floor.

Traffic: Construction of acceleration and deceleration lanes on Kuhio Highway would require temporary lane closures and traffic delays. No long-term delays to traffic on the highway are anticipated. Following construction of the new viewpoint and with projected increases in traffic volume that would occur regardless of the new viewpoint, Kuhio Highway is forecast to operate at an acceptable Level of Service (LOS), as would the turning movements into and out of the new viewpoint (Austin, Tsutsumi & Associates, Inc. 2018).

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CHAPTER 1. PURPOSE AND NEED FOR ACTION

1.1 Introduction

The U.S. Fish and Wildlife Service (Service) is the primary federal agency responsible for conserving and enhancing the nation's fish and wildlife populations and their habitats. Although the Service shares this responsibility with other federal, state, tribal, territorial, local, and private entities, the Service has specific trust responsibilities for migratory birds, federally listed threatened and endangered species, and certain anadromous fish and marine mammals. Service efforts over the last 100 years to protect wildlife and their habitats have resulted in a network of protected areas that form the National Wildlife Refuge System (Refuge System). This network of protected areas is the largest and most diverse of its kind in the world. Refuge System lands provide essential habitat for numerous wildlife species, wildlife-dependent recreational opportunities for the public, and a variety of benefits to local communities.

This draft Environmental Assessment (EA) has been prepared pursuant to requirements of the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321-4347), Hawaii Revised Statutes (HRS) Chapter 343, as amended, and Hawaii Administrative rule (HAR) Title 11, Chapter 200. Compliance with HRS 343 and HAR Title 11 is initiated because of the use of state funds and a state right-of-way along Kuhio Highway (State Route 56).

1.2 Background

In 2003, a new viewpoint with spectacular views of the Hanalei Valley, Hanalei Bay, and the Hanalei National Wildlife Refuge (Refuge, NWR) was proposed through a public-private partnership involving the State of Hawaii Department of Transportation Highways Division (HDOT), the Federal Highway Administration (FHWA), the Princeville Corporation, and the Service. The proposed viewpoint would be located along the Kuhio Highway approximately 1/10th of a mile east from the intersection of Kuhio Highway and Kahaku Road (the main entrance to Princeville). (See Figure 1.)

The site, conceptual facility design and operations, and anticipated impacts were analyzed in the June 2003 Final Environmental Assessment and Finding of No Significant Impact for the Hanalei Valley/ Hanalei National Wildlife Refuge Scenic Stop (2003 EA) (HDOT and FHWA 2003) which is incorporated by reference. The 2003 EA evaluated alternatives for the proposed viewpoint, including a no action alternative, and the anticipated impacts to the human environment associated with the alternatives. The 2003 EA was prepared in compliance with NEPA and the Hawaii Environmental Policy Act (HEPA) (HRS, Chapter 343; HAR Title 11). The Finding of No Significant Impact (FONSI), signed by FHWA and HDOT, selected both the location for the new viewpoint and the facility design elements, which were to be used in developing the final design of the new viewpoint. As a cooperating agency to the 2003 EA, the Service participated in scoping, development of alternatives, environmental effects analysis review, response to public comments, and finalization of the 2003 EA/ FONSI.

In 2004, the Service issued its own FONSI (USFWS 2004) for expanding the boundary of Hanalei NWR and constructing the viewpoint at the site selected by the 2003 EA/FONSI. The FONSI described why the Service believed the reasonably foreseeable impacts associated with the new viewpoint were not significant and it is also incorporated by reference. The Hanalei NWR boundary was expanded in anticipation of accepting a donation of land that would accommodate the proposed viewpoint (USFWS 2004). The donation never happened and the project stalled.

In 2016, the Service, in coordination with the County of Kauai, HDOT, and public stakeholders reinitiated the design process and completed a feasibility study to update the never-completed 2003 design (BergerABAM 2016). The feasibility study is incorporated by reference.

The feasibility study evaluated four design concepts that were provided to the public at a March 2016 meeting at Hale Halewai in Hanalei to obtain public feedback. Based on comments received, a conceptual design incorporating elements from the different concepts was developed; however, as the total budget for this project and estimated costs for the proposed concept were refined, the cost of the proposed 2016 concept was determined to far exceed the project's budget, making implementation not feasible at present and speculative into the future. This concept plan is discussed in this EA as an alternative that was considered but eliminated from detailed analysis (Section 2.3) in order to provide the public with an idea of the original design based on the comments from the March 2016 meeting. It is not evaluated in this EA because concepts that are not feasible and are speculative are not considered to be ready for NEPA analysis (Bass et al. 2001). Although the Service's preferred alternative is pared back from the 2016 conceptual design to fit within budgetary constraints, the preferred alternative preserves the opportunity for elements to be added at some future date if additional funding and support become available from partners. If such improvements were proposed in the future, the Service would complete additional NEPA analysis, including public involvement and comments.

1.3 Proposed Action

The Service proposes to implement the preferred alternative described in this EA, which would include two scenic viewpoints connected by an interpretive path, an interpretive kiosk, a 23–25 car parking lot, and toilets (funding dependent). For purposes of comparison, in the 2003 EA/FONSI, the preferred alternative included more infrastructure such as a new visitor information center, a maintenance building, and a much larger parking lot on the site.

The current proposed action would address site capacity issues at the existing overlook, which at present can only accommodate a maximum of about 10 cars in a chaotic parking and ingress/egress configuration, by providing a larger viewpoint and parking lot located off Kuhio Highway. The preferred alternative is described in Section 2.2.

1.4 Decision to be Made

Based on the analysis documented in this EA, the Service will decide whether or not to implement the preferred alternative. If the Service decides to construct the viewpoint, this EA will inform the decision about whether a FONSI can be reached. If any effects are found to be significant, an Environmental Impact Statement would be developed. Significant, as used in NEPA, requires consideration of the context, intensity, and duration of the effects. Context refers to the affected environment in which a proposed action would occur. Intensity means, or refers to, the severity or magnitude of the impact. The duration of an effect has to do with how long the effect will persist. Direct (short-term), indirect (long-term), and cumulative effects are relevant.

1.5 Purpose and Need for the Project

The purpose of the project is to develop a Hanalei Valley Viewpoint at Hanalei NWR, which would provide residents and visitors with a quality national wildlife refuge experience that includes opportunities to learn about the natural and cultural history of the Hanalei Valley and the Refuge.

The project is needed because the existing overlook has inadequate parking, uncontrolled vehicular access, a viewing area too close to the Kuhio Highway that detracts from the visitor's experience, and inadequate space for informational displays or stationing of Refuge staff or volunteers to provide outreach and information to the public.

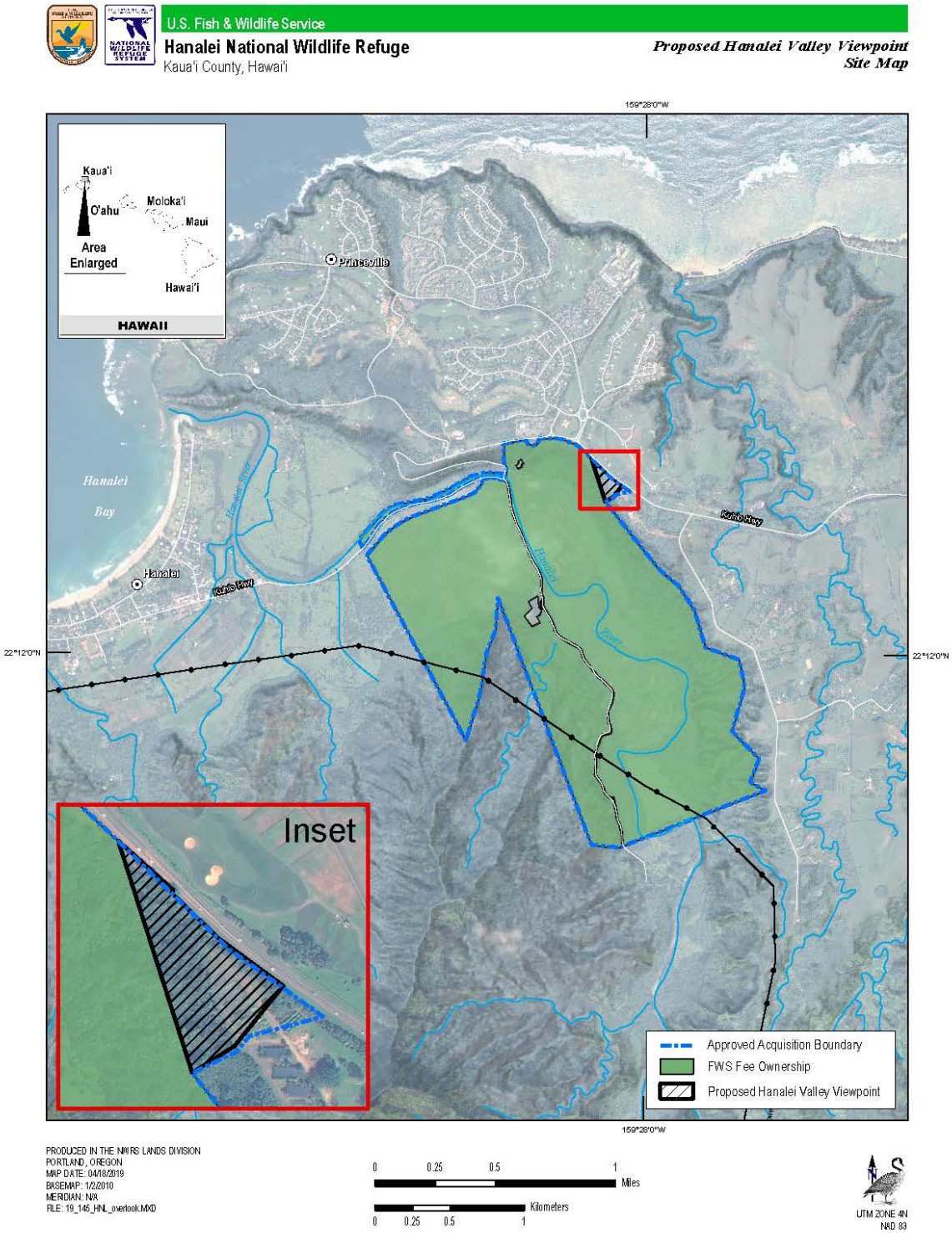

Figure 1. Proposed Hanalei Valley Viewpoint

CHAPTER 2. ALTERNATIVES

Although several conceptual designs were developed for the site, only two alternatives, the no action and the Service's preferred alternative, have been carried forward for detailed study. As described in Section 1.2, budgetary constraints have placed limitations on what can be developed at the site. A concept of what might be developed at some point in the future, should budgetary limitations be addressed, is presented as an alternative that was considered but was not forwarded for detailed study.

Only the southern portion of the existing overlook is on Hanalei NWR, with much of it on HDOT right-of-way. Any decision to modify access to the existing overlook would be made by HDOT and is outside the scope of this EA. The Service and HDOT plan no modifications to the existing overlook as part of this project.

2.1 Alternative 1: No Action

Under the no action alternative, a new viewpoint would not be constructed. The existing overlook would remain open and there would be no improvements made to the site. Conditions would remain as they are today.

2.2 Alternative 2: Hanalei Valley Viewpoint at Hanalei National Wildlife Refuge (Preferred)

Under Alternative 2, the Service would construct a new Hanalei Valley Viewpoint at Hanalei NWR on an approximately 5.4-acre parcel at the north end of Lot 27, the same site selected in the 2003 EA/FONSI and the Service's 2004 FONSI. The parcel would be subdivided from Lot 27, which is approximately 174 acres and stretches almost three miles along Hanalei Valley's eastern rim. The new 5.4-acre parcel would be bordered by Kuhio Highway to the north, private land to the east, and Hanalei Valley to the south and west. Construction of the entrance road, parking area, kiosk and viewpoints would be funded by the Service and grants from FHWA, HDOT, and Kauai County.

Alternative 2 proposes a viewpoint that would serve to welcome and orient visitors to Hanalei Valley and Hanalei NWR. The viewpoint would feature world-class scenic views of Hanalei Bay, Valley, River, and the Refuge. It would provide engaging and educational experiences for visitors of all ages and learning styles related to the Refuge's wildlife, endangered species recovery goals, cultural resources, and the history of the area. The location would provide safe access to and from Kuhio Highway, parking stalls for cars and tour buses, and a quality visitor experience with short trails, overlooks, an orientation kiosk, and interpretive signage. The viewpoint would be open from 6:00 AM to 30 minutes past sunset. The preferred alternative includes the following program elements:

Safety and Security	**Welcome and Orientation**
Perimeter fencing	Entry sign
Security gate	Parking for approximately 25 cars
Privacy wall at east property line	Short-term parking for tour buses

Regulatory signage	Welcome and orientation kiosk
Formalized ingress/egress from Kuhio Hwy	Wayfinding signage
Acceleration and deceleration lanes on Kuhio Hwy	
	Interpretation, Education, and Community
Turn lanes on Kuhio Hwy	Interpretive displays
	Gathering space for educational programs
Universal Accessibility	Short trails to two viewpoints
Two accessible parking spaces	
Walking surfaces	**Sustainability, Environment, and Viewsheds**
Views	Low-impact development
Seating	On-site sustainable stormwater management
	Landscape restoration
Visitor Amenities	Landscaping with native/non-invasive plants
Trash receptacles	Vegetative screening and buffering from adjacent land uses
Portable restrooms and enclosure (funding dependent)	

The viewpoint is intended to include primitive restroom facilities, but this element is contingent upon available funding. Construction companies bidding on the project would be asked to provide separate bids for a concrete pad and enclosure suitable for porta-potties or pre-engineered vault toilet buildings. If there is money available within the project budget, vault toilets would be included. If there is not money available within the project budget for vault toilets, the provision and service of porta-potties would be via a separate ongoing fee contract subject to operational funding.

About 1.5 acres of mostly non-native woodland and brush would be cleared. Approximately 0.5 acres would be paved for parking and approximately 0.1 acres would be paved for pedestrian trails. The remaining area would be landscaped with native and beneficial non-native plants and seeded to prevent soil erosion.

Figure 2. Hanalei Valley Viewpoint Site Plan

To facilitate safe ingress to the site, a deceleration lane would be constructed for eastbound travelers on Kuhio Highway turning right to enter the viewpoint. An acceleration lane would be constructed to facilitate a safe merge for travelers leaving the viewpoint turning right (eastbound) onto Kuhio Highway. A new left turn lane would be added for vehicular traffic traveling westbound on Kuhio Highway to enter the viewpoint. An acceleration lane would be added to provide vehicles turning left onto the highway space to accelerate before merging into westbound traffic. HDOT would maintain all improvements within the state's right-of-way.

As required in the land transfer agreement, a wire mesh perimeter fence would be installed along the highway, the site would be secured at night with an electric rolling vehicle gate with a timer and keypad, and a privacy wall with a vegetated berm would be constructed along the east property boundary to screen nearby residences. The site would not be lighted. The gate would be powered by an on-site photovoltaic panel. The parking area would be curbed or controlled with concrete wheel stops to direct foot traffic to the paved pathways. Trees and shrubs native to Kauai would be planted along Kuhio Highway to screen the viewpoint from the highway.

Interpretive themes would highlight the unique elements of the Refuge, including the Refuge's establishment purpose and role as one of the most important sites in the state providing essential life history requirements for and aiding in the recovery of five endangered water birds that occur there; the taro fields and their importance in Hawaiian culture and in providing habitat for endangered waterbirds; the importance of the Refuge as a wintering and stopover location for migratory waterfowl and shorebirds from both North America and Asia; and the Service's management efforts related to habitat needs, invasive species, plants, fish, and wildlife. Stakeholders, partner organizations, and interested community leaders have contributed to the content of interpretive panels and other materials associated with the viewpoint and have offered to continue to provide review and feedback.

Accommodations for Persons with Disabilities and Universal Accessibility

The project design complies with the requirements of the Architectural Barriers Act standards for the parking area, bus parking, toilets, and welcome/orientation plaza and kiosk. All pavement cross-slopes (slopes perpendicular to the direction of travel) would be a maximum of 2 percent. All ramps would have a maximum slope of 1:12 (vertical:horizontal). No changes in level greater than 0.5 inches would be allowed without a ramp. Changes in level between 0.25 and 0.5 inches would be beveled with a slope no greater than 1:2 (vertical:horizontal). Curb ramps would be required wherever accessible access routes cross a curb. Detectable warning tiles would be provided where pedestrian routes intersect with vehicle parking areas. The maximum running slope in this area is 4.7 percent and would not require ramps or handrails.

The pathways from the welcome/orientation plaza to the viewpoints would follow the Outdoor Recreation Access Routes (ORAR) standards. The ORAR is a continuous, unobstructed path that is intended for pedestrian use and that connects accessible elements, spaces, and facilities within viewing areas. The ORAR surface would be slip-resistant concrete paving with a minimum width of 72 inches. The maximum running slope would be 8.33 percent with a maximum segment length of 50 feet. Resting intervals of 60 inches in length will be proved between segments. Cross slopes of the ORAR would not exceed 2 percent.

Viewing areas would be provided at the two viewpoint locations. The surface of the viewing areas would be slip-resistant concrete paving with a maximum slope of 2 percent in any direction. The viewing areas exceed the minimum clear space requirements of 36 inches by 48 inches and would adjoin the ORAR. The viewing areas would be enclosed with 42-inch-tall walls that would provide fall protection if necessary.

Catch basin and drain inlet grates would have spaces no greater than 0.5-inch in all directions. If gratings have elongated openings, they would be placed so the long dimension is perpendicular to the dominant direction of travel. No gratings would be located in pedestrian areas.

Utility Relocation

A few utilities that are within the site development footprint would be relocated. Four catch basins (two on each side of Kuhio Highway), designed with wildlife considerations so they don't become attractive nuisances, three street lights located along the south side of Kuhio Highway, and two utility boxes to the south of the Kuhio Highway would be relocated in the same general area, but outside of the construction footprint. No other utilities would be impacted or require relocation due to construction activities.

Viewpoints

Two on-grade viewpoints would offer views of greater Hanalei Valley and Bay, Hanalei NWR, and the dramatic mountains of Halelea Forest Reserve. To minimize visual impacts, the viewpoints would be built on-grade and integrated into the landscape. The proposed viewpoints would be constructed of stone and concrete materials and would include seat-walls and interpretive signs.

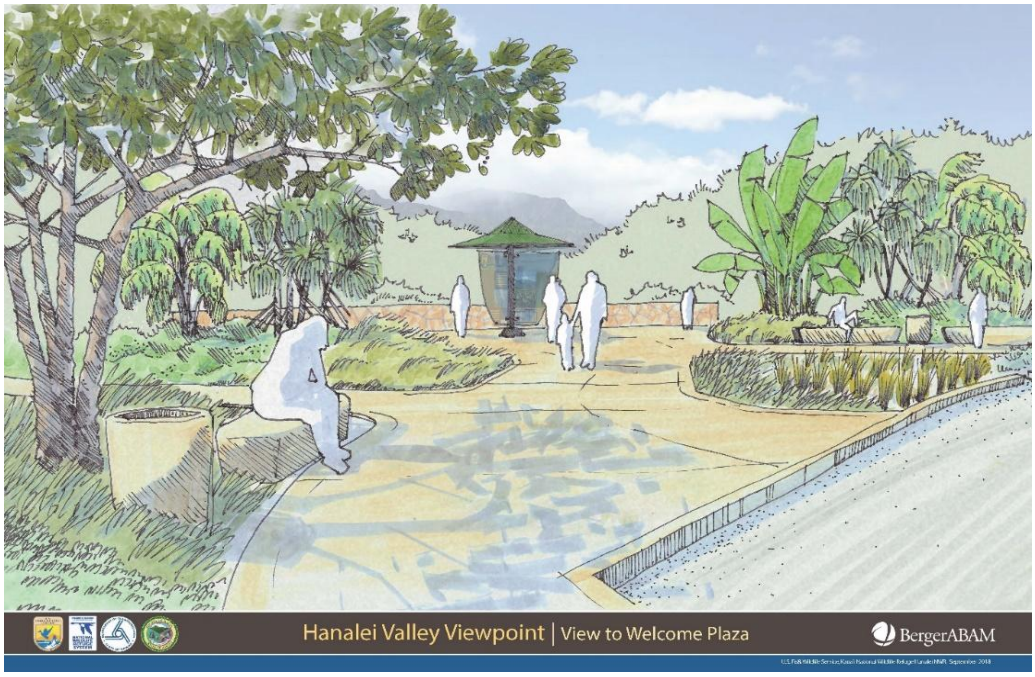

Figure 3. Hanalei Valley Viewpoint Welcome Plaza

2.3 Alternatives Considered but Eliminated from Detailed Study

The Service developed a concept for a full build-out alternative that ended up far exceeding the available project budget. The concept represents what the Service might eventually develop, but any future work is contingent on securing additional funding and partner support. Additionally, these concepts may change in the future based on visitor use demand and implementation of a North Shore shuttle program. The Service is supplying this information to provide the public with a sense for what may eventually happen at the site. Should additional funding and partner support be forthcoming, the Service would complete additional design work and would conduct additional NEPA analysis which includes public involvement and comments.

This concept would have provided additional parking, a visitor contact hale/restroom building, and could have possibly included a new multimodal trail to the existing overlook and Princeville. To help alleviate North Shore traffic and parking congestion, the concept would have allowed for the site to be used as a park-and-ride for a possible future North Shore transit shuttle. The concept would have included the following program elements, which would have been in addition to elements included in the preferred alternative:

- Visitor contact hale/restroom building
- Expanded integrated stormwater management
- Expanded parking for up to 103 vehicles
- Possible multimodal trail to existing overlook and Princeville
- Shuttle bus staging and loading area
- Site utilities (electric, water, sewage)

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CHAPTER 3. AFFECTED ENVIRONMENT

The proposed viewpoint would be constructed on the same site that was described and selected under the 2003 EA/FONSI. A brief discussion of the natural and built environments of the proposed viewpoint, site, and immediate vicinity is provided. The reader is encouraged to review the 2003 EA for more detailed discussions.

3.1 Biological Resources

Topography and Soils

The site is located along the eastern ridge of Hanalei Valley near Princeville and Hanalei town. The site is a former tree farm and landscape nursery. The 5.4-acre site is located south of the Kuhio Highway on the high bluff overlooking Hanalei NWR and is about one mile from the coastline. The top of the ridge (where the viewpoint would be) is approximately 300 feet above the valley floor. The project site has about a 4 percent grade sloping from east to west. The valley wall below the overlook is very steep, at about a 50 percent grade.

Two soils types are mapped on the site: rough, mountainous land (mapping unit rRT) and Makapili silty clay, 0 to 8 percent slope (mapping unit MeB). Rough, mountainous land is mapped along the steep slopes leading to Hanalei Valley. Makapili silty clay is mapped in the abandoned nursery portion of the site. Makapili soils consist of very deep, well-drained soils that formed in material weathered from basic igneous rock and influenced by tropospheric dust. Permeability of this soil is moderately rapid, runoff is slow, and the erosion hazard is slight. Makapili soils are on uplands and have slopes of 0 to 40 percent. Makapili silty clay is classified as a prime farmland soil. Areas mapped as rough, mountainous land are not prime farmland soils. Neither soil type is classified as a hydric (wetland) soil.

Water Features, Floodplains, and Wetlands

The site contains no natural surface water bodies, floodplains, or wetlands. The National Wetlands Inventory Map does not map any wetlands or water features on the site. Wetland surveys of the area completed for the 2003 EA found no evidence of surface water bodies, wetlands, or wetland vegetation.

The Flood Hazard Assessment Report generated through the Flood Hazard Assessment Tool of the State of Hawaii, DLNR, locates the site in Zone X. These are areas determined to be out of the 0.2 percent annual chance floodplain (i.e., a 500-year flood event). The nearest floodplain, approximately 300 feet below the site, is along the Hanalei River and is mapped as a high flood hazard risk zone (AE) subject to inundation by the 1-percent-annual-chance flood event (100-year flood). The river itself is mapped as Zone AEF, which are the floodway areas in Zone AE. The floodway is the channel of the river plus any adjacent floodplain areas that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without increasing the Base Flood Elevation. The AE zone does not extend up the steep slope to the proposed viewpoint site.

Existing stormwater flow on the viewpoint site moves from east to west, discharging to both the Kuhio Highway (north) and Hanalei Valley (south) sides of the project site. The section of Kuhio Highway fronting the site contains stormwater drainage facilities for stormwater runoff from the highway. Storm water also drains to the man-made retention pond.

Air Quality

Due to the tradewinds experienced most of the year on Kauai, as well as the low population and development on the island, air quality is not considered a problem. The Hawaii Department of Health (DOH) does not monitor air quality along the North Shore so there are no data available to determine if National Ambient Air Quality Standards are being met. The 2015 Ambient Air Monitoring Network 5-Year Assessment (DOH 2015) notes that the predominant air pollution concern on Kauai has been cruise ship emissions from Nawiliwili Harbor in Lihue. The statewide 5-year trend analysis of ambient air quality shows that the primary pollutants of concern for the state are sulfur dioxide (SO_2) and fine particulate matter less than 2.5 micrometers (PM2.5) mainly due to volcanic events. No concerns were noted for Kauai (DOH 2015).

Botanical Resources and Wildlife Use

At the time of the 2003 EA, the site was described as being mostly overgrown with introduced and alien species, with very few native Hawaiian plants present, which continues to accurately describe current conditions. Invasive species such as guava (*Psidium guajava*), haole koa (*Leucaena leucocephala*), Java plum (*Syzygium cumini*), guarumo (*Cecropia peltata*), and African tulip (*Spathodea campanulata*) were noted along with a groundcover of California grass (*Brachiaria mutica)*, guinea grass (*Megathyrsus maximus*), and Hilo grass (*Ischaemum byrone*).

A mixed forest of trees ranging in height from 25 to 30 feet is located along the bluff overlooking Hanalei Valley. The trees are primarily Java plum with scattered African tulip (*Spathodea campanulata*), guarumo, Formosan koa (*Acacia confusa*), parasol leaf tree (*Macaranga tanarius*), and hau (*Hibiscus tiliaceus*) thickets. A dense shrub layer found between the trees is composed mostly of strawberry guava (*Psidium cattleianum*), guava, Christmas berry (*Schinus terebinthifolius*), and Koster's curse (*Clidemia hirta*).

Along Kuhio Highway is a band of mowed vegetation composed of various grasses and herbaceous species. Hilo grass, Panama paspalum (*Paspalum fimbriatum*), crabgrass (*Digitaria* sp.), ricegrass (*Paspalum scrobiculatum*), spanish clover (*Desmodium icanum*), three-flowered beggarweed (*Desmondium trifolium*), and narrow-leaved plantain (*Plantago lanceolata*) are common. Wiregrass (*Eleusine indica*) and Indian dropseed (*Sporobolus diander*) are abundant near the edge of the highway.

Due to its location near Princeville and historic use as a plant nursery, the site supports mainly introduced mammal species such as feral pigs (*Sus scrofa*), black rats (*Rattus rattus*), Norway rats (*R. norvegicus*), Polynesian rats (*R. exulans*), mice (*Mus musculus*), feral cats (*Felis catus*), and domestic dogs (*Canis lupus familiaris*). Introduced amphibians to the area include cane toads (*Bufo marinus*) and greenhouse frogs (*Eleutherodactylus planirostris*).

Feral chickens or red jungle fowl (*Gallus gallas*) are numerous throughout the island of Kauai. Other invasive avian species that could be present or pass through the area include cattle egret (*Bubulcus ibis*), common myna (*Acridotheres tristis*), Java sparrow (*Padda oryzivora*), chestnut munia (*Lonchura atricapilla*), nutmeg mannikin (*Lonchura punctulata*), white-rumped shama (*Copsychus malabaricus*), zebra dove (*Geopelia striata*), northern cardinal (*Cardinalis cardinalis*), red-crested cardinal (*Paroaria coronata*), Japanese white-eye (*Zosterops japonicus*), hwamei (*Garrulax canorus*), greater necklaced laughing thrush (*Garrulax pectoralis*), and western meadowlark *(Sturnella neglecta*). Barn owl (*Tyto alba*) are known to sometimes use the area.

Special Status Plant and Animal Species

Several species listed under the federal Endangered Species Act (ESA) are known to occur near the proposed viewpoint on Hanalei NWR, although none of these species have been documented at the proposed viewpoint site. The Service identified the following species, listed under the ESA, as having the potential to occur in the vicinity of the project site: koloa maoli or Hawaiian duck (*Anas wyvilliana*), aeo or Hawaiian stilt (*Himantopus mexicanus knudseni*), alae keokeo or Hawaiian coot (also known as the Hawaiian gallinule) (*Fulica alai*), alae ula or Hawaiian moorhen (*Gallinula galeata sandvicensis*), nene or Hawaiian goose (*Branta sandvicensis*), opeapea or Hawaiian hoary bat (*Lasiurus cinereus semotus*), band-rumped storm petrel (*Oceanodroma castro*) and uau or Hawaiian petrel (*Pterodroma sandwichensis*). All of these species are listed as endangered. Ao or Newell's shearwater (*Puffinus auricularis newelli*), a threatened species, was also identified as occurring nearby during the nesting season.

No special status plant species are known to occur on lands potentially impacted by the preferred alternative. There is no designated or proposed critical habitat on the site of the proposed viewpoint.

A brief description of the listed species that may occur in the project area is provided below. Descriptions of all species except for the band-rumped storm-petrel were derived from information from the Service's Pacific Islands:Fauna webpages which can be accessed by clicking here, which were accessed on February 9, 2017. Information for the band-rumped storm-petrel was derived from the Final Rule that listed them under the ESA (Federal Register 67886).

Nēnē - Photo credit Brenda Zaun/USFWS

Nene (Hawaiian Goose; *Branta (=Neschen) sandvicensis*)

Nene, the Hawaii State bird, measures between 24 to 27 inches in length, has a black head and bill, buff cheeks, a buff neck with dark furrows, and partially webbed black feet. On Kauai, nene frequent scrubland, grassland, golf courses, sparsely vegetated slopes, and open lowland country. Nene breed from August to April with their nests usually concealed under bushes. Nene will nest in the same area year after year.

In 1951, the nene population was estimated at only 30 birds. Their continued decline was attributed to habitat loss and degradation and increased predation from introduced alien animals such as feral cats, Indian mongoose (*Herpestes auropunctatus*), various species of rats, and feral pigs. The 2014 nene population estimate is 3,047 birds with 1,258 (41 percent) on Kauai (USFWS unpublished). Their population on Kauai is increasing. Nene are year-round residents and breed within some parts of the Refuge, however they have not been documented at the proposed site. On April 2, 2018, the Service proposed to reclassify nene from endangered to threatened status because species' status has improved such that it is not currently in danger of extinction throughout all or a significant portion of its range (83 FR 13919).

Ao (Newell's shearwater; *Puffinus auricularis newelli*)

Ao is a medium-sized shearwater measuring 12 to 14 inches with a wingspan of 30 to 35 inches. It has a glossy black top, a white bottom, and a black bill that is sharply hooked at the tip. Ao nest in

burrows under ferns on forested mountain slopes during their April through November breeding season. Burrows are used year after year and usually by the same pair of birds.

'A'o - Photo credit Brenda Zaun/USFWS

Ao were once abundant on all main Hawaiian islands. Today, the majority of ao nest primarily in the mountains on Kauai. They, too, are subject to predation by alien animals such as feral cats, pigs, rats, and mongoose. Ao is also threatened by its attraction to light. Increased urbanization and lighting have resulted in substantial problems for fledgling shearwaters during their first flight to the ocean from their nesting grounds. When attracted to man-made lights, fledglings become confused and exhausted, unable to lift off from the ground. They also fly into utility wires and often perish. Between 1978 and 2007, Kauai residents picked up more than 30,000 ao that were killed or injured during such flights. Hanalei valley is a known fledging route between the ocean and their known nesting areas in the mountains. Ao may fly over the project site as they migrate between onshore breeding grounds and offshore feeding grounds.

Uau (Hawaiian petrel; *Pterodroma sandwichensis*)

Hawaiian petrel - Photo credit C. Hodges/HNP

The uau has a dark gray head, wings, and tail, and a white forehead and belly. It has a stout grayish-black bill that is hooked at the tip, and pink and black feet. They measure about 16 inches in length and have a wingspan of three feet. Uau are birds of the open Pacific seas. Breeding season is from March to October, during which time they nest in Maui, Lanai, and Kauai. They nest in burrows, primarily in remote montane locations, along large rock outcrops, under cinder cones, under old lichen-covered lava, or in soil beneath dense vegetation. One white egg is laid deep within the burrow.

Uau were once abundant on all main Hawaiian islands except Niihau. Today, the largest known breeding colonies are found on Maui and Lanai. Other colonies are on Kauai, the island of Hawaii, and possibly Molokai. This endangered seabird is also threatened by predation by alien mammals, development, light attraction and collision, and disturbance of their breeding grounds. Uau do not have any natural defenses against predators and their burrows are very vulnerable. Uau may fly over the project site as they migrate between onshore breeding grounds and offshore feeding grounds.

Band-rumped storm-petrel (*Oceanodroma castro)*

The band-rumped storm-petrel is a small seabird that is blackish-brown overall with pale wing bars and a clear, curved white band across the rump. They are intermediate in many respects between Wilson's and Leach's storm-petrels. At the time Polynesians arrived, the band-rumped storm-petrel was probably common on all of the main Hawaiian Islands and numerous enough to be harvested for food and possibly for their feathers. The populations continue to be pressured today by predation by non-native mammals and habitat loss. They are strictly nocturnal at their breeding sites to avoid predation. Attraction of fledglings to artificial lights and collisions with structures such as communication towers and utility lines are also threats.

Band-rumped storm-petrels nest in burrows and in crevices on remote cliff locations on Kauai, where a single egg is laid. Kauai likely has the largest remaining population, with an estimated 221 nesting pairs on the island in 2002 (FR 67886). Band-rumped storm-petrels may fly over the project site as they migrate between onshore breeding grounds and offshore feeding grounds.

Koloa maoli (Hawaiian duck; *Anas wyvilliana*)

Koloa - Photo credit Hob Osterlund

The koloa maoli, is a mottled brown duck with a green to blue speculum (the patch of often iridescent color on the secondary feathers of most duck species). Adult males tend to have a darker, sometimes green, head and neck feathers. Both sexes have orange legs and feet. Koloa maoli can be found in lowland wetlands, river valleys, and mountain streams. The main breeding season is between January and May. Koloa nest on the ground, making them highly vulnerable to predation by rats, cats, pigs, and dogs.

Koloa maoli is endemic to Hawaii and used to be found on all the main Hawaiian islands except Lanai and Kahoolawe. They are known to nest in the lowland areas near the wetlands and on forested mountain slopes within the Refuge and are not known to occur at the proposed site. The primary causes for population decline are loss and degradation of wetland habitat, predation by introduced animals, and hunting. Today, hybridization (mating with feral mallards) and disease (avian botulism) are two of the biggest threats to the species. The largest number of pure koloa remaining are on Kauai.

Aeo (Hawaiian stilt; *Himantopus mexicanus knudseni*)

Ae'o - Photo credit USFWS

The aeo is a slender wading bird that grows up to 15 inches in length. It has a black back and white forehead, and is white below. It has long pink legs and a long black bill. Aeo use a variety of aquatic habitats but water depths of 5 inches are required for optimal foraging. Nest sites are frequently separated from feeding sites, and stilts move between these areas daily. Nesting sites are adjacent to or on low islands within bodies of fresh, brackish, or salt water. Aeo are known to nest in the Refuge's wetlands, taro fields and dikes, but do not occur at the proposed site.

The primary causes of the decline of this native waterbird are introduced predators (e.g., rats, dogs, cats, and pigs) and loss and degradation of wetland habitat resulting from altered hydrology, encroachment, alien plants, introduced fish, bullfrogs, disease, and sometimes environmental contaminants.

Alae keokeo (Hawaiian coot; *Fulica alai*)

The alae keokeo is dark slate-gray with a white bill and a large frontal shield (patch on top of head). The frontal shield is usually white but can vary from bluish-white to yellow to dark blood red. They have white undertail feathers that are seen when swimming or during their courtship displays. This endemic bird is smaller than its mainland relatives, measuring 15 inches in length. Alae keokeo are

found in fresh and brackish-water marshes and ponds. Alae keokeo build floating nests in aquatic vegetation, in which four to ten eggs are laid. They are known to nest in the Refuge's wetlands and taro fields, but do not occur at the proposed viewpoint site.

'Alae ke'oke'o - Photo credit USFWS

Between 1,000 and 2,000 alae keokeo live in the main Hawaiian islands. On Kauai, alae keokeo are usually found in lowland valleys, including the Hanalei Valley and the Refuge. The primary causes of the decline have been the loss and degradation of wetland habitat and introduced predators.

Alae ula (Hawaiian common moorhen; *Gallinula chloropus sandvicensis*)

Alae ula are dark gray birds with a black head and neck, and white feathers on their flanks and undertail. They measure about 13 inches in length and have a very distinctive red frontal shield. Alae ula are generally secretive native waterbirds found in lowland freshwater marshes and streams, taro patches, irrigation ditches, reservoirs, and wet pastures. They favor dense emergent vegetation near open water, floating or barely emergent mats of vegetation, water depths of less than 3 feet, and fresh water over saline or brackish water. They nest year-round but the peak breeding season is usually March through August. Alae ula lay an average of five to six eggs. They are known to nest in the Refuge's wetlands and taro fields and dikes, but do not occur at the proposed site.

Hawaiian moorhen - Photo credit Brenda Zaun/USFWS

No historical population estimates are available for the endemic alae ula because they are such secretive birds. It is believed that they were common on the main Hawaiian islands in the 1800s but radically declined by the mid-1900s. Surveys in the 1950s and 1960s estimated no more than 57 individuals. However, survey methods were not designed to detect secretive marsh birds. Today, alae ula can only be found on Oahu and Kauai. The Kauai population is found in lowland wetlands and valleys. A sizable population is found at the Refuge with over 400 individuals counted in the biannual waterbird survey for Hanalei NWR in January 2018. The primary causes of the decline of this native waterbird are the loss and degradation of wetland habitat and introduced predators.

Opeapea (Hawaiian Hoary Bat; *Lasirus cinereus semotus*)

The opeapea is a nocturnal bat that feeds on a variety of native and non-native night-flying insects. They have a heavy fur coat that is brown and gray, and ears tinged with white, giving it a frosted or "hoary" look. It is endemic to Hawaii and is Hawaii's only native land mammal. They occur primarily from sea level to 7,500 feet. Data regarding its habitat and population status are very limited. Most of the available documentation suggests that this elusive bat roosts among trees in areas near forests. Opeapea are known to roost and forage in the vegetation along the Hanalei Valley ridgeline and could occur at the proposed site, but have not been documented there.

The opeapea is a solitary bat that typically leaves its roost shortly before or after sunset and returns before sunrise. Breeding has only been documented on Hawaii and Kauai. Population estimates for all islands have ranged from hundreds to a few thousand, but these estimates are based on limited and incomplete data. The magnitude of any population decline is unknown. Observation and specimen records do suggest, however, that these bats are now absent from historically occupied ranges. Opeapea populations are believed to be threatened by habitat loss, pesticides, predation, and roost disturbance. Its decline may be primarily due to the reduction of tree cover from historic times, and they may be indirectly impacted by the use of pesticides.

Hawaiian hoary bat - Photo credit © Jack Jeffrey

Pueo (Hawaiian short-eared owl: *Asio flammeus sandwichensis*)

The pueo is an endemic subspecies of the short-eared owl (*A. flammeus*). They are found on all the main Hawaiian Islands. Pueo occupy a variety of habitats, including wet and dry forests, but are most common in open habitats such as grasslands, shrublands, and montane parklands, including urban areas and those actively managed for conservation and are known to occur in the area of the proposed viewpoint.

Pueo are susceptible to the same factors such as habitat loss and degradation that threaten other native Hawaiian birds. Pueo were widespread at the end of the 19th century, but are thought to be declining (Mitchell et al. 2005). They are state listed as endangered on Oahu but are not listed or a candidate for listing under the ESA.

3.2 Social and Cultural Resources

Socioeconomic Environment

Princeville and the town of Hanalei are the largest developments near the site of the proposed viewpoint. Princeville is located close to both the town of Hanalei and to Kilauea Point NWR a few miles away. Princeville was home to 2,158 residents in 2010 (U.S. Census Bureau 2011). Visitors are drawn to Princeville by its resort features, including multiple hotels, condominiums, and vacation rentals, restaurants, golf courses overlooking the Pacific Ocean, and outdoor recreation opportunities on public lands and waters. The area is anchored by the Princeville shopping center which has a grocery store, multiple commercial businesses, offices, and a gas station. According the Kauai County General Plan (2000), Princeville had a substantial supply of land planned and zoned for resort, which, if developed would accommodate about 1,100 additional visitor units. Lands not yet zoned but designated “Resort” on the General Plan Land Use Map would accommodate another 280 units.

Hanalei Town is located on the Kuhio Highway west of Princeville. Hanalei is a small town that was home to about 450 residents in 2010. The town covers less than one square mile and is within a couple of miles from Hanalei NWR. Visitors to Hanalei are drawn by the famous crescent-shaped Hanalei Bay and the town’s historic sites and contemporary art galleries. Outdoor activities are abundant, as the town is close to many North Shore beaches and the famous Kalalau Trail on the Na Pali Coast (Go Hawaii 2011).

Other developments of note include a neighborhood along Kapaka Street of about 45 residences south and east of the proposed viewpoint, Princeville Agricultural Subdivision, Church of the Pacific, Princeville Ranch Adventures, Kauai Ono, and Princeville Adventures Kids Center. In addition, there are various infrastructure features such as Kuhio Highway and Kapaka Street, Princeville Utilities water facilities, Kauai Island Utility Cooperative (KIUC) power lines, and a Cybertel Cellular tower. Halelea Forest Reserve is located to the south (beyond the Refuge) which is open for recreational hunting and also has residential areas.

There are no economic, social, or cultural activities occurring at the proposed viewpoint site. The site was used as a plant nursery, but that use has long ceased. The site is served by overhead power but no other utilities are present. A water line is located northeast of Kuhio Highway and within the highway right-of-way. The site is not served with sanitary sewer, with the nearest line located across Kuhio Highway.

Kauai's economy was founded on agriculture, which produced crops such as sugarcane and wetland kalo (taro). Although agriculture is still an important industry on the island, tourism has far surpassed agriculture as the county's leading industry. The tourism industry in Kauai has grown tremendously over the past 50 years and has become a key foundation of the island's economy (Go Hawaii 2011, DBEDT-Research and Economic Analysis Division 2009). According to the Kauai County General Plan (2000), tourism is expected to remain Kauai's single largest industry until at least 2020. The Planning Department's 2020 Economic and Population Projections assumed a range of 24,000 to 28,000 visitors per day on Kauai. Kauai County relies heavily on tourism for employment, with the service industry accounting for 57 percent of all non-farm jobs (IMPLAN 2011). The service industry includes operations such as hotel accommodations, restaurants, and visitor services such as tours or guided activities. Government, including federal, state, and local, accounts for 14 percent of employment, and the trade industry makes up 13 percent of non-farm employment (IMPLAN 2011).

Hazardous Materials

A search of the Environmental Protection Agency's (EPA) Environmental Justice Screen (EJScreen) reports that no National Priority Superfund sites, no hazardous waste treatment, storage, or disposal facilities occur within the project area (Accessed December 6, 2016). A search of EPA EnviroFacts (February 21, 2017) hazardous waste, superfund, and the Resource Conservation and Recovery Act Information (RCRAInfo) databases found no known hazardous waste sites or facilities in the project area. Superfund is a program to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. The RCRAInfo database maintains an inventory system about hazardous waste handlers. Visual surveys of the project site found no contaminants or wastes that might be hazardous.

Traffic Conditions

The County General Plan (2010) describes Kuhio Highway as the only arterial road connecting the North Shore with the rest of Kauai, providing circulation between Haena State Park and Lihue. Throughout the North Shore, Kuhio Highway is a two-lane road. In the vicinity of the proposed viewpoint, Kuhio Highway is generally an east-west, two-way, two-lane, undivided arterial roadway with a posted speed limit of 35 miles per hour.

The existing overlook is not a true intersection, but rather a "bulb" out from Kuhio Highway for visitor parking. The overlook provides approximately 10 stalls, oriented perpendicularly to Kuhio Highway, with sufficient space to reverse and merge with oncoming vehicles onto the highway.

An updated traffic study was completed for the project in 2018 (Austin, Tsutsumi & Associates, Inc., 2018, Appendix A). Traffic counts were collected in September 2016. The morning peak hour of traffic occurs from 8:00 to 9:00 AM, the midday peak from 12:15 to 1:15 PM, and the afternoon peak from 3:45 to 4:45 PM. Traffic volumes in the area of the proposed viewpoint ranged from a high of 714 vehicles traveling eastbound on Kuhio Highway during the PM peak to a low of 471 traveling eastbound during the midday peak. Westbound traffic volumes ranged from a low of 549 during the AM peak to a high of 587 during the midday peak.

Noise

Noise levels are measured in units called decibels, a numeric system expressed on a logarithmic scale. Since the human ear does not perceive all pitches or frequencies equally, noise levels are adjusted, or weighted, to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA. In a rural area with no major roads nearby, noise levels would average around 50 dBA, whereas an urban area near a major arterial roadway would average around 70 dBA. There are no industrial sources of noise near the project site other than occasional construction activities. However, the proposed viewpoint is adjacent to Kuhio Highway, a roadway with a moderate amount of traffic. Therefore, noise levels at the project site near the highway may be as high 70 dBA during periods of relatively high traffic volumes.

Visual and Aesthetic Resources

From Kuhio Highway, the project site appears as a dense thicket of shrubs and trees, blocking views south of the highway. Due to the vegetation, the valley itself cannot be viewed from the highway until viewers are in the vicinity of the existing overlook. The view from the existing overlook provides a well-known view of Hanalei Valley. As a scenic resource, Hanalei Valley is spectacular, with its serene taro fields, wetlands, and majestic mountains of Halelea Forest Reserve in the background.

Environmental Justice

Federal agencies must consider the environmental justice effects of their actions. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people should bear a disproportionate share of negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. The site for the proposed viewpoint is unoccupied. There are no permanent or temporary, minority or low-income individuals or populations residing on the site. However, the residents on the valley floor whose privacy could be affected by the project are members of a minority group. It is for this reason that the proposed site has been designed in a manner to minimize its visibility from the valley floor using construction set-backs and single-story design, vegetative buffers, and construction with non-reflective materials.

Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies consider the effect of their actions on any resource listed on or eligible for the National Register of Historic Places (NRHP). The Section 106 process involves coordination and consultation with the SHPD and other agencies and organizations that have an interest in or are mandated to protect historic properties such as the Advisory Council on Historic Preservation (ACHP). Chapter 6E of HRS places similar responsibilities on state agencies to evaluate their projects. Since the project involves both federal and state agencies, both regulations apply to the project.

The Section 106 process involves identification of any historic properties in the project's Area of Potential Effect (APE), an assessment of whether properties identified in the APE would be adversely affected by the proposed project, and the resolution of adverse effects, if necessary.

This section describes the effort performed to identify historic properties in the project's APE, and the results of those efforts. A historic property is any district, site, building, structure, or object that is on or eligible for the NRHP. The APE is defined as the geographic areas within which an undertaking may directly or indirectly cause changes in the character of historic properties, if any such properties exist. As such, the APE includes the project site and portions of the valley floor close to the proposed viewpoint, which includes portions of Hanalei NWR. As the project site has not changed since 2003 and the 2019 proposed viewpoint is reduced in scope and extent from the 2003 proposal, the 2019 APE is identical to the 2003 APE.

To assist in identifying historic properties in the APE, Cultural Surveys Hawaii (CSH) conducted an archaeological inventory and survey of the APE in 2000 (Appendix B). The survey included a historic background survey, which included study of historic maps, archival documents, and previous archaeological and historical studies of the project area. Fieldwork was also conducted to determine the existence of undiscovered historic properties on the project site.

Fieldwork was conducted in August 2000 to determine whether the project site contains undiscovered archaeological, historic, or cultural resources. The fieldwork covered the entire project site and consisted of pedestrian sweeps 15 to 50 feet apart. Surveys of the cliff areas extended down to an estimated elevation of 250 feet. No signs of historic land alterations predating the nursery, which was active in the 1970s, were observed anywhere on the project site. Also, no signs of pre-contact land alteration were observed anywhere on the project site. Based on these findings, CSH concluded that there was "*no sign of pre-contact land alteration anywhere in the project area. No sign of historic land alteration pre-dating the nursery circa the 1970s was observed (other than the highway itself). Our assessment in the field was that the potential for significant subsurface deposits was virtually nil*" (CSH 2000).

Based on the results of the inventory survey, it appears that there are no historic properties within the APE that would be directly affected by the project (construction and landscaping). However, the following historic properties are in the general vicinity of the project:

- Pooku *Heiau* (State Site 50-30-03-139) located approximately 1,500 feet southeast of the project site, outside Hanalei NWR
- Hanalei National Wildlife Refuge Historic and Archaeological District (HNWRHAD) (State Site 50-30-03-304) which contains several archaeological resources, of which State Sites 50-30-03-1015 and 1016 are nearest to the project site

- North Shore Section of Kauai Belt Road (Kuhio Highway) (NRHP Historic District #03001048)

Pooku *Heiau* was placed on the Hawaii Register of Historic Places in 1974. However, issues with landowner notifications led to the removal of the site from the register in 1980. The *heiau* was first identified in 1906 by T.G. Thrum, who described the site as "An enclosed *heiau* of about two acres in area. Of *luakini* class, terraced down on all sides from the central platform." The Kauai Historic Preservation Review Commission and others commenting on the 2003 EA noted that historical access to the Pooku *Heiau* may have passed through the project site. However, the inventory survey found no evidence of such a trail.

HNWRHAD was listed on the NRHP in 1980. The significance of the district is based on archaeological evidence indicating that Hanalei Valley has been continuously occupied for over 1,300 years. Shortly following western contact, the valley came under the influence of foreigners, and physical evidence, such as the historic Haraguchi Rice Mill (State Site 50-30- 03-9385), provides an understanding of the economy of post-contact cultures in the valley. For example, the historic Hanalei Valley is one of the few remaining areas of significant taro-producing acreage in the state, continuing the practice that dominated the valley for hundreds of years prior to western contact.

More than 20 individual archaeological sites have been recorded in HNWRHAD. The sites nearest to the proposed project area are State Sites 1015 and 1016. Site 1015 is located between the 25 and 125 feet elevation contours, down slope of the project site. In 1979, Paul Cleghorn described the site as "*an extensive, discontinuous terracing system on ridges between four small streams, covering an area of approximately 260 by 850 feet. Some of the terraces are simply bounded by single-stone alignments, while others have terrace facings approaching 2 meters in hei*ght." The site also contains a possible habitation feature. Cleghorn described Site 1016 as an L-shaped wall approximately 65 by 160 feet by 1 foot high.

The North Shore section of the Kauai Belt Road (Kuhio Highway) was added to the NRHP in 2004. The boundaries of this historic district are delineated by the Kuhio Highway right-of-way from Mile Marker 0 (west of Ka Haku Road at the main entrance to Princeville) to Mile Marker 10 at Haena State Park. The area was noted for embodying "*the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction*" as well as being "*associated with events that have made a significant contribution to the broad patterns of our history*" (NHRP Registration Form).

The beginning and end points were selected to encompass the portion of the Kauai Belt Road that retains the greatest historic integrity and character. Within the district, the roadway is relatively unaltered and is the most spectacular portion of Kauai's historic belt road system, both in its historic character and its scenery. It is the only portion of the Kauai Belt Road that retains historic integrity. The historic district includes the road, the existing Hanalei Valley Scenic Overlook, and thirteen historic bridges and culverts that date to 1912.

It was noted in the NRHP Registration Form that the existing overlook (Hanalei Valley Scenic Overlook) was considered to be a contributing resource to the historic district and has been a feature of the Kauai Belt Road since the early 1900s. This viewpoint has been enjoyed by travelers throughout the 20th century as it "*provides a stunning view of the Hanalei Valley and its kalo lo'i*

(taro patches) approximately 160' below. Photographer Alonzo Gartley documented this scenic view in 1912, and R. J. Baker photographed the site in 1915" (NRHP Registration Form).

In addition to the inventory and survey, and to address Chapter 6E HRS, early coordination with persons that might have knowledge of historic resources in the APE was conducted in August 2000. This early coordination included the SHPD, the Office of Hawaiian Affairs (OHA), the State Department of Hawaiian Home Lands, and the Kauai Historic Preservation Review Commission. Other consultation activities included two public informational meetings in Hanalei, correspondence with Hui Malama I Na Kupuna O Hawaii Nei, and a series of small group meetings. The public informational meetings were held on August 29 and November 2, 2000. At the first meeting, the public was specifically asked about archaeological, historic, and cultural issues possibly affecting the project site. In addition, more than twenty small group meetings were held with neighborhood groups; civic, trade, and business organizations; public agencies; and elected officials. The inventory showed that archaeological studies conducted for other nearby projects had not identified historic (post-contact) uses in the general vicinity of the project site other than grazing, the construction of Kuhio Highway in the early part of the 20th century, and development of Princeville Resort.

Consultation with interested parties has been ongoing since the project was re-initiated in 2016. In coordination with the County of Kauai and HDOT, the Service held meetings to solicit input from stakeholders including community leaders from the Hanalei Watershed Hui and the Hanalei to Haena Community Association. A stakeholder kickoff meeting in January 2016 was attended by Congressional representatives; County of Kauai Parks and Recreation, Planning Department, Public Works and Engineering, and Transportation; Hawai'i Department of Transportation; and the current landowner. Subsequent public meetings were held in March 2016 and August 2017 and separate meetings with specific partners and interested parties included elected officials, the county, HDOT, Hanalei taro farmers, and the Kilauea Neighborhood Association.

In late 2018, Section 106 and HR Chapter 6E-42 consultation memos seeking input on the historical and cultural importance of the proposed site were sent to the following organizations:

- Office of Hawaiian Affairs
- Kauai Historic Preservation Review Commission
- Kauai/Nihau Island Burial Council
- Hanalei Roads Committee
- Hui Hoomalu i ka Aina
- Pooku Heiau
- Hanalei Watershed Hui
- Waipa Foundation
- Hanalei Hawaiian Civic Club
- Department of Parks and Recreation/County of Kauai Parks Planner Nancy McMahon
- Individuals identified as possibly having a specific cultural or historic interest in the proposed project site as required by law

The only response from these memos was received from a Kauai Parks Planner who concurred that under "NHPA Section 106 and HRS 6E-42, there are no historic properties in your APE" and suggested that the project would have no effect to historic properties.

Public Use and Refuge Administration

Portions of the Refuge boundary are adjacent to or traversed by public roadways which are not managed by the Service. Kuhio Highway is owned and maintained by HDOT and runs across the northern boundary of the Refuge. Near Princeville, across from the Princeville shopping center on the south side of Kuhio Highway, sits the Hanalei Valley Overlook, which provides people with viewing and interpretative opportunities of the Refuge. Interpretive panels stationed at the overlook provide information about the wetlands and the endangered waterbirds. Its location, restricted size, and lack of ingress and egress lanes raise access, circulation, and safety concerns. The existing stop has space for about 10 cars or two buses. Therefore, public access to the overlook resource is effectively blocked when the parking supply is used up, or inefficient use of space prevents other vehicles from stopping. Many times parking at the existing overlook is full, depriving other motorists of the opportunity to pull over and view the valley. When this occurs, there are no other areas near the overlook where cars can safely pull over. Although one tour bus could bring dozens of people to the overlook, the bus may not be able to visit the overlook depending on the configuration of cars parked at the stop.

The existing overlook is located directly adjacent to the Kuhio Highway along a section of roadway with a 35 mph posted speed limit, and there are no turning lanes on Kuhio Highway fronting the stop. Only a painted divider line separates the travel lanes and overlook pullover. The viewing area of the existing overlook is only about 20 feet from Kuhio Highway. With vehicles traveling on Kuhio Highway only a short distance away, the amount of highway noise at the overlook can interfere with the enjoyment of viewing picturesque Hanalei Valley. Space limitations also restrict educational and interpretive exhibits.

Continuing west toward Hanalei on Kuhio Highway and crossing over the one-lane Hanalei Bridge, immediately off the west side of the bridge, the highway intersects with Ohiki Road. This 2-mile, dead-end, one-lane road is maintained by the County of Kauai. It runs approximately northwest to southeast, splitting Hanalei NWR in two, with the current Refuge boundary adjacent to both sides of the road. This public road is primarily used by tourists, Refuge staff, and local residents who live either on the Refuge or in the back of the valley. Because the narrow road is about 16 feet wide, several pullouts have developed from cars attempting to pass or turn around. The posted speed limit is 15 mph. This road provides access to an adjacent historic rice mill, the Service's maintenance baseyard, a dirt/gravel parking area where people park to access the Okolehao Trail (a state hiking trail), of which ¼ mile is on Refuge land, and private residences.

Fishing occurs on a limited basis from the banks of the Hanalei River. Fishing methods include hook and line, consistent with Hawaii Fishing Regulations. Environmental education used to be offered at the Refuge; however, due to funding and staffing cuts, it is provided only on a limited basis. The non-profit Hoopulapula Haraguchi Rice Mill organization, a 501c3 nonprofit, conducts limited commercial tours of the historic Haraguchi Rice Mill under a special use permit (SUP). The rice mill was built in the 1880s, operated until the 1960s, and is listed on the NRHP. The rice mill buildings are privately owned by the Haraguchi family and are located on Hanalei NWR lands.

The interior areas of the Refuge are not open to the general public. Public access in closed areas may be authorized via SUP in situations where such access is compatible with the Refuge purpose and for compatible uses, e.g., National Wildlife Refuge Week, environmental education, and wildlife observation.

The proposed viewpoint would be managed by the Service in compliance with the laws, regulations, and policies relating to lands in the NWRS. The viewpoint would be open to the public from 6:00 AM to 30 minutes past sunset. The Refuge Manager would have the authority to open and close the parking area and other facilities to ensure the safety of visitors and ensure compatibility with Refuge purposes. The Service does not plan to charge an entrance fee for visitors to the viewpoint, however, commercial tour companies may be charged a fee for their use of the area and an entrance fee could be considered in the future if necessary to maintain the site. No other commercial uses would be allowed on the site.

Budget and staffing levels are set for the Kauai National Wildlife Refuge Complex as a whole, rather than the three individual refuges (Hanalei, Kilauea Point, and Huleia). The Refuge Manager makes decisions as to how to divide staff and funds among the three refuges. Funding for operations and maintenance of the proposed viewpoint would come out of the Complex's annual budget.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

The reasonably foreseeable environmental consequences resulting from implementing the two alternatives are discussed below. Although the analysis shows that the preferred alternative would not result in significant (major) effects, some positive (beneficial) or negative effects are expected. The Council on Environmental Quality regulations (40 CFR §§ 1500–1508) define the impacts and effects that must be addressed and considered by federal agencies in satisfying NEPA requirements. These include direct, indirect, and cumulative impacts. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8). These are construction-related impacts. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use and related effects on air and water (40 CFR § 1508.8). Indirect effects are related to the ongoing use of the new viewpoint. Cumulative effects are the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR § 1508.7). The terms below were used to describe the scope, scale, and intensity of effects on the human environment.

- **Neutral or Negligible.** Resources would not be affected (neutral effect), or the effects would be at or near the lowest level of detection (negligible effect). Resource conditions would not change or would be so slight there would not be any measurable or perceptible consequence to wildlife or plant communities or other aspects of the human environment. If a resource is not discussed, impacts to that resource are assumed to be neutral.
- **Minor.** Effects would be detectable, but localized, small, and of little consequence to wildlife or plant communities or other aspects of the human environment. Mitigation, if needed to offset adverse effects, would be easily implemented and successful based on knowledge and experience.
- **Intermediate or Moderate.** Effects would be readily detectable and localized with measurable consequences to wildlife or plant communities or other aspects of the human environment but not readily detectable or measurable beyond the immediate area of impact. Mitigation measures would likely be needed to offset adverse effects, and could be extensive, moderately complicated to implement, and probably successful based on knowledge and experience.
- **Significant or Major.** Region-wide effects would be obvious and would result in substantial consequences to wildlife or plant communities or other aspects of the human environment. Extensive mitigating measures may be needed to offset adverse effects and would be large-scale in nature, possibly complicated to implement, and may not have a high probability for success. In some instances, major effects would include the irretrievable loss of the resource.

Effects related to implementing the no action alternative are discussed, followed by a discussion of impacts related to implementing the Service's preferred alternative.

4.1 No Action Alternative

Under the no action alternative, the Hanalei Valley Viewpoint at Hanalei National Wildlife Refuge would not be constructed. Because conditions would remain unchanged at the existing overlook and at the site of the proposed viewpoint, there would be neutral or negligible effects to the natural environment (e.g., air, soil, vegetation, wildlife, aquatic resources).

Site capacity issues at the existing overlook would remain and may intensify if visitor use increases as visitation to Kauai increases, although the current parking situation limits the amount of visitors who can stop at any one time. Kuhio Highway ingress and egress issues would remain unchanged. This represents a minor long-term effect to traffic on Kuhio Highway as the effects would be detectable, but localized and of little consequence beyond the immediate area.

4.2 Preferred Alternative

Impacts to the human environment related to constructing and operating the viewpoint site were discussed and disclosed in the 2003 EA. Because a considerably smaller footprint would be developed under the preferred alternative at the same proposed site where conditions have changed only negligibly since 2003, impacts described in the 2003 EA represent the maximum impacts anticipated with construction and operation of the proposed viewpoint. The reader is encouraged to review the 2003 EA for the detailed discussion, which is summarized and updated here.

Topography and Soils

Direct Effects: Construction of the viewpoint would clear and grub approximately 1.5 acres of degraded woodland habitat at the abandoned nursery that is now dominated by common, primarily non-native plant species. Within this clearing and grubbing area, about 1.3 acres would be graded. The remaining four acres of forest would not be disturbed. Grading would provide enough material to construct the privacy berm along the southern property line. There would be no export of graded soils off the site. Graded soils may be stockpiled during construction. To prevent fugitive dust and erosion, typical erosion control techniques would be employed, including the use of silt fence, mulching, and covering stockpiled soils.

Indirect Effects: Beyond construction-related impacts, only negligible long-term, post-construction effects to soils and topography are anticipated. Soils would be protected from erosive forces (wind and rain) as landscaping plants and groundcovers take hold and mature. Makapili silty clay, the soil type mapped at the project site, has moderately rapid permeability, slow runoff, and its erosion hazard is slight.

Water Features, Floodplains, and Wetlands

Direct Effects: There would be no direct, construction-related impacts to water features, wetlands, or floodplains since none occur on the site. Cleared land would be exposed to wind and rain. Stormwater may erode exposed soils, and sediment could potentially be transported by stormwater runoff to the Hanalei River, the nearest water body. To prevent this, the project would employ generally accepted best management practices, such as the use of silt curtains and silt fences, covering stockpiles of soil, mulching exposed soils, construction of dikes or diversions to avoid runoff across erodible soils, and revegetating the site as soon as possible.

A National Pollutant Discharge Elimination System (NPDES) permit would be required prior to the initiation of construction activities. The permit would contain effluent limits for erosion and sediment control, pollution prevention, and site stabilization requirements to ensure that the discharge of pollutants (including eroded soil) does not impair water quality or human health. The project would comply with all requirements of the NPDES permit.

Indirect effects: Long-term effects are not anticipated to the Hanalei River, adjacent valley wetlands, and coastal waters, including Hanalei Bay. Stormwater runoff from the parking lot and other impervious surfaces would be managed using low-impact development techniques, including bioretention facilities and permeable pavement for sustainable, on-site stormwater management. This approach would detain and infiltrate stormwater and protect habitat from erosive flows and polluted runoff.

The stormwater outfall is in the same location as the existing outfall from the existing on-site stormwater detention pond. Kauai County Public Works Department requires that the project maintain the existing drainage patterns to the extent possible to not disrupt the current water regime. The storm system is designed to treat and detain stormwater runoff and to discharge flows at pre-development conditions. The storm system is designed to the 100-year storm event as required by the Kauai County Public Works Department Stormwater Runoff Manual. This manual requires that detention basins be installed to maintain storm flow discharged to downstream systems at or below pre-development peak flow rates and to regulate runoff volume discharge rates.

If the system were overwhelmed by a storm larger than the 100-year event, stormwater would bypass the parking lot inlets and sheet flow through the landscape to the roadside ditches along Kuhio Highway. From there it would flow west and into the highway storm system, which is the existing condition at the site now.

Air Quality

Direct Effects: Fugitive dust would be generated by construction vehicles operating at the construction site. These impacts would be mitigated by watering the site during dry conditions and wind screens may be used if dust would impact nearby residences in Princeville Resort. Construction vehicles would emit exhaust containing pollutants such as carbon dioxide (CO_2) and nitrogen oxides (NO_x). As described in the 2003 EA, standards for pollutants such as NO_x are set on an annual basis and would not likely be violated by short-term construction emissions. Air quality effects would be negligible because there would not be a measurable or perceptible consequence to ambient air quality.

Indirect Effects: Negligible air quality effects would be expected over the long-term as the site would be used by vehicles already traveling along Kuhio Highway. The new viewpoint would accommodate up to four tour buses at a time. Encouraging tourists to park their vehicles and take tour buses may result in a slight decrease in automobile-related exhaust and pollution.

Botanical Resources and Wildlife Use

Direct Effects: Construction would clear and grub about 1.5 acres of degraded woodland and an abandoned nursery that is now dominated by common, primarily non-native plant species. Approximately ten trees greater than 15 feet would be removed. The remaining four acres of forest would not be disturbed. Landscaping plants installed at the site would native or beneficial non-native species that are not known to attract sensitive, native wildlife. Trees to be installed include koa (*Acacia koa*), kamani (*Calophyllum inophyllum*), hapuu (*Cibotium glaucum*), loulu palm (*Pritchardia* spp.), hala (*Pandanus tectoris*), and kou (*Thespesia populnea*). Shrubs to be installed include hopseed bush (*Dodonaea viscosa*) and naupaka (*Scaevola chamissoniana*). Native groundcovers and a seeded lawn would be installed over about two-thirds of one acre.

Wildlife inhabiting the site would be displaced during construction, though the species present are mostly invasive and non-native and would not be adversely affected in terms of local or regional abundance. Given the context of a heavily vegetated North Shore, this would represent a minor effect—detectable, but localized, small, and of little consequence to wildlife or plant communities. Restoration of the site with more native and non-native beneficial plants would have a beneficial impact to local plant and wildlife communities.

Indirect Effects: Over time, trees, shrubs, and groundcovers would grow and mature and wildlife use of the site would resume, but is expected to be mainly transitory. To reduce the possibility of wildlife habituating to the site, stormwater management would minimize standing open water. Occasional use by wildlife such as feral chicken or red jungle fowl, cattle egret, common myna, Java sparrow, and chestnut munia would be expected. Indirect effects to wildlife related to the proposed action would be negligible.

Special Status Plant and Animal Species

Direct Effects: Section 7 of the ESA requires that actions that are federally funded, authorized, or carried out be done in a manner to not jeopardize the continued existence of any plant or animal species listed as threatened or endangered, or destroy or adversely modify any designated critical habitat. In accordance with the requirements, a Section 7 consultation was completed. It concluded that constructing the new viewpoint may affect, but would not likely adversely affect, nene, ao, uau, band-rumped storm-petrel, koloa maoli, aeo, alae keokeo, alae ula, and opeapea (USFWS 2017, Appendix C).

While direct effects to listed species are anticipated to be negligible to minor due to the lack of presence of these species at the project site, and because of the limited duration, area, and intensity of construction activities, the project would include a number of measures to minimize potential impacts to threatened and endangered species as described below. These measures would be incorporated into construction plans and specifications. A biological monitor would survey the site prior to the initiation of clearing and grubbing to ensure that listed species are not present. If a listed species were found, construction would be delayed until the species leaves the site on its own accord.

Nene: Nene (Hawaiian Goose) are not currently present on the project site, but could be attracted if they find suitable loafing or feeding habitat. In order to prevent nene from habituating to the site, landscaping would feature plants that are not known to be preferred food for nene.

In order to avoid impacts to any nesting nene, a biologist familiar with the nesting behavior of the nene would survey the area prior to initiating any work activities, or after any subsequent delay in work of three or more days (during which birds may attempt nesting). If a nest is discovered, work would cease immediately and the Service's Ecological Services office would be contacted for further guidance. Additionally, nene may be in the vicinity of the project at any time during the year. If nene appear within 100 feet of ongoing work, all activity would be temporarily suspended until it leaves the area on its own accord.

Listed Hawaiian Seabirds: Ao (Newell's shearwater), uau (Hawaiian petrel), and the band-rumped storm-petrel are migratory seabirds that feed in the ocean but nest in inland mountain areas. They do not nest on the project site but likely fly over it. Migratory seabirds can become disoriented and momentarily blinded by bright lights at night when flying between inland nesting sites and offshore feeding grounds. Any increase in the use of nighttime lighting, particularly during peak fallout period

(September 15 through December 15), could result in additional seabird injury or mortality. The preferred alternative includes no lighting at the site. Listed seabirds would be unaffected by the proposed viewpoint during their migrations. In addition, construction activities would occur only during daylight hours.

Listed Hawaiian Waterbirds: Standing water has the potential to attract listed Hawaiian waterbirds koloa maoli (Hawaiian duck), aeo (Hawaiian stilt), alae keokeo (Hawaiian coot), and alae ula (Hawaiian common moorhen). If a listed Hawaiian waterbird is observed within the project site, or flies into the site while construction activities are occurring, construction activities within 100 feet of the individual(s) would halt until they leave the area on their own accord. To reduce the likelihood for standing water, the stormwater management system would retain stormwater in underground vaults which would discharge stormwater on the site over time.

Opeapea: opeapea (Hawaiian hoary bat) roosts in both exotic and native woody vegetation and leave their young unattended in "nursery" trees and shrubs when they forage. Under the preferred alternative, trees and shrubs suitable for Hawaiian hoary bat roosting would be cleared. To minimize impacts to the endangered Hawaiian hoary bat, site clearing would be timed to avoid disturbance during the bat-birthing and pup-rearing season (June 1 through September 15). During this time, woody plants greater than 15 feet tall would not be disturbed, removed, or trimmed. There are abundant nearby trees and shrubs suitable for roosting, foraging, and breeding, so impacts to the Hawaiian hoary bat would be minor.

Indirect Effects: Based on site design and operation of the viewpoint and the minimization measures discussed above, the Service anticipates no indirect, long-term effects to any of these listed species. Stormwater management, if handled improperly, could result in standing water and act as an attractant to waterbirds. To address this possibility, stormwater generated from the site would be captured and treated as it passes through vegetated bioswales. This water would be immediately directed to underground infiltration/storage facilities, thereby eliminating any standing water in above-grade infiltration/detention facilities. During rain events and for a short time thereafter water would flow through the swales en route to the below-ground storage facilities.

Socioeconomic Environment

Direct Effects: There would be no direct effect to social or economic activities at the site of the proposed viewpoint as none occur there now. Construction would add approximately $3.3 million to the local economy as materials are purchased and a construction company is hired. This represents a negligible to minor beneficial effect to the North Shore economy because the project is small relative to the North Shore economy.

Indirect Effects: The viewpoint would generate minimal economic activity. Commercial tour operators would be required to operate under a commercial SUP and at some point the Service could propose a modest entrance fee to help pay for maintenance and operations. Based on current visitation at the existing overlook, the estimated number of people traveling through the area that might stop along the way, and visitation to Kilauea Point NWR, the Service forecasts approximately 1,000 visitors a day to the new viewpoint. Kilauea Point NWR experienced record numbers of visitors in 2018, averaging approximately 1,000 visitors a day and occasionally more than 1,300. With the ease of access and the capacity of the proposed viewpoint, the Service expects similar, if not higher, numbers at the new viewpoint, with visitors staying from 15 to 30 minutes on their way to

other destinations. It is highly unlikely that the viewpoint would draw additional tourists to Kauai or the North Shore that were not already coming for other reasons.

Environmental Justice

Direct Effects: There would be no direct effects to minority or low-income populations. Because the subject parcel is unoccupied, development of the proposed viewpoint would not result in the displacement of minority or low-income populations.

Refuge staff has met with each of the nine taro farmers on Hanalei NWR to discuss this project. There were some concerns voiced about this issue; however, the project design takes this into consideration by minimizing the invasion of privacy and impacts to the viewshed from below in the valley. Several Refuge farmers that live within the Refuge (which are located closest to the proposed viewpoint) have suggested that they could plant a hedge (for vegetative screening to increase privacy) in a manner similar to what they do now with the existing overlook.

To mitigate the potential loss of privacy, the viewpoints are designed, sized, and located in such a way to minimize their presence and the presence of visitors when the top of the pali (cliff) is viewed from the valley. Specifically, each viewpoint is sized to accommodate no more than 15 to 20 viewers at a time. The viewpoints would be set into the landscape (as mentioned before) and constructed with natural, local materials that are non-reflective. Vegetative screening and vegetative management would provide view portals.

Indirect Effects: Because the site would not generate any hazardous materials or pollutants, developing the viewpoint would not result in long-term disproportionate human health or environmental effects to nearby minority or low-income populations. Once constructed, the viewpoint would be open to all members of the public. In the future, the Service may propose a modest entrance fee to help pay for maintenance and operations.

Hazardous Materials/Solid Wastes

Direct Effects: There would be no effect to hazardous materials since none are known to occur on the site. Prior to acquiring the land, the Service would comply with the requirements of the Department of the Interior Manual, Part 341, Chapter 3, and conduct a pre-acquisition Environmental Site Assessment. Site preparation and construction activities would produce solid waste, which would be disposed of at a DOH-permitted disposal site. No waste would be burned on-site or buried. In the unlikely event that hazardous materials are found during the pre-acquisition assessment, a Level II site assessment would be conducted to determine the extent of the contamination. The Service would then require the landowner to clean up the identified hazardous material in accordance to applicable state and federal laws, which specify handling, treatment, and disposal of contaminated materials.

Indirect Effects: There would be no indirect effects related to hazardous materials. Hazardous materials would not be generated or stored on-site.

Traffic Congestion

Direct Effects: There would be temporary traffic impacts if the viewpoint is constructed. Temporary lane closures may be needed to construct the deceleration and acceleration lanes. Stop length would be controlled by flaggers and would be temporary. This represents a minor effect to traffic since the

effects would be detectable, but localized to the immediate area, and of little consequence to North Shore traffic patterns and volumes.

Indirect Effects:

Traffic volumes within the vicinity of the proposed viewpoint are anticipated to grow about 1.0 percent per year based on the Federal-Aid Highways 2035 Transportation Plan for the District of Kauai (CH2M Hill 2014). Traffic volumes generated by the Princeville Shopping Center and Affordable Housing Project, the Hanalei Plantation Resort, and the Makana North Shore Clinic were included in the 2020 background traffic volumes.

Table 1. Projected Traffic Use of the Viewpoint (# of vehicle)

Time of day	Enter	Exit	Total
AM Peak Hour	40	28	68
Midday Peak Hour	163	138	301
PM Peak Hour	141	121	262

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

The Traffic Impact Analysis Report (Austin, Tsutsumi & Associates, Inc., 2018) calculated the anticipated future Level of Service (LOS) for travelers using the driveway that provides ingress and egress to the viewpoint. The LOS is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions (LOS A) to congested conditions (LOS F). Upon completion of construction of the new viewpoint and taking into account the projected increases in traffic volume, only travelers leaving the viewpoint and making a left turn onto westbound Kuhio Highway would experience delays with LOS C during the AM and PM peak traffic hours and LOS D during the midday peak. At LOS D, travelers would experience a 25- to 35-second delay in their turning movement. All other turning movements into and out of the proposed viewpoint are expected to experience LOS A during all hours, a delay of less than 10 seconds per vehicle. These delays constitute a minor effect to travelers, as they would be detectable, but localized, small, and of little consequence to North Shore traffic volumes or patterns. It should be noted again that the majority of visitors to the site are expected to be those in vehicles that would already be traveling along the highway en route to other destinations, so the vehicles coming in and out of the site would constitute a negligible impact on the average number of vehicles traveling along the main highway route over the long-term.

Noise

Direct Effects: Construction of the proposed viewpoint would involve heavy machinery that has the potential to cause temporary noise impacts. Because the nearest sensitive noise receptors (e.g., hospitals, schools, daycare facilities, and elderly housing and convalescent facilities) are in Princeville and all construction activities would occur during weekday hours when occasional loud noises are more tolerable, extended noise disruptions are not anticipated. State DOH community noise control standards would apply to construction of the new viewpoint (HAR §11-46). The standards set maximum permissible sound levels related to construction activities. Since the site is in a zoned Conservation District, it is categorized as a Class A zoning district. The maximum sound level between the hours of 7:00 AM and 10:00 PM in a Class A zoning district is 55 dBA. That

maximum can only be exceeded for no more than 10 percent of the time during any 20-minute period. Construction hours and associated impacts would be set as per local law, and temporary (limited to the duration of construction).

Indirect Effects: Daytime use of the site would generate noise associated with vehicular use and sounds associated with public use of the site. Against the backdrop of vehicular use of Kuhio Highway this would be a negligible to minor effect—localized but of little consequence beyond the immediate area. A vegetated berm and a privacy wall would be constructed to screen the parking area from adjacent residences, which will partially reduce the level of sound reaching those residences.

Cultural Resources

Direct Effects: There would be no direct, construction-related effects to cultural resources because there are no cultural resources within the APE. The cultural resources survey conducted for the 2003 EA concluded that there was no sign of surface archaeological sites and no pre-contact land alteration anywhere in the project area (Cultural Surveys Hawaii Inc., 2000). While the project's APE remains the same as it was for the 2003 project, in many respects, the current project is less intrusive since the plan no longer calls for the construction of a visitor center/shop or education pavilion, and the number of parking spaces has been decreased.

Although the boundaries of the Pooku *Heiau* are not clearly evident, the summit of the *Heiau* is about 1,500 feet from the eastern side of the proposed viewpoint. The 2000 survey concluded that the project would "have no impact on Poʻokū *Heiau which lies more than 300 meters distant and appears to be oriented toward the east (the opposite direction)"* to the proposed viewpoint. Likewise, the HNWRHAD is predominantly located in the valley below the proposed viewpoint and would not be adversely affected.

The boundary of the Kauai Belt Road District (Kuhio Highway) (NRHP Historic District #03001048) begins at mile marker 0 of Hwy 560, which is located approximately 1,300 feet to the northwest of the APE and continues to the west from that point. It is not visible from the APE. As a result, the new viewpoint would not have an impact on the Kauai Belt Road district or any of the contributing elements to the historic district (e.g., the existing overlook).

During the initial development of the project in the early 2000s, FHWA—as the lead agency for the original project—conducted consultation and coordination with state and federal agencies, Native Hawaiian organizations, local communities, and individuals. Early coordination included the SHPD, OHA, and the Kauai Historic Preservation Review Commission. The ultimate outcome of FHWA's consultation with SHPD and the interested parties was a determination of "no adverse effects" to historic properties*, not because of physical impacts to cultural resources in the APE but based on a concern that presentation of inaccurate interpretive messages on cultural subjects could constitute an adverse effect to cultural resources in the area*. Specifically, SHPD wrote on September 11, 2001:

> "We agree that the project will have no direct impact on significant historic sites, if efforts are taken to avoid bulldozer bush [sic] or run-off erosion of soil down the steep slope…. However, we have just received a package of material on this scenic stop from Federal Highways, which indicates that the scenic stop will contain interpretive material related to significant historic sites. If inaccurate information is presented to the public, then such interpretation could have an "adverse effect" on significant sites in our opinion. Thus, our office needs to have an opportunity to comment on any interpretive material (sign text,

> brochures, etc.) to ensure that current scientific information (from archaeological, oral historical, and historical sources) will be accurately presented to the public and that there will be "no effect" on significant historic sites" (memo, Gilbert Coloma-Agaran, SHPD, to Jason Yazawa).

On January 17, 2002, SHPD wrote:

> "No historic sites were found in the project area. Pooku Heiau and the Hanalei National Wildlife Refuge Historic and Archaeological District are not directly in the project's area of potential effect. Indirect effects are possible in relation to the view and interpretation of Hanalei, and in our previous letter, we itemized concerns and proposed conditions to ensure no adverse effects would occur. Your letter indicates an acceptance of those conditions. Thus, we concur with your determination that this project will have "no adverse effect" on significant historic sites, with the understanding particularly that interpretive material will be submitted to our office for review" (memo, N. McMahon to P. Phung) (2003 EA, p. 450).

To address the concern, a commitment was made that the project would invite SHPD to participate in the review of the content for interpretive materials related to significant historic sites associated with the new viewpoint. While it remains the case that no historic properties would be affected by the current project, the Service has and will continue the commitment to seek feedback from SHPD and the local community on review of interpretive materials to ensure accuracy of the information provided.

Since the project currently is the same in its essentials as originally designed except with a significantly smaller physical footprint, the Service recommended in a letter to SHPD dated January 20, 2019, to maintain the original determination that the project would have a "no adverse effect" outcome under the 36 CFR 800 implementing regulations of Section 106 of the NHPA and under HR Chapter 6E–42, with the implementation of the following condition to ensure that the concerns raised during the original consultation effort are addressed regarding the accuracy of interpretive messages on cultural subjects:

- SHPD and Native Hawaiian groups and individuals are invited to provide input on the development of the content for interpretive panels and other materials associated with the new viewpoint.

The Service submitted a letter to SHPD dated January 30, 2019, describing NHPA Section 106 and HRS 6E–42 concurrence efforts and project effects that concluded with a recommendation to maintain the original determination of "no adverse effect to historic properties." The SHPO concurred with this finding on March 1, 2019, noting the project would result in "*no adverse effect*." The Service letter and SHPD's response are provided in Appendix D.

Implementing the preferred alternative would not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of Native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawaii and by Hawaii statutory and case law.

In the unlikely event that cultural resources are encountered during construction, construction activities in the immediate vicinity of the discovery would halt and the Service's regional archaeologist would be notified to provide guidance on how to proceed.

Indirect Effects: Ongoing operation of the viewpoint would result in a minor effect on the North Shore's cultural environment. Consistent with the Kauai County General Plan (2000), the proposed viewpoint would provide guidance and assistance to visitors and residents, as well as information about the region, its history, and culture through interpretive and educational displays, resulting in a minor, beneficial effect.

Visual and Aesthetic Resources

Direct Effects: The proposed viewpoint would provide a more expansive panoramic view of the Hanalei Valley compared to that offered by the existing overlook resulting in a minor beneficial effect. The view would include the Refuge with its taro fields, managed wetlands, and dramatic mountain backdrop of Halelea Forest Reserve. Hanalei Town and Hanalei Bay would also be visible from the viewpoint. This view is not available at the existing overlook. During construction, activities would be visible from Kuhio Highway, a minor to intermediate direct effect to area aesthetics as the impact would be readily detectable, but localized and temporary.

The visual aesthetics from the Hanalei Valley floor up toward the proposed viewpoints would be minimally impacted by careful design such as use of non-reflective material that would be set back from the slope to be shielded by vegetation. Two smaller viewpoint structures are being proposed versus one larger structure so that the number of people at each viewpoint would be lowered (15–20 people). Proper vegetative screening would enable these viewpoints to be minimally visible from the valley floor. Landscaping and retention of much of the existing vegetation along the bluff would provide a measure of privacy to the residences on the valley floor.

A commitment was made during the initial review of the 2003 EA to avoid visual impacts to Hanalei Valley by using setbacks, landscaping, grading, and architectural methods, and avoiding construction outcomes such as bulldozer push and erosion run-off. These commitments continue for the current project.

Indirect Effects: Over time, as the planted trees and shrubs grow and mature, the viewpoint will become less visible from the highway, except for the entrance and new signs along the highway alerting travelers to the location of the viewpoint. This permanent change would create a minor effect to the aesthetic quality of the area because it would be localized to the immediate area of the viewpoint and minor relative to the surrounding landscape.

Public Use and Refuge Administration

Direct Effects: Upon completion of construction, the new viewpoint would be open to the public free of charge. The viewpoint would be open from 6:00 AM to 30 minutes past sunset. The Service anticipates up to 1,000 visitors a day at the new viewpoint, which would serve to welcome and orient visitors to Hanalei Valley and Hanalei NWR.. The location would provide safe access to and from Kuhio Highway and provide an improved visitor experience compared to that offered by the existing overlook, a moderate beneficial effect.

When the Service adds lands to the Refuge System, it is required to determine if any existing public uses of the land are compatible with refuge purposes and the mission of the Refuge System. Because the land for the proposed viewpoint is privately held and there are no existing public uses, a pre-acquisition compatibility determination is not required (603 FW 2). Once the land is brought into the Refuge System, the Service will determine if new public uses (wildlife observation, wildlife photography, environmental education, and interpretation) at the proposed Hanalei Valley Viewpoint would be compatible with refuge purposes and the mission of the Refuge System. The Service would complete a draft Compatibility Determination and make it available to the public for comment before allowing public use.

If determined to be compatible uses, visitors to the viewpoint would be able to view and take photographs of the spectacular views offered by the new viewpoint. Visitors with binoculars would be able to observe wildlife. Wildlife species expected to occur on-site include the Pacific golden-plover and numerous non-native birds such as the myna, Japanese white-eye, white-rumped shama, northern and red-crested cardinals, and two species of dove.

The viewpoint would include an orientation kiosk and interpretive signage. Interpretive themes would highlight the unique elements of the Refuge, especially related to species and habitats; the Refuge's primary purpose and role in the recovery of endangered waterbirds in Hawaii; the taro fields and their importance in Hawaiian culture and in providing additional habitat for endangered waterbirds; the importance of the Refuge for wintering and stopover habitat for migratory waterfowl and shorebirds from both North America and Asia; and the Service's management efforts related to habitat needs, invasive species, and plants, fish, and wildlife that occur within the Refuge.

On-site environmental education and interpretation programs may be presented by Refuge visitor services staff, teachers, or others. Target audiences would include the general public, school children, civic clubs, and various other community organizations. Other environmental agencies or organizations may be invited to participate in environmental education and interpretation activities.

Due to budgetary constraints, the Service does not anticipate having a staff person permanently stationed at the viewpoint. We do anticipate having up to two or more volunteers that help with interpretation and a ranger on occasion to lead groups and environmental education programs. The content of the programs and the frequency in which they would be offered would be developed in the future.

The Kauai National Wildlife Refuge Complex would oversee the operation from its office in nearby Kilauea. The site would be managed by the Service in compliance with the laws, regulations, and policies relating to lands in the Refuge System. Funding would come from the Kauai National Wildlife Refuge Complex annual operating budget. If funding is not sufficient to maintain and operate the viewpoint, the Refuge Manager may explore implementation of a modest fee program for visitors to the viewpoint.

The Refuge Manager would have the authority to open and close the parking area and other facilities to ensure the safety of visitors and ensure compatibility with Refuge purposes. The Service does not plan to charge an entrance fee for visitors to the viewpoint, however, commercial tour companies may be charged a fee and must operate under an SUP. No other commercial uses would be allowed. Law enforcement would be provided by Refuge law enforcement officers during their normal patrols of Hanalei NWR, in combination with assistance from Kauai Police Department, as needed under an existing MOU. The facility is located approximately one-half mile from the Kauai Police Department Princeville Substation.

Indirect Effects: The Service anticipates no public use indirect effects. The viewpoint would not increase visitation to the North Shore nor would it stimulate population or economic growth-inducing effects. The Service anticipates no indirect effects to the other refuges of the Kauai National Wildlife Refuge Complex (Huleia NWR and Kilauea Point NWR) resulting from the operation and maintenance of the new viewpoint.

4.3 Cumulative Effects

Cumulative effects are the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR § 1508.7). Alternative management options for Hanalei NWR are being developed as part of the Wetland Management Plan and are being considered under a separate EA that is scheduled for completion later in 2019.

The proposed action provides a new viewpoint in addition to the existing Hanalei Valley Scenic Overlook. The new viewpoint provides a different view of the valley and bay and may relieve congestion problems at the existing overlook. It provides more space for interpretive and educational displays and provides an on-Refuge experience that the existing overlook does not provide. Four priority public uses of the proposed viewpoint would include wildlife observation, wildlife photography, environmental education, and interpretation. These represent new wildlife-dependent recreational opportunities in addition to similar opportunities at the nearby Kilauea Point NWR and other public areas along the North Shore. These new public use opportunities represent a minor cumulative effect related to the proposed viewpoint.

4.4 Summary

Table 2 provides a brief summary of the effects to the human environment related to the no action and the preferred alternatives.

Table 2. Summary of Effects

Element	No Action Alternative (Alternative 1)	Preferred Alternative (Alternative 2)
Topography and Soils	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Construction would require clearing and grubbing about 1.5 acres. No export of cut material required. Exposed soils subject to erosion. Erosion control BMPs would limit this impact. Negligible long-term, post-construction effects.
Water Features, Floodplains, and Wetlands	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	No direct impacts to on-site water features, floodplains, and wetlands. Construction activities could generate erosion and sedimentation by stormwater passing over areas cleared for construction. Erosion control BMPs would limit this impact. Negligible long-term, post-construction effects.

Element	No Action Alternative (Alternative 1)	Preferred Alternative (Alternative 2)
Air Quality	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Construction activities have the potential to generate fugitive dust emissions. Negligible air quality effects over the long-term as the site would be used by vehicles already traveling along Kuhio Highway.
Wildlife Habitat and Use	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Minor effect related to clearing about 1.5 acres of mostly non-native vegetation that provides habitat of non-native, common faunal species.
Special Status Plant and Animal Species	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Trees and shrubs that may provide roosting habitat for opeapea (Hawaiin hoary bat) would not be cleared during June or July, the peak breeding season. No security lighting included. No impacts to special status plants as none occur on-site. No long-term indirect effects anticipated.
Socioeconomic Environment	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Viewpoint would provide information on the cultural and natural history of the valley. Up to 1,000 daily visitors anticipated. Construction generates minor economic benefit to local economy. No long-term economic effects as no economic activity would occur at the viewpoint.
Environmental Justice	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	No minority or low-income populations would experience disproportionately high or adverse effects. Privacy of the taro farmers would be protected through vegetation and other means of screening.
Hazardous Materials	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	No direct or long-term (indirect) effects anticipated as hazardous materials are not known to exist at the site.
Traffic	Ingress and egress issues remain at existing overlook, a minor, long-term effect to Kuhio Highway traffic.	Construction of acceleration and deceleration lanes on Kuhio Highway would require temporary lane closures and traffic delays. No long-term delays to traffic on the highway.
Noise	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	Minor direct effects related to construction equipment noise. Negligible long-term effects.
Cultural Resources	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	No direct or long-term (indirect) effects anticipated as cultural resources are not known to exist at the site. No historic properties affected.
Visual and Aesthetic Resources	Neutral or negligible direct and indirect (long-term) effects from maintaining existing conditions.	New viewpoint provides a more expansive view of valley than existing overlook, a minor effect.

Summary of Mitigation Measures

To avoid disturbing opeapea (Hawaiian hoary bat), woody plants greater than 15 feet tall would not be disturbed, removed, or trimmed during the pupping season (June 1 through September 15).

Typical erosion control techniques would be employed, including the use of silt fence, mulching, covering stockpiled soils, construction of dikes or diversions to avoid runoff across erodible soils, and revegetating the site as soon as possible.

A biological monitor would survey the site prior to the initiation of clearing and grubbing, or after any subsequent delay in work of three or more days, to ensure that listed species are not present. If a listed species were found, construction would be delayed until the species leaves the site on its own accord.

To mitigate the potential loss of privacy, the viewpoints are designed, sized, and located in such a way to minimize their presence and the presence of visitors when the top of the pali is viewed from the valley.

In the unlikely event that cultural resources are encountered during construction, construction activities in the immediate vicinity of the discovery would halt and the Service's regional archaeologist would be notified to provide guidance on how to proceed.

Findings under HRS Chapter 343 and HAR Chapter 200

The approving agency will issue its determination of significance related to the 13 administrative criteria for significant impacts described in §§ 11-200-12 HAR in a notice of determination letter to the OEQC.

The availability of this draft EA will be announced in the State of Hawaii OEQC bi-monthly Environmental Notice publication during the mandatory 30-day public review period. In accordance with the provisions of HRS Chapter 343, this draft EA has concluded that the proposed project will not have significant adverse impacts on the environmental quality of the area. A review of the 13 "Significance Criteria" used as a basis for the above determination is presented in Table 3.

Table 3. Findings related to the 13 administrative criteria for significant impacts.

Criteria	Finding
Irrevocably commit a natural, cultural, or historic resource	Clearing and grubbing of about 1.5 acres of an abandoned plant nursery overrun with non-native species. Landscapes with native and beneficial non-native plants. Project does not include any irrevocable commitment to the loss or destruction of any cultural resource. No cultural resources occur on the site. No historic properties affected.
Curtail the range of beneficial uses of the environment	Provides a beneficial use of the property for residents and visitors by developing a new viewpoint of the scenic Hanalei Valley and Hanalei National Wildlife Refuge.
Conflict with the state's environmental policies or long-term goals established by law	The project is consistent with the goals of Hawaii environmental policy. Viewpoint and interpretive displays will enrich the understanding of the ecological systems and

Criteria	Finding
	natural resources important to the people of Hawaii. The project establishes a new viewpoint for public recreational and educational use.
Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and state	Viewpoint would provide information on the cultural and natural history of the valley. Construction generates minor economic benefit to local economy. No long-term economic effects as no economic activity would occur at the viewpoint.
Have a substantial adverse effect on public health	No impacts to public health. No generation or storage of hazardous materials.
Involve adverse secondary impacts, such as population changes or effects on public facilities	No substantial secondary impacts. The viewpoint would be open to the public during daylight hours. Only uses compatible with the Refuge purposes would be allowed (e.g., photography, wildlife viewing). Traffic movements at nearby intersections and the entrance to the viewpoint would function at acceptable levels of service. Substantial secondary impacts are not anticipated.
Involve a substantial degradation of environmental quality	Constructing and operating the viewpoint would not result in substantial degradation of environmental quality. Approximately 1.5 acres of an abandoned plant nursery overrun with non-native species would be cleared. Stormwater would be treated on-site. The viewpoint would be landscaped with native and beneficial non-native plants.
Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions	The new viewpoint would provide a new wildlife-dependent recreational opportunity on the North Shore, representing a minor cumulative effect.
Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat	Minor impacts to opeapea (Hawaiian hoary bat) foraging and roosting habitat. Woody plants greater than 15 feet tall would not be disturbed during bat-birthing and pup-rearing season (June 1-September 15). The proposed viewpoint would only be open during daylight hours. Viewpoint does not include artificial lighting in order to alleviate attraction of migrating ao and other seabirds. No effects to other rare, threatened, or endangered species, or their habitats.
Have a substantial adverse effect on air or water quality or ambient noise levels	Minor effects to air and water quality during construction may occur. Stormwater would be treated on-site. Viewpoint generates no noise other than that from visitor use.
Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater or coastal waters	Project area is not in an environmentally sensitive area such as a floodplain, tsunami zone, beach, estuary, freshwater, or coastal waters. The ridgeline may be erosion-prone, but viewpoints would be located back from the ridgeline and vegetation would not be cleared from the slopes.
Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county	Provides a new viewpoint of the Hanalei Valley and Hanalei National Wildlife Refuge. Does not affect the scenic vista or

Criteria	Finding
or state plans or studies	the view from the existing overlook.
Require substantial energy consumption or emit substantial greenhouse gasses	Operation of the viewpoint requires only minor energy consumption. An on-site photovoltaic panel would generate the electrical energy needed to power the gated entry, the only facility requiring power at the proposed viewpoint.

CHAPTER 5. COORDINATION and COMPLIANCE

5.1 Public Involvement

Project scoping and coordination activities associated with the 2003 EA included public information meetings; correspondence with government agencies, landowners, and non-governmental organizations; and meetings with government agencies and other interested parties. Additional details about these scoping and coordination meetings, and public review and comments, can be found in the 2003 EA along with the associated comment responses provided by HDOT and FHWA.

Although outside the scope of the ongoing Hanalei and Huleia NWRs Comprehensive Conservation Plan (CCP) effort, additional coordination with various county, state, and federal agencies regarding the proposed Hanalei viewpoint occurred in the context of CCP-associated activities, such as the 2011 Kauai NWR Complex alternative transportation workshop.

Upon reinitiating the design process through the 2016 feasibility study, the Service, in coordination with the County of Kauai and HDOT, held meetings to solicit input from stakeholders including community leaders from the Hanalei Watershed Hui and the Hanalei to Haena Community Association. During a stakeholder kickoff and design meeting in January 2016, attended by representatives from Congresswoman Tulsi Gabbard's office; County of Kauai Parks and Recreation, Planning Department, Public Works and Engineering, and Transportation; HDOT; Kalihiwai Investors LLC; and the Service confirmed the project goals and program elements, reviewed site opportunities and constraints, and provided input on access, circulation, parking, utilities, and site layout. A summary of this meeting is provided in Appendix E.

The Service hosted two public open house meetings in March 2016 at Hale Halawai in Hanalei to present preliminary design concepts and associated cost estimates. Notice for the open houses was provided via direct contact to a mailing list as well as announcements through the Refuge website, newspaper, flyers on local billboards, and the community radio station. Approximately 20 individuals, excluding Service staff, attended the open houses. Additionally, the Service met separately with specific partners and interested parties including elected officials, county, HDOT, and the Hanalei taro farmers. The meeting notice and a summary of the open houses are provided in Appendix E.

Additionally, the 30 percent concept design was presented at two public meetings held August 7 and 8, 2017, at the Princeville Community Center and Hale Halawai in Hanalei, respectively. The meetings were advertised through radio public service announcements, flyers, a newspaper article, and on the Refuge's website. Approximately 60 people attended the meetings, including Refuge staff and local governmental representatives. The meeting notice and a summary of the open houses are provided in Appendix E. Additionally, the Service met separately with specific partners and interested parties including elected officials, county, HDOT, and the Hanalei taro farmers to discuss 30 and 70 percent design for the project. An overview of the project was also presented at the August 1, 2017, Kilauea Neighborhood Association Meeting for public review and input.

The project was presented and discussed during a meeting of the Kauai County Council on May 31, 2017. The County of Kauai council voted 6 to 1 to approve a county application to HDOT for Transportation Alternatives Program funds in support of the viewpoint project, which would be used to assist in some of the transportation-related site improvements.

Entities and Individuals Contacted

- Senator Hirono's Office
- Senator Brian Schatz's Office
- Representative Colleen Hanabusa's Office
- Representative Tulsi Gabbard's Office
- State Senator Kouchi's Office
- State Representative Nakamura's Office
- State Representative Morikawa's Office
- State Representative Tokioka's Office
- County of Kauai Mayor Carvalho
- County of Kauai, Department of Public Works – Lyle Tabata and Michael Moule
- County of Kauai, Planning Department - Mike Dahilig, Kaaina Hull, Lee Steinmetz
- County of Kauai Office of Economic Development – George Costa
- County of Kauai Parks and Recreation – Lenny Rapozo, Ian Costa, and Nancy McMahon
- County of Kauai, Transportation Director, Celia Mahikoa
- County of Kauai, Department of Water
- County of Kauai Fire Department
- County of Kauai Police Department
- Kauai County Council
- DLNR – Suzanne Case, Alex Roy, Sam Lemmo, and Alan Carpenter
- HDOT – Karen Chun and Larry Dill
- FHWA – Richelle Takara
- SHPD - Susan Lebo and Alan Downer
- Hawaii Department of Health, Office of Environmental Quality Control
- Kauai Visitor's Bureau
- Hanalei Roads Committee
- Hanalei Watershed Hui
- Hanalei Initiative
- Taro farmers of Hanalei National Wildlife Refuge
- Hanalei to Haena Community Association
- Princeville Community Association
- Kilauea Neighborhood Association
- Kauai Farm Bureau
- Kilauea Point Natural History Association
- Office of Hawaiian Affairs
- Numerous individuals, including community leaders and members of the surrounding communities

Availability of Draft Environmental Assessment

As part of the public notice and review process, this draft EA will be available for a 30-day review. Comments or requests for additional information may be submitted through any of the following methods:

Email: hanalei@fws.gov. Include "Hanalei Viewpoint" in the subject line of the message.

Fax: Attn: Hanalei Viewpoint, (808) 828-6634.

U.S. Mail: U.S. Fish and Wildlife Service, Attn: Michael Mitchell, Deputy Project Leader, PO Box 1128, Kilauea, Hawaii 96754.

All comments received from individuals become part of the official public record. We will handle all requests for such comments in accordance with the Freedom of Information Act and CEQ's NEPA regulations in 40 CFR 1506.6(f). Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comments.

5.2 Consistency with State and County Plans and Policies

Hawaii State Plan

The Hawaii State Plan Revised (1986) serves as a guide for the long-range development of the state. It identifies the goals, objectives, policies, and priorities for the state and provides a basis for determining priorities and allocating limited resources. The last revision of the plan precedes the 2003 EA which described how constructing and operating the viewpoint would support the goals and objectives of the state plan dealing with the visitor industry and the physical and natural environment.

The proposed action would:

- support and assist in promotion of Hawaii's visitor attractions and facilities (HRS § 226-8(b)(1))
- keep with the social, economic, and physical needs and aspirations of Hawaii's peoples through interpretation of the cultural history of the North Shore (HRS § 226-8(b)(2))
- improve the quality of existing visitor destinations (HRS § 226-8(b)(3))
- encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities (HRS § 226-8(b)(4))
- foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's culture and values (HRS § 226-8(b)(8))

Hawaii Land Use Zoning and Policies

The State Land Use Commission, under the authority granted in HRS Chapter 205, regulates land use through classification of state lands into four districts: Urban, Agriculture, Conservation, and Rural. The intent of the land classification is to accommodate growth and development while retaining the natural and agricultural resources of the state. As described earlier, most of the proposed viewpoint is zoned Conservation. The specific subzone is Resource.

The objective for the Resource subzone as stated in HAR §13-5-13 "is to develop, with proper management, areas to ensure the sustained use of natural resources of those areas." The section goes on to state that the Resource subzone includes "future parkland and lands presently used for national, state, county, or private parks."

The viewpoint is considered a “public purpose use," which means not-for-profit land uses undertaken in support of a public service by an agency of the county, state, or federal government which is an allowed use with the Resource subzone of a Conservation District but requires a board permit. The Service intends to submit a Conservation District Use Application to the DLNR (HAR § 13-5-22).

The viewpoint would be entirely inside a national wildlife refuge. The Refuge System runs public facilities that are open to visitors for public benefit, such as environmental education. The viewpoint would be open to the public during daylight hours and free of charge. Therefore, the proposed action conforms with the policies that have been established for the Resource subzone of the Conservation District.

Coastal Zone Management

The site for the proposed viewpoint lies within the state’s Coastal Zone Management (CZM) area. Hawaii Coastal Zone Management Program (1990) describes the state’s response to the Coastal Zone Management Act of 1972.

The objectives of Hawaii’s CZM program are to protect and manage Hawaii’s coastal resources. Objectives related to economic uses, beach protection, historic resources, and marine resources do not apply to the proposed viewpoint because there are no economic uses proposed, and the viewpoint would be located away from the beach and would not affect a significant historical site or marine resources. In addition, the CZM Act notes that federal lands and lands subject solely to the discretion of the federal government are excluded from the state’s CZM area.

The project is consistent with state objectives for managing development, public participation, coastal hazards, recreational resources, scenic and open space resources, and coastal ecosystems. The project has been through extensive public review through a series of public open houses. The proposed viewpoint would be located in an area not subject to tsunamis or storm waves and would generate no pollution or hazardous materials that could affect public health. The project would provide a coastal recreational activity free to the public, an improved viewpoint of Hanalei Valley and Bay, and would restore native and beneficial non-native plants to an abandoned nursery site which is overgrown with non-native nursery-trade plant species.

A review of the project for CZM consistency will be conducted by the Department of Business, Economic Development, and Tourism, the state agency administering the state’s CZM program.

Kauai General Plan

The Kauai General Plan (2000) provides guidance for land use regulations, the location and character of new development and facilities, and planning for county and state facilities and services. The General Plan is the primary policy directing long-range development, conservation, and the use and allocation of land and water resources in the County of Kauai. The General Plan establishes geographic areas of the county, which are intended to be used for various general purposes such as agriculture, resorts, urban communities, and the preservation of natural, cultural, and scenic resources. The General Plan includes two sets of policy maps: a Land Use Map and a Heritage Resources map.

The Land Use Map designates the steep slope on the property as Open and the relatively flat ridgetop as Agriculture. As stated in the General Plan, the intent of the Open designation is to preserve, maintain, or improve the natural characteristics of non-urban land and water areas that

- are of significant value to the public as scenic or recreational resources;
- perform essential physical and ecological functions important to the welfare of surrounding lands, waters, and biological resources;
- have the potential to create or exacerbate soil erosion or flooding on adjacent lands;
- are potentially susceptible to natural hazards such as flood, hurricane, tsunami, coastal erosion, landslide or subsidence; or
- form a cultural, historic, or archaeological resource of significant public value.

The intent of the Agriculture designation is to conserve land and water resources in order to ensure a resource base for existing and potential agricultural uses and to promote and preserve open agricultural lands as a key element of Kauai's rural character and lifestyle.

Heritage Resources Maps are intended to document important natural, scenic, and historic features, particularly in relation to the urban and agricultural lands which are developed or may be developed in the future. The Heritage Resources Map designates the slope as an Important Landform and the flat area (the site for the viewpoint) as Open Space, Parks, Agriculture, and Conservation. Kuhio Highway is designated as a Scenic Roadway Corridor. The Pooku *Heiau* is mapped south of the proposed viewpoint. The Refuge is identified as a major taro growing area and as the Hanalei National Wildlife Refuge and Registered Archaeological Complex on the NRHP.

To enhance the visitor's experience of Kauai, the county's policy, as described in the General Plan, is to develop or support development of regional visitor centers to provide guidance and assistance to visitors, as well as information about the region, its history, and culture by federal, state, or private agencies. The proposed viewpoint would be a regional visitor center developed through a county, state, and federal partnership.

5.3 Consistency with Federal Laws, Executive Orders, and Policies

Implementing the proposed action would comply with federal laws, regulations, and Executive Orders. The following section describes specifically how the proposed action of developing a new viewpoint would be in compliance with NEPA, NHPA, ESA, the Refuge Improvement Act, and other relevant federal laws, regulations, and Executive Orders.

<u>National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.)</u>

As a federal agency, the Service must comply with provisions of NEPA, as amended (42 U.S.C. 4321–4347). An environmental analysis is required under NEPA to evaluate reasonable alternatives that would meet stated objectives and to assess the possible physical, biological, social, and cultural impacts to the human environment. The NEPA process facilitates the involvement of government agencies and the public in the decision-making process. This EA meets NEPA requirements by examining and disclosing the anticipated effects to the human environment resulting from implementing the preferred alternative and by providing the public with an opportunity to review and comment on the proposed action.

<u>Executive Order 11593: Protection of Historical, Archaeological, and Scientific Properties and the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470-470x)</u>

Executive Order (EO) 11593 established the policy that the federal government provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the United States.

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. This includes complying with the NHPA and other cultural resource preservation laws and consulting with the SHPD and appropriate Native Hawaiian organizations over management actions which may affect cultural resources.

Pursuant to Section 106 of the NHPA and promulgated regulations, the Service has determined the proposed action constitutes an undertaking under the NHPA (36 CFR 800.3(a)), but would not adversely affect cultural resources/historic properties that occur nearby. The proposed action would comply with the NHPA because no cultural resources occur on the site of the proposed viewpoint, and off-site cultural resources would not be adversely affected.

A cultural resources monitor would be on-site at the beginning of construction activities and be on-call to immediately respond if anything unusual is unearthed. If a cultural resource were discovered during construction, activities in the area of the resource would be stopped and the SHPD would be contacted to determine how to proceed.

Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.).

The ESA directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA is the mechanism by which federal agencies ensure their actions do not jeopardize the existence of any listed species. Under Section 7, federal agencies consult with the Service or the National Marine Fisheries Service when any action they carry out, fund, or authorize may affect a listed species.

The Section 7 consultation concluded that implementing the proposed action may affect, but is not likely to adversely affect, nene, Newell's shearwater, Hawaiian dark-rumped petrel, and the Hawaiian hoary bat. Measures, as described in this EA, would be taken to minimize impacts to these species There would be no effect to listed waterbirds that nest, loaf, and forage on the Refuge. No listed plant species occur within the project area. This project would comply with the ESA because of the consultations performed and the incorporation of minimization measures into construction plans and specifications. The project would not jeopardize the existence of any listed species. A copy of the informal consultation for the proposed viewpoint is attached as Appendix C.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. § 9601 et seq.) and Secretarial Order 3127.

Secretarial Order (SO) 3127 and CERCLA require federal agencies to assess properties prior to acquisition for the presence of hazardous materials and to take remedial actions as necessary to protect human health and the environment. The proposed action would comply with SO 3127 and CERCLA because there are no known hazardous materials on the site, but to confirm that, prior to acquiring the land, the Service would comply with the requirements of the Department of the Interior Manual, Part 341, Chapter 3, Pre-Acquisition Environmental Site Assessments and conduct a Level I Environmental Site Assessment.

Executive Order 11988: Floodplain Management

EO 11988 requires federal agencies to avoid to the extent possible long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. The proposed action is

consistent with EO 11988 because the nearest floodplain is along the Hanalei River and would be unaffected by the proposed action.

Executive Order 11990: Protection of Wetlands

EO 11990 requires federal agencies to avoid to the extent possible long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The National Wetlands Inventory map identifies no wetlands on the site of the proposed viewpoint. The Hanalei Valley floor is mapped as a complex mix of palustrine and riverine wetlands, which do not extend up the slope. The project would comply with EO 11990 because there would be no impact to jurisdictional wetlands associated with constructing the proposed viewpoint.

Executive Order 12372: Intergovernmental Review

EO 12372 was issued with the goal of fostering an intergovernmental partnership by relying on state and local processes for the coordination and review of federal development projects. EO 12372 structures the federal government's system of consultation with state and local governments on its decisions involving grants, other forms of financial assistance, and direct development. Under EO 12372, states, in consultation with local governments, design their own review processes and select those federal financial assistance and direct development activities they wish to review. Since October 1, 1983, most states have acted to establish a review and comment system and identified a primary point of contact in response to EO 12372. Hawaii has chosen not to participate in the intergovernmental review process; however, this project has been developed in close coordination with state agencies.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-income Populations

All federal actions must address and identify, as appropriate, disproportionately high and adverse human or environmental effects of its programs, policies, and activities on minority populations, low-income populations, and Indian Tribes in the United States. The proposed action would comply with EO 12898 because the viewpoint would be constructed on vacant land and would be open to the public free of charge. Developing the proposed viewpoint would not result in displacements and would not have adverse human health or environmental effects on minority or low-income populations, native Hawaiians, or anyone else.

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Migratory bird conventions and the Migratory Bird Treaty Act (Act) impose substantive obligations on the United States for the conservation of migratory birds and their habitats. EO 13186 directs executive departments and agencies to take certain actions to further implement the Act, including supporting the conservation intent of the migratory bird conventions, restoring and enhancing the habitat of migratory birds, as practicable, and preventing or abating detrimental alteration of the environment for the benefit of migratory birds, as practicable. The proposed action is consistent with EO 13186 and would protect migratory birds by not lighting the viewpoint at night, which can disorient seabirds and cause them to fly into wires and poles. As migratory seabirds may fly over the site at night, this effect is avoided.

Executive Order 13112: Responsibilities of Federal Agencies Pertaining to Invasive Species.

EO 13112 requires federal agencies to prevent the introduction of invasive species and provide for their control and minimize the economic, ecological, and human health impacts that invasive species cause. The proposed action would be consistent with this EO because non-native invasive species would be removed and disposed of at a DOH-permitted disposal site and only native or non-native beneficial plant species would be used for landscaping. Erosion control techniques would be required to use certified weed-free straw or other mulching materials.

Executive Order 12996: Management and General Public Use of the National Wildlife Refuge System, and the National Wildlife Refuge Administration Act of 1966, as amended by the National Wildlife Refuge Improvement Act of 1997 (16 U.S.C. §§ 668dd-668ee).

A guiding principle of EO 12996 and the National Wildlife Refuge Improvement Act is that the Refuge System should provide opportunities for compatible wildlife-dependent recreational activities involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

The proposed action is consistent with EO 12996 because the viewpoint, which would be within Hanalei Valley NWR, would be dedicated to environmental education and interpretation and would provide opportunities for wildlife observation and photography. There are no existing wildlife-dependent public uses occurring on the site that would require the preparation of pre-acquisition compatibility determinations.

Permits and Approvals

The following permits or approvals will be required prior to construction of the project:

State

- Hawaii State Office of Planning–Coastal Zone Management Federal Consistency Determination
- DLNR, OCCL, Land Division–Conservation District Use Permit
- SDOH or HDOH, Clean Water Branch–National Pollutant Discharge Elimination System (NPDES) Permit and Clean Water Act Section 401 Water Quality Certification
- HDOT–Highway Access Request and Traffic Control Plan

County

- Planning Department, County of Kauai – Class 1 Zoning Permit
- Department of Public Works– Grading Permit, Stormwater

Utilities

- Kauai Island Utility Cooperative – Utility Relocation Request

CHAPTER 6. REFERENCES

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Appendix A

TRAFFIC IMPACT ANALYSIS REPORT
NEW HANALEI VALLEY VIEWPOINT
Hanalei, Kaua'i, Hawaii

DRAFT

November 9, 2018

Prepared for:

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TRAFFIC IMPACT ANALYSIS REPORT
NEW HANALEI VALLEY VIEWPOINT

Hanalei, Kaua'i, Hawaii

DRAFT

Prepared for

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Prepared by
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November 9, 2018

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C. LEVEL OF SERVICE CALCULATIONS

AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS
CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

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DRAFT TRAFFIC IMPACT ANALYSIS REPORT FOR NEW HANALEI VALLEY VIEWPOINT

Hanalei, Kaua‘i, Hawai‘i

1. INTRODUCTION

This report documents the findings of a traffic study conducted by Austin, Tsutsumi & Associates, Inc. (ATA) to evaluate the potential traffic impacts resulting from the proposed New Hanalei Valley Viewpoint Project (hereinafter referred to as the “Project”).

1.1 Project Description

The Project is located in Hanalei, east of Ka Haku Road and west of Kapaka Street on the island of Kaua‘i. The U.S. Fish and Wildlife Services (USFWS) Pacific Region is proposing to construct a new viewpoint along Kūhi‘ō Highway as part of the Hanalei National Wildlife Refuge. It is our understandings that this project would add a second viewpoint along Kūhi‘ō Highway. There is an Existing Viewpoint located about 0.5 miles west of the Project site, near Princeville Shopping Center.

The Project will provide two viewpoint areas and 25 parking spaces. Access to the Project site will be provided via Kūhi‘ō Highway. The Project is anticipating completion in 2020.

Figure 1.1 shows the Project location. Figure 1.2 shows the Project site plan.

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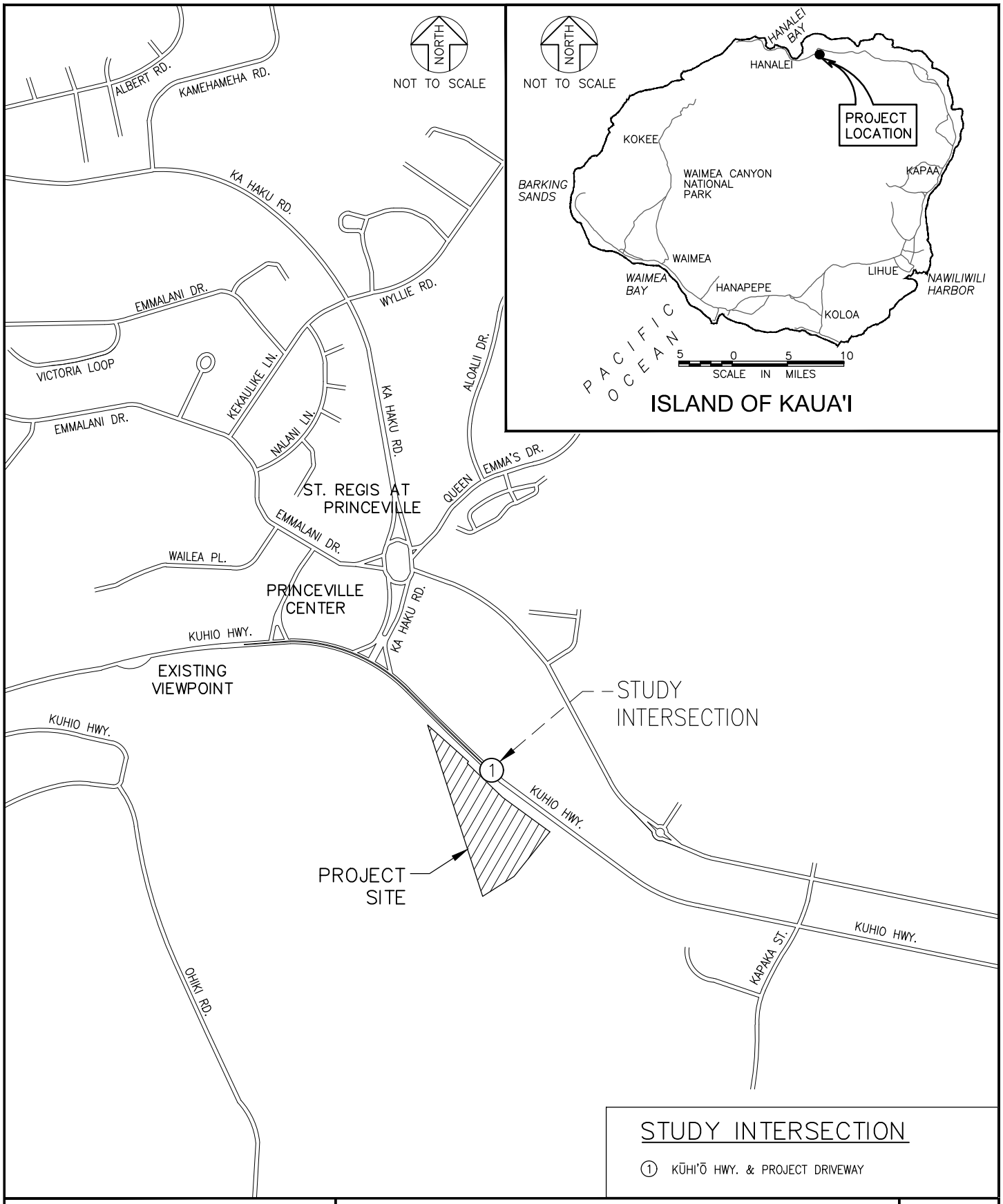

NEW HANALEI VALLEY VIEWPOINT TIAR

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LOCATION MAP

FIGURE 1.1

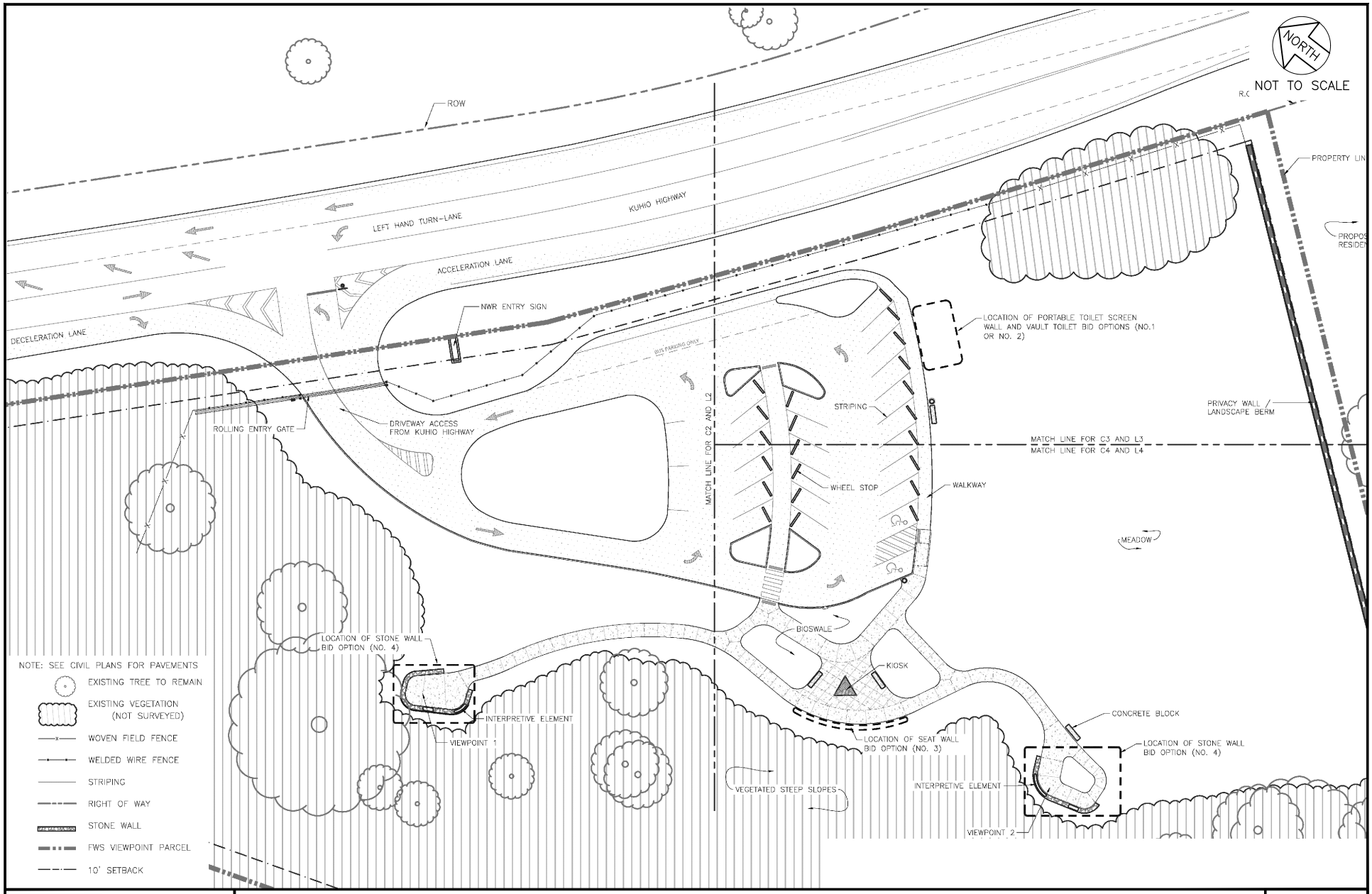

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FIGURE 1.2

SITE PLAN

2. EXISTING TRAFFIC CONDITIONS

2.1 Roadway Network

Kūhiʻō Highway – is generally an east-west, two-way, two-lane, undivided arterial roadway with a posted speed limit of 35 miles per hour (mph) in the vicinity of the Project. It serves as the only arterial roadway providing circulation between Haena State Park and Līhuʻe. Currently, no sidewalks or bike lanes are provided along Kūhiʻō Highway in the vicinity of the project.

2.2 Existing Traffic Volumes

Existing traffic volumes at the Existing Viewpoint Driveway/Kūhiʻō Highway intersection were collected on Tuesday, September 27, 2016.

Based on the collected data, the following peak hours were determined based on the traffic entering and exiting the Existing Viewpoint during the weekday:

- AM peak hour of traffic - 8:00 AM to 9:00 AM
- Mid-day peak hour of traffic – 12:15 PM to 1:15 PM
- PM peak hour of traffic – 3:45 AM to 4:45 PM.

Figure 2.1 shows the existing traffic volumes along Kūhiʻō Highway in the vicinity of the project. Traffic count data is provided in Appendix A.

2.3 Existing Traffic Conditions Analysis and Observations

The traffic patterns/operations at the Existing Viewpoint were observed and parking was full only during the Mid-day peak. During the busy Mid-day peak, it was noticed that a couple of groups of visitors (approximately ten (10) persons) used the Princeville Shopping Center parking lot located opposite and just east of the Existing Viewpoint. It was observed that 27 [120] (104) vehicles travel to/from the Existing Viewpoint during the AM [Mid-day] (PM) peak hours of traffic.

Vehicles traveling along Kūhiʻō Highway were measured[1] to be traveling between 40 - 45 mph in the vicinity of the Project.

[1] Observational measurements were taken with a radar gun. However, due to the small sample size, the speeds should not necessarily be used as a basis for design.

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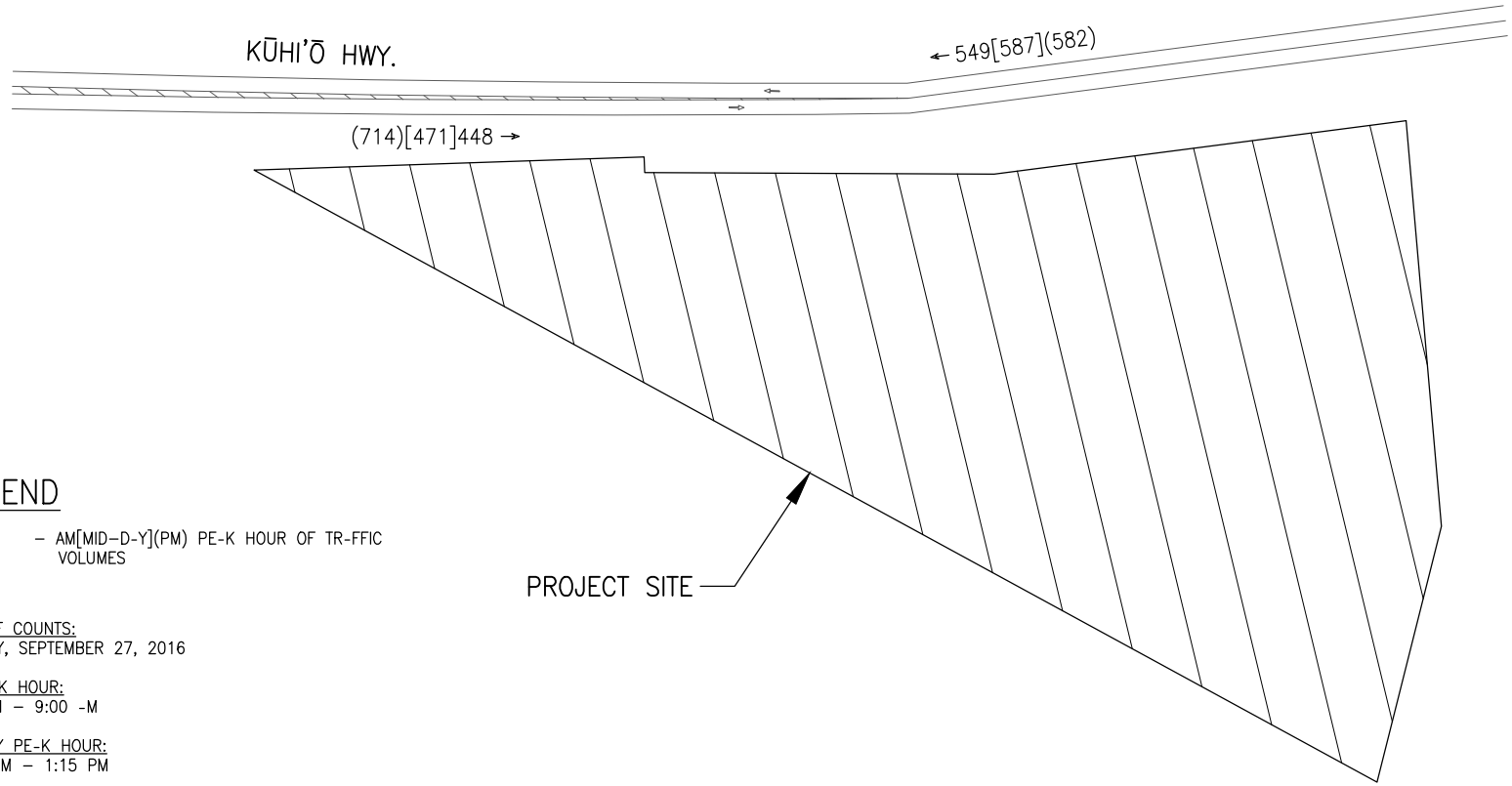

LEGEND

##(##) – AM[MID-D-Y](PM) PE-K HOUR OF TR-FFIC VOLUMES

DATE OF COUNTS:
TUESD-Y, SEPTEMBER 27, 2016

-M PEAK HOUR:
8:00 -M – 9:00 -M

MID-DAY PE-K HOUR:
12:15 PM – 1:15 PM

PM PEAK HOUR:
3:45 PM – 4:45 PM

NEW HANALEI VALLEY VIEWPOINT TIAR

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FIGURE 2.1

EXISTING LANE CONFIGURATION, TRAFFIC VOLUMES AND LOS

3. BACKGROUND TRAFFIC VOLUMES

3.1 Defacto Growth Rate

Projections for Year 2020 traffic were based upon the traffic model created for the Federal-Aid Highways 2035 Transportation Plan for the District of Kaua'i, prepared by CH2M Hill, dated July 2014. The model shows a growth rate of 0.8 percent per year between years 2007 and 2035. However, a more conservative defacto growth rate of 1.0 percent per year was applied to the existing traffic volumes.

3.2 Traffic Forecasts for Known Developments

Traffic projections from all known background projects in the vicinity of the Project at the time of this study were added to the existing roadway network in addition to the growth rates described in Section 3.1. Trips from the following known developments were included in the Year 2020 background traffic volumes.

- **Princeville Shopping Center and Affordable Housing** – This project is located north of Kūhiʻō Highway and west of the existing shopping center between Ka Haku Road and Hanalei Planation Road. The project proposes to provide a total of 133,000 SF of commercial/retail space including 63,000 square feet (SF) of new commercial/retail space and renovate a 24,340 SF building (grocery store). The Affordable Housing phase (44 units) was completed at the time the traffic counts for this report were taken.

- **Hanalei Plantation Resort** – This project is located on an approximately 65.5-arce parcel in Princeville, Hanalei, Hawaii. The project proposed to provide 34 single-family and 86 cottage units. The anticipated completion of this project was in Year 2015; however, an updated completion date is unknown but will be considered in this report.

- **Makana North Shore Clinic** – This project is located on Hanalei Plantation Road. The project proposes to develop an urgent care clinic and is expected to host a daily patient visit rate of up to 45 visitors per day. The clinic was recently opened in June 2018.

3.3 Planned Roadway Projects

Currently, no capacity-related improvements are planned for the study roadways within the vicinity of the Project according to the State of Hawaii, Department of Transportation (HDOT) Statewide Transportation Improvement Program (STIP) 2019-2022.

4. FUTURE YEAR 2020 TRAFFIC CONDITIONS

The future traffic conditions scenario represents the traffic conditions within the Project study area with full build-out of the Project, which is expected to occur by Year 2020.

4.1 Background

As previously mentioned in Section 1.1, the Project proposes to construct a new viewpoint along Kūhiʻō Highway as part of the Hanalei National Wildlife Refuge. The Project will provide two viewpoint areas and 25 parking spaces. Access to the Project site will be provided via Kūhiʻō Highway.

4.2 Travel Demand Estimations

4.2.1 Trip Generation

The Institute of Transportation Engineers (ITE) publishes trip rates, Trip Generation Manual, 10th Edition, based upon historical data from similar land uses. These trip rates/formulae and their associated directional distributions are typically used to estimate the increase in the number of vehicular trips generated by a proposed development. However, there are no similar land uses to a scenic viewpoint within the current ITE Trip Generation Manual. Thus, the trips generated for the new viewpoint are based on the Existing Viewpoint. The highest hourly volumes entering and exiting the Existing Viewpoint were used to estimate the new viewpoint trips, as opposed to using the volumes during the peak hour for the entire intersection.

The number of existing trips is increased by a factor of 2.5 since the number of spaces provided for the viewpoint increases from ten (10) spaces at the Existing Viewpoint to 25 spaces at the Project. See Table 4.1 for Project-generated trip projections.

Table 4.1: New Project-Generated Trips

New Viewpoint (25 parking spaces)			
	Enter	**Exit**	**Total**
AM Peak Hour	40	28	68
Mid-day Peak Hour	163	138	301
PM Peak Hour	141	121	262

The project is anticipated to generate 68 trips during the AM peak hour of traffic, 301 trips during the Mid-day peak hour of traffic, and 262 trips during the PM peak hour of traffic.

4.2.2 Trip Distribution

Trips generated by the Project were distributed throughout the study area based upon existing travel patterns within the vicinity of the Project. The traffic generated by the Project was added to the Year 2020 background traffic volumes within the vicinity of the Project to constitute the traffic volumes for the Future Year 2020 traffic conditions with the Project. Figure 4.1 illustrates the Project-generated trips.

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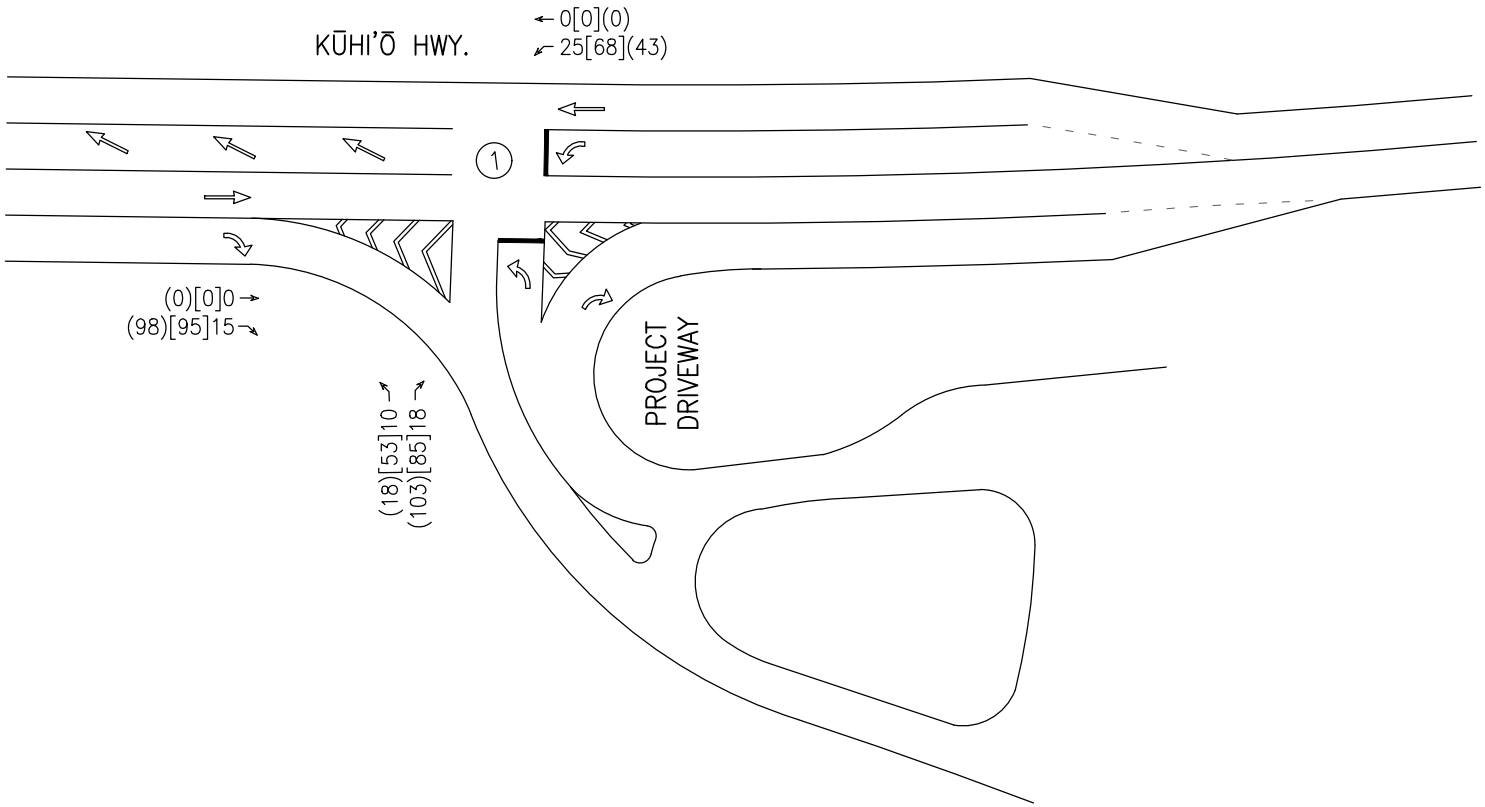

LEGEND

##[##](##)- AM[MID-D-Y](PM) PE-K HOUR OF TR-FFIC VOLUMES

NEW HANALEI VALLEY VIEWPOINT TIAR

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PROJECT-GENERATED TRIPS

FIGURE 4.1

4.3 Future Year 2020 Analysis

Based on the American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 2011 (hereinafter referred to as "2011 AASHTO Green Book") acceleration and deceleration lanes should be considered based on speeds, traffic volumes, percentage of trucks, capacity, type of highway, availability of right-of-way, service provided, and the arrangement and frequency of intersections. Kūhiʻō Highway is the main arterial connecting Haena State Park and Līhuʻe with an operating speed of 45 mph. The operating speed is assumed to be 10 mph above the posted speed limit (35 mph). Deceleration lanes at the Kūhiʻō Highway/Project Driveway intersection are recommended and analysis to support the recommendation is discussed below.

4.3.1 Deceleration Lane Analysis

Left-turn Deceleration Lane Analysis

The 2011 AASHTO Green Book provides guidelines for the design and recommendation of left-turn lanes at intersections. The recommendation for an exclusive left-turn lane is based on the following parameters:

- Operating Speed, mph, assumed to be 10 mph above the posted speed limit (35 mph);
- Advancing Volume, V_a, vph, vehicular volume approaching intersection from the same direction as the left-turn movement under consideration (includes left-turn volume);
- Opposing Volume, V_o,vph, vehicular volume opposing the advancing volume;
- Percent Left-turns, % LT, percentage of advancing volume turning left.

Table 4.2 shows the values of the parameters discussed above at the study intersections with projected Year 2020 traffic volumes during the AM, Mid-day, and PM peak hours of traffic and compares the advanced volume to the volume thresholds calculated in Table 4.3. An exclusive westbound left-turn lane is recommended at the Kūhiʻō Highway/Project Driveway intersection.

Table 4.2 Left-Turn Lane Parameters

		V_o (vph)	% LT	V_a (vph)
AM Peak Hour	Volumes	495	5%	620
	Threshold*			427
	LT Recommended?			**YES**
Mid-day Peak Hour	Volumes	565	10%	750
	Threshold*			303
	LT Recommended?			**YES**
PM Peak Hour	Volumes	780	7%	685
	Threshold*			280
	LT Recommended?			**YES**

**Threshold values are calculated as shown in Table 4.3.*

Table 4.3 2011 AASHTO Green Book Extrapolated Volumes

Scenario	Opposing Volume, V_o (VPH)	Advancing Volume, V_a (VPH)				
		5% Left-turn	7% Left-turn	10% Left-turn	13% Left-turn	20% Left-turn
	40-MPH OPERATING SPEED**					
	800	330		240		180
	600	410		305		225
	400	510		380		275
	45-MPH OPERATING SPEED**					
	800	305	273	225	209	173
PM	**780**		**280**			
	600	380	345	293	268	210
Mid-day	**565**			**303**		
AM	**495**	**427**				
	400	470	422	350	322	258
	50-MPH OPERATING SPEED**					
	800	280		210		165
	600	350		280		195
	400	430		320		240

Right-turn Deceleration Lane Analysis

Since the 2011 AASHTO Green Book doesn't provide volume guidance on recommendations for right-turn deceleration lanes, the National Cooperative Highway Research Program (NCHRP) Report 279: Intersection Channelization Design Guide, by the Transportation Research Board provides guidance on right-turn deceleration lanes. Figure 4-23 of the NCHRP Report 279 shows that right-turn deceleration lanes are recommended on two-lane highways when the total peak hour approach volume is greater than 600 vph and the right-turn peak hour volume is greater than 40 vph. Based on the projected traffic volume, the Mid-day and PM peak hours of traffic exceed this threshold. Therefore, an exclusive eastbound right-turn deceleration lane is recommended.

Figure 4.2 illustrates the proposed Kūhiʻō Highway/Project Driveway intersection layout with the acceleration and deceleration lanes as recommended.

4.3.2 Future Year Intersection Operations Analysis

Future performance of the study intersections was measured based on a Level of Service analysis. Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersection with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual (HCM), 6th Edition, includes methods for calculating volume to capacity ratios, delays, and corresponding LOS that were used in this study. LOS definitions for unsignalized intersections are provided in Appendix B.

Upon completion of the Project, the Kūhiʻō Highway/Project Driveway is expected to operate at LOS D or better during the AM, Mid-day, and PM peak hour of traffic by year 2020.

Table 4.4 summarizes the delay, V/C, and LOS at the study intersections for the Future Year 2020 conditions. Full LOS summary tables are provided in Appendix C.

Table 4.4 Future Year 2020 Conditions LOS

	AM			Mid-day			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
Kūhiʻō Highway/Project Driveway									
WB LT	8.6	0.03	A	9.1	0.08	A	9.9	0.06	A
NB LT	16.8	0.04	C	26.4	0.27	D	22.8	0.10	C
NB RT	-	-	A	-	-	A	-	-	A

4.4 Recommended Acceleration and Deceleration Lengths

The 2011 AASHTO Green Book provides guidelines for the design and recommendation of auxiliary lanes at intersections, which includes acceleration and deceleration lane lengths. The recommendation for auxiliary lane length is based on the following parameters.

- *Design Speed:* is typically 10 mph above the posted speed limit, which is 35 mph in the vicinity of the Project; therefore the design speed of 45 mph was assumed.

- *Storage Length (for deceleration only):* At unsignalized intersections, storage length is based on the number of turning vehicles likely to arrive in an average two-minute period within the peak hour.

- *Initial Speed (for acceleration only):* The speed the vehicles are traveling at the beginning of the acceleration lane which is assumed to be 14 mph.

4.4.1 Deceleration Length

Based on Table 9-22 of the 2011 AASHTO Green Book, a deceleration length of 350 feet is recommended for a design speed of 45 mph.

Westbound left-turn lane:

Approximately 70 vehicles are forecast to travel through the westbound left-turn lane during the heavier mid-day peak hour of traffic. Therefore, based on the criteria of deceleration storage length above, three (3) vehicles are estimated to arrive within a two-minute period yielding a storage length of 75 feet (assumed 25 feet per vehicle). Combining the deceleration length of 350 feet and the 75 feet of storage, the left-turn lane should is recommended to provide 425 feet of storage/deceleration.

Eastbound right-turn lane:

Approximately 100 vehicles are forecast to travel through the intersection during the heavier PM peak hour of traffic. Since the eastbound right-turn is an uncontrolled movement, it is recommended that at a minimum adequate deceleration length (350 feet) is provided for the eastbound right-turn lane.

4.4.2 Acceleration Length

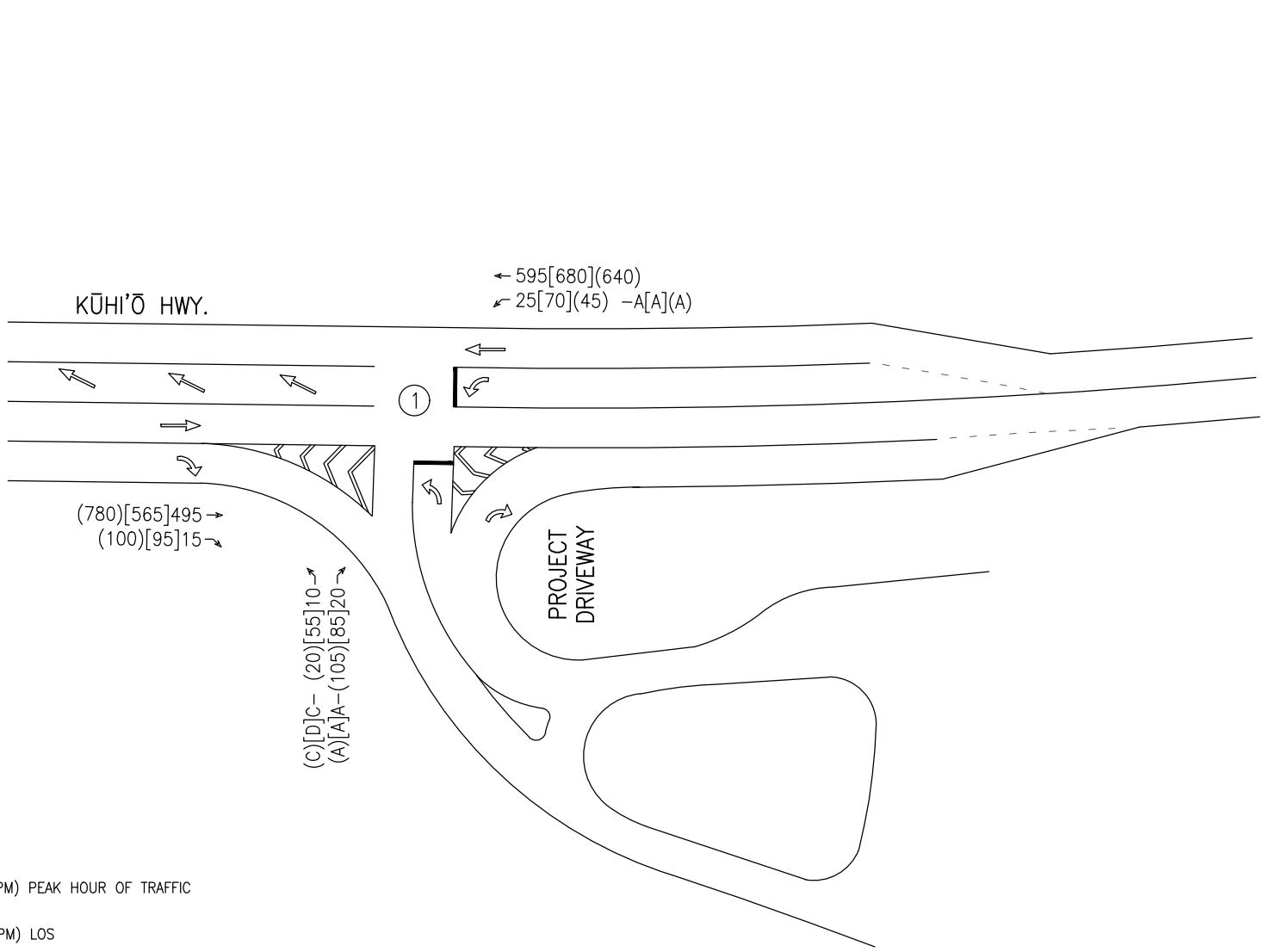
Northbound right-turn receiving lane:

Based on Table 10-3 of the 2011 AASHTO Green Book, an acceleration length of 490 feet is recommended for a design speed of 45 mph and an initial speed of 14 mph. An initial speed of 14 mph was assumed since the northbound right-turn vehicles are not required to yield to oncoming vehicles, they will not be at a stopped condition. The recommended acceleration length for both the northbound right-turn receiving lane is 490 feet.

Northbound left-turn receiving lane:

Based on Table 10-3 of the 2011 AASHTO Green Book, an acceleration length of 560 feet is recommended for a design speed of 45 mph from a stopped condition. The recommended acceleration length for the northbound left-turn receiving lane is 560 feet.

Sight distance evaluation at the Project Driveway is not included in this report. Sight distance evaluation should be performed by the designer once the design is finalized prior to construction.



LEGEND

##[##](##)– AM[MID–DAY](PM) PEAK HOUR OF TRAFFIC VOLUMES

X[X](X) – AM[MID–DAY](PM) LOS

(Y) – UNSIGNALIZED INTERSECTION Y

NEW HANALEI VALLEY VIEWPOINT TIAR

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

FIGURE 4.2

FUTURE YEAR, TRAFFIC VOLUMES AND LOS

5. CONCLUSIONS AND RECOMMENDATIONS

Existing Conditions

Existing traffic volumes along Kūhiʻō Highway in the vicinity of the Project were collected in 2016.

The traffic patterns/operations at the Existing Viewpoint were observed and parking was full only during the Mid-day peak. During the busy Mid-day peak, it was noticed that a couple of groups of visitors (approximately ten (10) persons) used the Princeville Shopping Center parking lot located opposite and just east of the Existing Viewpoint. It was observed that 27 [120] (104) vehicles travel to/from the Existing Viewpoint during the AM [Mid-day] (PM) peak hours of traffic.

Vehicles traveling along Kūhiʻō Highway were measured[2] to be traveling between 40 - 45 mph in the vicinity of the Project.

Year 2020 Traffic Volumes

This TIAR anticipates completion of the Project by Year 2020. Traffic volumes within the vicinity of the Project are anticipated to experience approximately 1.0 percent growth per year based on the Federal-Aid Highways 2035 Transportation Plan for the District of Kauaʻi. Additionally, it is assumed that the Princeville Shopping Center and Affordable Housing Project, the Hanalei Village Resort Project, and the Makana North Shore Clinic Project will be completed. Trips from these known developments were included in the Year 2020 background traffic volumes.

Currently, no capacity-related improvements are planned for the study roadways within the vicinity of the Project according to HDOT STIP.

Future Year 2020 Traffic Conditions

The Project proposes to construct a new viewpoint along Kūhiʻō Highway as part of the Hanalei National Wildlife Refuge. It is our understandings that this project would add a second viewpoint along Kūhiʻō Highway. There is an Existing Viewpoint located about 0.5 miles west of the Project site, near Princeville Shopping Center.

The Project will provide two viewpoint areas and 25 parking spaces. Access to the Project site will be provided via Kūhiʻō Highway. The Project is anticipating completion in 2020.

The project is anticipated to generate 68 trips during the AM peak hour of traffic, 301 trips during the Mid-day peak hour of traffic, and 262 trips during the PM peak hour of traffic.

Acceleration and deceleration lengths are recommended for the following movements at the Kūhiʻō Highway/Project Driveway intersection:

- Westbound left-turn deceleration length of 425 feet
- Eastbound right-turn deceleration length of 350 feet
- Northbound left-turn acceleration length of 560 feet

[2] Observational measurements were taken with a radar gun. However, due to the small sample size, the speeds should not necessarily be used as a basis for design.

- Northbound right-turn acceleration length of 490 feet

Upon completion of the Project, the Kūhiʻō Highway/Project Driveway is expected to operate at LOS D or better during the AM, Mid-day, and PM peak hour of traffic by year 2020.

Sight distance evaluation at the Project Driveway is not included in this report. Sight distance evaluation should be performed by the designer once the design is finalized prior to construction.

6. REFERENCES

1. CH2M Hill, Federal-Aid Highways 2035 Transportation Plan for the District of Kaua'i, July 2014.
2. Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
3. The American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 2011.
4. Transportation Research Board of the National Academies, National Cooperative Highway Research Program (NCHRP) Report 279, November 1985.
5. Transportation Research Board, Highway Capacity Manual, 6th Edition, 2016.

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A P P E N D I C E S

APPENDIX A

TRAFFIC COUNT DATA

AUSTIN TSUTSUMI & ASSOCIATES

501 Sumner Street, Suite 521
Honolulu, HI 96817-5031
Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM_Hanalei Viewpoint Dwy - Kuhio Hwy
Site Code : 00000000
Start Date : 9/27/2016
Page No : 1

Groups Printed- Unshifted - Bank 1

	HANALEI VIEWPOINT DWY Southbound				KUHIO HWY Westbound				HANALEI VIEWPOINT DWY Northbound				KUHIO HWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	0	0	0	0	74	0	0	0	0	1	0	0	38	0	0	113
07:15 AM	8	0	10	0	1	78	9	0	2	0	0	0	7	36	0	0	151
07:30 AM	0	0	0	0	1	120	0	0	1	0	0	0	0	59	0	0	181
07:45 AM	0	0	0	0	0	77	0	0	0	0	1	0	0	79	1	0	158
Total	8	0	10	0	2	349	9	0	3	0	2	0	7	212	1	0	603
08:00 AM	0	0	0	0	2	75	0	0	2	0	0	0	0	64	0	0	143
08:15 AM	0	0	0	0	1	77	0	0	1	0	1	0	0	47	1	0	128
08:30 AM	0	0	0	0	2	85	0	0	0	0	4	0	0	61	4	0	156
08:45 AM	0	0	0	0	5	87	0	0	1	0	2	0	0	42	1	0	138
Total	0	0	0	0	10	324	0	0	4	0	7	0	0	214	6	0	565
Grand Total	8	0	10	0	12	673	9	0	7	0	9	0	7	426	7	0	1168
Apprch %	44.4	0	55.6	0	1.7	97	1.3	0	43.8	0	56.2	0	1.6	96.8	1.6	0	
Total %	0.7	0	0.9	0	1	57.6	0.8	0	0.6	0	0.8	0	0.6	36.5	0.6	0	
Unshifted	8	0	10	0	12	673	9	0	7	0	9	0	7	426	7	0	1168
% Unshifted	100	0	100	0	100	100	100	0	100	0	100	0	100	100	100	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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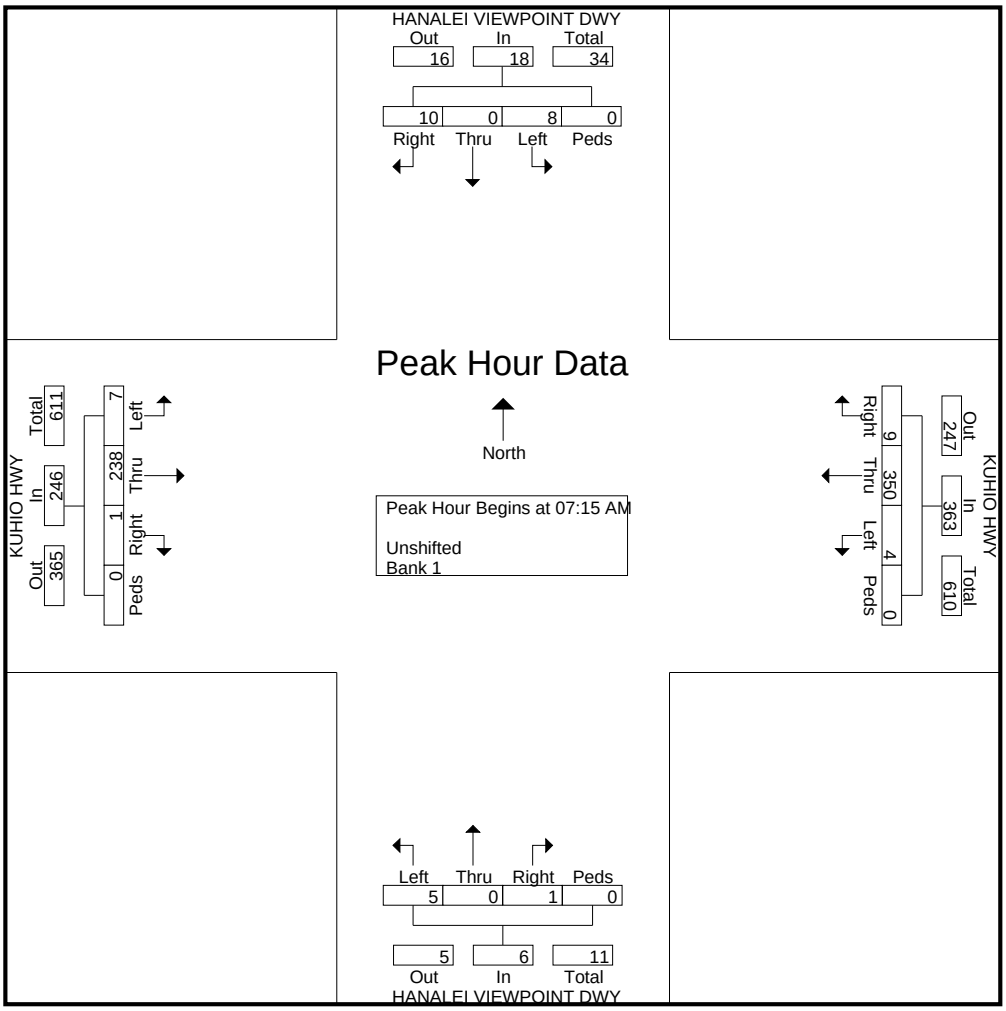
Start Date : 9/27/2016
Page No : 2

	HANALEI VIEWPOINT DWY Southbound					KUHIO HWY Westbound					HANALEI VIEWPOINT DWY Northbound					KUHIO HWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**8**	0	**10**	0	**18**	1	78	**9**	0	88	**2**	0	0	0	**2**	**7**	36	0	0	43	151
07:30 AM	0	0	0	0	0	1	**120**	0	0	**121**	1	0	0	0	1	0	59	0	0	59	**181**
07:45 AM	0	0	0	0	0	0	77	0	0	77	0	0	**1**	0	1	0	**79**	**1**	0	**80**	158
08:00 AM	0	0	0	0	0	**2**	75	0	0	77	2	0	0	0	2	0	64	0	0	64	143
Total Volume	8	0	10	0	18	4	350	9	0	363	5	0	1	0	6	7	238	1	0	246	633
% App. Total	44.4	0	55.6	0		1.1	96.4	2.5	0		83.3	0	16.7	0		2.8	96.7	0.4	0		
PHF	.250	.000	.250	.000	.250	.500	.729	.250	.000	.750	.625	.000	.250	.000	.750	.250	.753	.250	.000	.769	.874



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Start Date : 9/27/2016
Page No : 1

Groups Printed- Unshifted - Bank 1

	HANALEI VIEWPOINT DWY Southbound				KUHIO HWY Westbound				HANALEI VIEWPOINT DWY Northbound				KUHIO HWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
11:15 AM	0	0	0	0	5	91	0	0	2	0	7	14	0	66	5	0	190
11:30 AM	0	0	0	0	5	97	0	0	6	0	10	6	0	64	4	0	192
11:45 AM	0	0	0	0	10	82	0	0	6	0	2	0	0	70	2	0	172
Total	0	0	0	0	20	270	0	0	14	0	19	20	0	200	11	0	554
12:00 PM	0	0	0	0	10	74	0	0	3	0	7	0	0	47	5	0	146
12:15 PM	0	0	0	0	13	81	0	0	7	0	8	0	0	60	14	1	184
12:30 PM	0	0	0	0	5	93	0	0	4	0	10	0	0	77	8	0	197
12:45 PM	0	0	0	0	4	104	0	0	6	0	6	0	0	74	9	0	203
Total	0	0	0	0	32	352	0	0	20	0	31	0	0	258	36	1	730
01:00 PM	0	0	0	0	5	80	0	0	4	0	10	1	0	86	7	0	193
Grand Total	0	0	0	0	57	702	0	0	38	0	60	21	0	544	54	1	1477
Apprch %	0	0	0	0	7.5	92.5	0	0	31.9	0	50.4	17.6	0	90.8	9	0.2	
Total %	0	0	0	0	3.9	47.5	0	0	2.6	0	4.1	1.4	0	36.8	3.7	0.1	
Unshifted	0	0	0	0	57	702	0	0	38	0	60	21	0	544	54	1	1477
% Unshifted	0	0	0	0	100	100	0	0	100	0	100	100	0	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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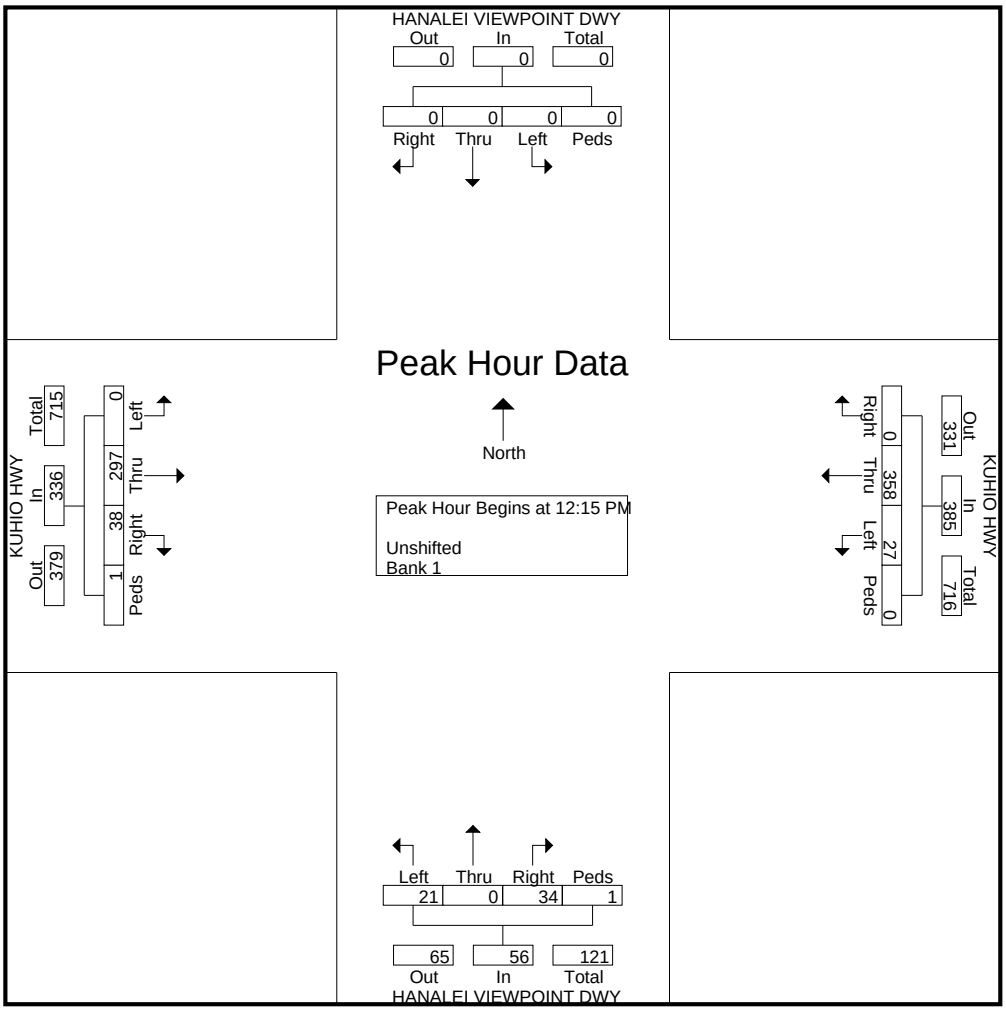
Site Code : 00000000
Start Date : 9/27/2016
Page No : 2

	HANALEI VIEWPOINT DWY Southbound					KUHIO HWY Westbound					HANALEI VIEWPOINT DWY Northbound					KUHIO HWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:15 AM to 01:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	0	0	0	0	0	**13**	81	0	0	94	**7**	0	8	0	**15**	0	60	**14**	**1**	75	184
12:30 PM	0	0	0	0	0	5	93	0	0	98	4	0	**10**	0	14	0	77	8	0	85	197
12:45 PM	0	0	0	0	0	4	**104**	0	0	**108**	6	0	6	0	12	0	74	9	0	83	**203**
01:00 PM	0	0	0	0	0	5	80	0	0	85	4	0	10	**1**	15	0	**86**	7	0	**93**	193
Total Volume	0	0	0	0	0	27	358	0	0	385	21	0	34	1	56	0	297	38	1	336	777
% App. Total	0	0	0	0		7	93	0	0		37.5	0	60.7	1.8		0	88.4	11.3	0.3		
PHF	.000	.000	.000	.000	.000	.519	.861	.000	.000	.891	.750	.000	.850	.250	.933	.000	.863	.679	.250	.903	.957



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File Name : PM_Hanalei Viewpoint Dwy - Kuhio Hwy
Site Code : 00000000
Start Date : 9/27/2016
Page No : 1

Groups Printed- Unshifted - Bank 1

	HANALEI VIEWPOINT DWY Southbound				KUHIO HWY Westbound				HANALEI VIEWPOINT DWY Northbound				KUHIO HWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
03:00 PM	0	0	0	0	5	103	0	0	2	0	10	0	0	132	9	0	261
03:15 PM	0	0	0	0	6	87	0	0	4	0	5	0	0	111	7	0	220
03:30 PM	0	0	0	0	2	105	0	0	1	0	5	0	0	106	4	0	223
03:45 PM	0	0	0	0	3	117	0	0	1	0	9	0	0	97	10	0	237
Total	0	0	0	0	16	412	0	0	8	0	29	0	0	446	30	0	941
04:00 PM	0	0	0	0	3	96	0	0	2	0	11	0	0	129	10	0	251
04:15 PM	0	0	0	0	7	92	0	0	3	0	11	0	0	112	10	0	235
04:30 PM	0	0	0	0	4	91	0	0	1	0	10	0	0	110	9	0	225
04:45 PM	0	0	0	0	3	70	0	0	3	0	11	0	0	102	4	0	193
Total	0	0	0	0	17	349	0	0	9	0	43	0	0	453	33	0	904
Grand Total	0	0	0	0	33	761	0	0	17	0	72	0	0	899	63	0	1845
Apprch %	0	0	0	0	4.2	95.8	0	0	19.1	0	80.9	0	0	93.5	6.5	0	
Total %	0	0	0	0	1.8	41.2	0	0	0.9	0	3.9	0	0	48.7	3.4	0	
Unshifted	0	0	0	0	33	761	0	0	17	0	72	0	0	899	63	0	1845
% Unshifted	0	0	0	0	100	100	0	0	100	0	100	0	0	100	100	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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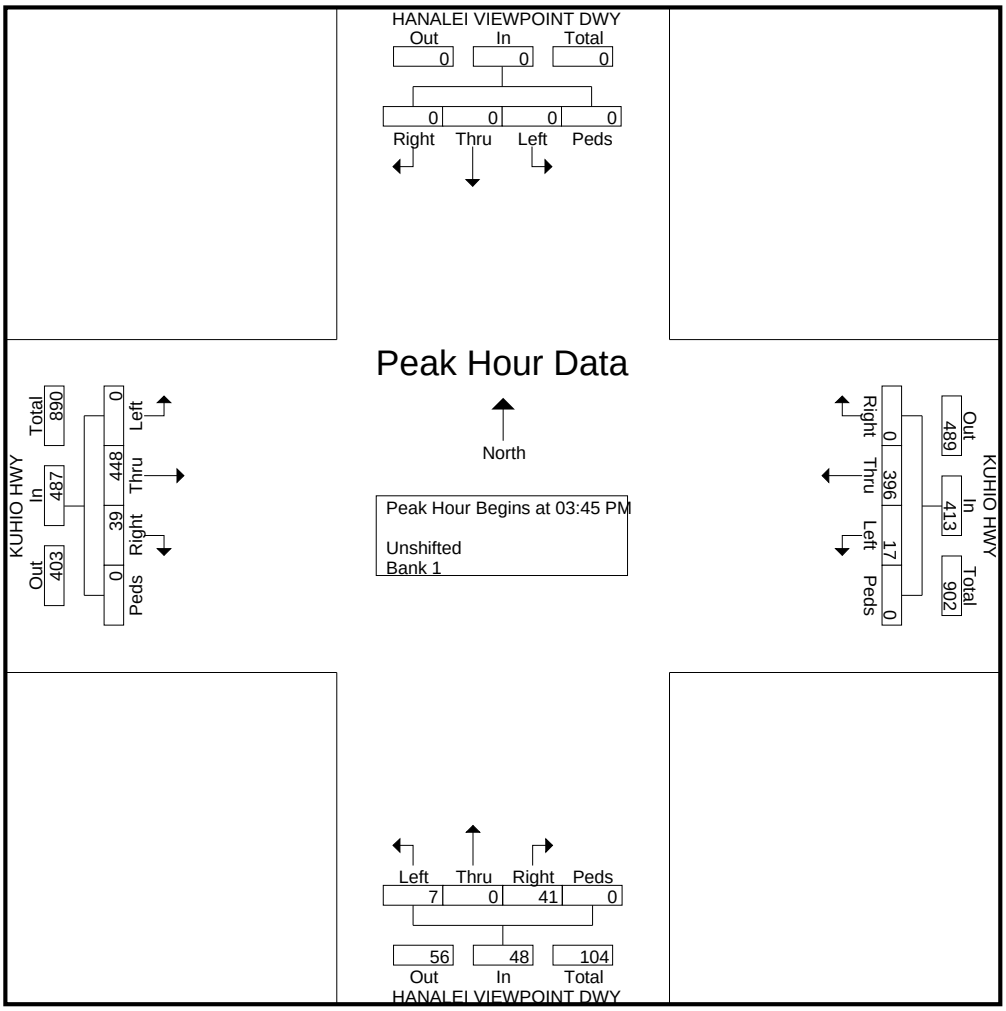
Page No : 2

	HANALEI VIEWPOINT DWY Southbound					KUHIO HWY Westbound					HANALEI VIEWPOINT DWY Northbound					KUHIO HWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	0	0	0	0	3	**117**	0	0	**120**	1	0	9	0	10	0	97	**10**	0	107	237
04:00 PM	0	0	0	0	0	3	96	0	0	99	2	0	**11**	0	13	0	**129**	10	0	**139**	**251**
04:15 PM	0	0	0	0	0	**7**	92	0	0	99	**3**	0	11	0	**14**	0	112	10	0	122	235
04:30 PM	0	0	0	0	0	4	91	0	0	95	1	0	10	0	11	0	110	9	0	119	225
Total Volume	0	0	0	0	0	17	396	0	0	413	7	0	41	0	48	0	448	39	0	487	948
% App. Total	0	0	0	0		4.1	95.9	0	0		14.6	0	85.4	0		0	92	8	0		
PHF	.000	.000	.000	.000	.000	.607	.846	.000	.000	.860	.583	.000	.932	.000	.857	.000	.868	.975	.000	.876	.944



APPENDIX B

LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE (LOS) CRITERIA

VEHICULAR LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 6th Edition)

The level of service criteria for vehicles at unsignalized intersections is defined as the average control delay, in seconds per vehicle.

LOS delay threshold values are lower for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections than those of signalized intersections. This is because more vehicles pass through signalized intersections, and therefore, drivers expect and tolerate greater delays. While the criteria for level of service for TWSC and AWSC intersections are the same, procedures to calculate the average total delay may differ.

Level of Service Criteria for Two-Way Stop-Controlled Intersections

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50

APPENDIX C

LEVEL OF SERVICE CALCULATIONS

Intersection	
Int Delay, s/veh	0.3

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	495	15	25	595	10	20
Future Vol, veh/h	495	15	25	595	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	150	150	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	544	16	27	654	11	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	544	0	1252	-
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	1025	-	190	0
Stage 1	-	0	-	-	582	0
Stage 2	-	0	-	-	488	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1025	-	185	-
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	488	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.3	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	SET
Capacity (veh/h)	315	-	1025	-	-
HCM Lane V/C Ratio	0.035	-	0.027	-	-
HCM Control Delay (s)	16.8	0	8.6	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	565	95	70	680	55	85
Future Vol, veh/h	565	95	70	680	55	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	150	150	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	621	104	77	747	60	93

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	621	0	1522	-
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	901	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	960	-	130	0
Stage 1	-	0	-	-	536	0
Stage 2	-	0	-	-	396	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	960	-	120	-
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	396	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.8	26.4
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	SET
Capacity (veh/h)	228	-	960	-	-
HCM Lane V/C Ratio	0.265	-	0.08	-	-
HCM Control Delay (s)	26.4	0	9.1	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	1	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	780	100	45	640	20	105
Future Vol, veh/h	780	100	45	640	20	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	150	150	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	857	110	49	703	22	115

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	857	0	1658	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	801	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	0	783	-	107	0
Stage 1	-	0	-	-	416	0
Stage 2	-	0	-	-	442	0
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	783	-	100	-
Mov Cap-2 Maneuver	-	-	-	-	224	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	442	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.7	22.8
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	SET
Capacity (veh/h)	224	-	783	-	-
HCM Lane V/C Ratio	0.098	-	0.063	-	-
HCM Control Delay (s)	22.8	0	9.9	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	-	-

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Appendix B

ARCHAEOLOGICAL INVENTORY SURVEY OF AN APPROXIMATELY 5 ACRE PARCEL OF THE PROPOSED HANALEI VALLEY SCENIC STOP, KŪHIŌ HIGHWAY, HANALEI *AHUPUA'A*, HALELE'A DISTRICT, KAUA'I (TMK 5-3-01:16)

by

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Prepared for

Parsons Brinckerhoff Quade & Douglas, Inc.

Cultural Surveys Hawai'i, Inc.

November, 2000

ABSTRACT

At the request of Parsons Brinckerhoff Quade & Douglas, Inc., Cultural Surveys Hawai'i, Inc. carried out an archaeological inventory survey of an approximately 5-acre parcel (TMK 5-3-01:16) of Princeville Resort lands at Hanalei, Kaua'i proposed for a scenic stop on the south side of Kūhiō Highway on the northeast rim of Hanalei Valley overlooking the valley. The property is situated on land which ranges from 250-360 feet above sea level. The land is fairly level near the highway and drops steeply at the southwestern edge of the project area.

Historic research indicated no known historic properties within the project area although an extensive site complex (50-30-03-1015) was identified just downslope (outside of the project area). The project area was subjected to a 100% pedestrian archaeological inventory survey and no surface archaeological sites of any kind were identified. The potential for subsurface archaeological deposits is regarded as exceedingly low. No significant archaeological sites are believed to exist within the project area. Any possible impact to Site 50-30-03-139, Po'okū *Heiau* was specifically evaluated and it was concluded that this project will have no impact on Po'okū *Heiau* which lies more than 300 m distant and appears to be oriented toward the east (the opposite direction).

While no archaeological sites or concerns were identified in the project area *per se* the need to avoid adverse impact to site 50-30-03-1015 further downslope is pointed out.

ACKNOWLEDGEMENTS

We would like to acknowledge Mr. Clyde Shimizu and Mr. Jason Yazawa of Parsons Brinckerhoff Quade & Douglas, Inc. for supplying maps and aerial photo of the projectr area and facilitating our field work. Our thanks also to Mr. Michael Loo of Princeville Resort for facilitating our right-of-entry to Princeville lands for this project.

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I. INTRODUCTION

At the request of Parsons Brinckerhoff Quade & Douglas, Inc.. Cultural Surveys Hawai`i, Inc. carried out an archaeological inventory survey of an approximately 5-acre parcel (TMK 5-3-01:16) of Princeville Resort lands at Hanalei, Kaua`i proposed for a scenic stop on the south side of Kūhiō Highway on the northeast rim of Hanalei Valley overlooking the valley (Figures 1, 2 and 3). Fieldwork was carried out by two Cultural Surveys Hawai`i archaeologists, David W. Shideler, M.A. and Antony Bush, B.A. on August 16, 2000.under the overall supervision of Hallett H. Hammatt, Ph. D.

II. NATURAL SETTING

A. Project Area

The project area is located in the *ahupua`a* of Hanalei in the Halele`a District. The project location is situated on an eastern bluff, overlooking Hanalei Valley, south of and adjacent to Kūhiō Highway. The property currently lies on Princeville Resort lands and is accessed from Kūhiō Highway (Figures 1 & 2).

The soil is classified as Rough Mountainous Land (rRT) characterized by steep land dissected by intermittent drainages, thin soil layers ranging from 1-10 inches in thickness over saprolite. This saprolite is conducive to vegetative growth (Foote *et al.*, 1972). Average annual rainfall levels in this area range from 1500-2000 mm/year (between 60 and 80 inches/year).

The property is situated on land which ranges from 250-360 feet above sea level. The land is fairly level near the highway and drops steeply at the southwestern edge of the project area.

B. Hanalei *Ahupua`a*

Hanalei *Ahupua`a* - encompassing 68.5 sq. kilometers of land - is situated between the latitudes 22°13' north; 22°4'30" south; and longitudes 159°27'30" east and 159°31' west. It is bounded to the west by Waioli *Ahupua`a* and on the east by Kalihikai *Ahupua`a*. The *ahupua`a* is amphitheater-shaped, defined by the ridges surrounding the Hanalei River. It extends from sea level in the north at Hanalei Bay to the top of Mt. Wai`ale`ale (5148 ft.) in the south. Three-quarters of the *ahupua`a* lies in the Halele`a Forest Reserve. This valley is a typical windward valley with one large perennial stream - Hanalei River - fed by many tributaries. "Perhaps 9 km inland, the valley widens somewhat and the stream begins to meander. Here there are considerable alluvial deposits in the bends of the stream" (Earle 1978:34). Alluvial floodplains are located on both sides of the river as it meanders down to Hanalei Bay.

The annual rainfall of Hanalei ranges from 75 in. to as much as 450 in. at the summit of Wai`ale`ale (considered to be one of the world's rainiest spots) (Foote *et al.* 1972:6).

Figure 1 Portion of USGS Hanalei Quad Showing Location of Project Area

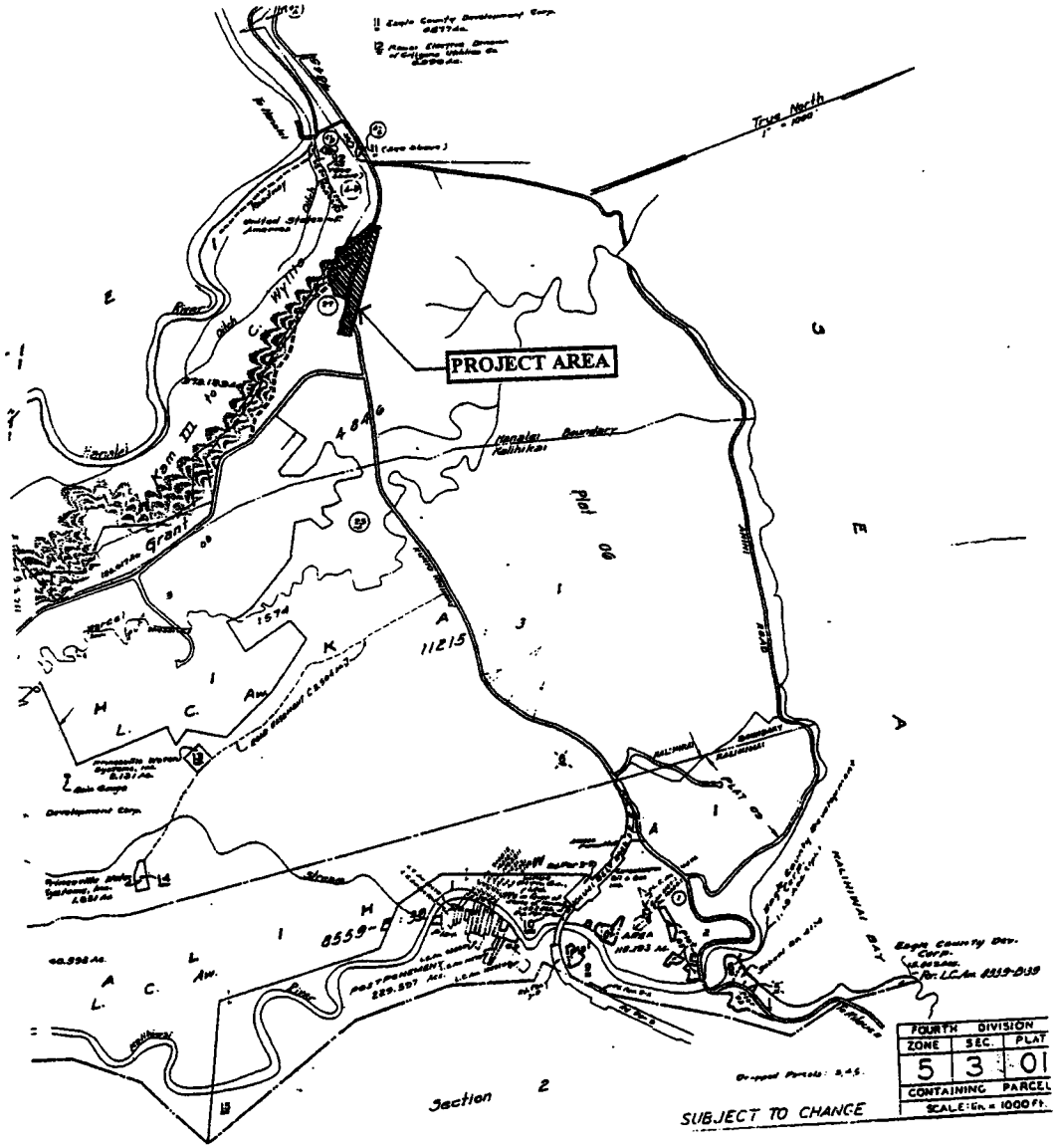

Figure 2 Portion of Tax Map Key (TMK) 5-3-01 Showing Location of Project Area

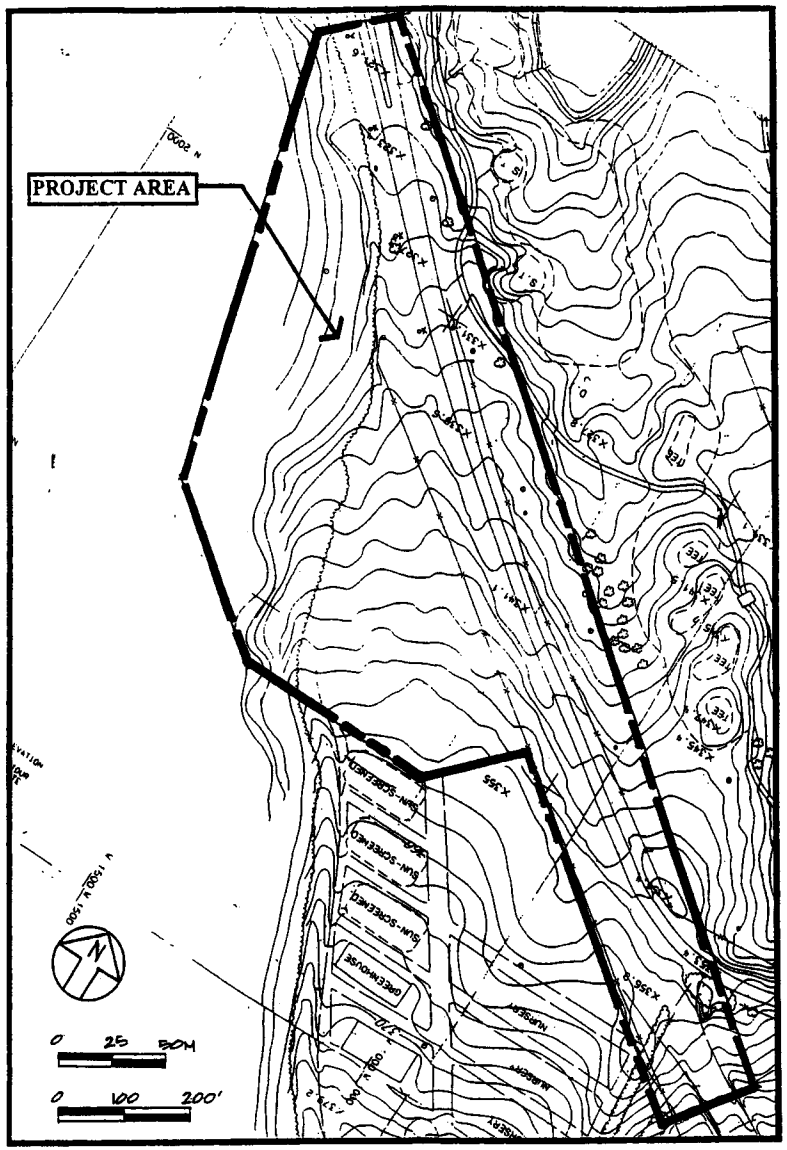

Figure 3 Map of Project Area

Soils of Hanalei consist of the Jaucas-Mokuleia association in the coastal plains, the Hanalei-Kolokolo-Pakala association along the river bottoms and edges, and Rough mountainous land-Rough broken land-Rock outcrop association (Foote *et al.* 1972:3-6).

Earle (1978:29) classifies the vegetation of Hanalei according to three communities: " 1) the coastal community, restricted to the sandy soils near the sea, 2) the lowland community, found on alluvial soils along the valley bottoms, and 3) the upland community, located on the rolling, heavily eroded upland soils." Vegetation within the coastal community include such species as ironwood (*Casuarina equisetifolia*), and *naupaka kahakai* (*Scaevola sericea*). Lowland community vegetation include such species as *hau* (*Hibiscus tiliaceous*), *kukui* (*Aleurites moloccana*), java plum (*Syzgium cuminii*) and mango (*Mangifera indica*), and various grasses. Upland community vegetation include such species as *`ōhi`a lehua* (*Metrosideros polymorpha*) and *uluhe* (*Dicranopteris linearis*).

Hanalei River is the fourth largest stream in the State based on the amount of water discharged (Stream Assessment Draft Report of 1990, State of Hawaii and National Park Service: 27).

C. Kalihikai *ahupua`a*

Although the project area is located within the *ahupua`a* of Hanalei. the geography of the project location links it more with the land use patterns of Kalihikai *Ahupua`a*. Kalihikai is a moderate-sized *ahupua`a*. also in the Halele`a District, situated between the *ahupua`a* of Hanalei and Kalihiwai. The *ahupua`a* boundary extends from the sea up across the plains and up to the highest point of the *ahupua`a*, Kapaka (1000' elevation), the location of a *heiau*. The boundary line then drops back through the plains to the beach, through a channel in the reef that divides Kalihikai and Hanalei (Wichman, 1998:107). The *ahupua`a* spans 2,363 acres and has no large stream, rather three small streams which drain into an alluvial flat close to the sea (Earle, 1978). The interior of the *ahupua`a* provides catchment areas which drain into the neighboring *ahupua`a* of Kalihiwai and Hanalei.

The annual rainfall in Kalihikai *Ahupua`a* ranges between 70 in. along the coast to 150 in. in the *mauka* regions (Foote *et al.*, 1972:114).

The soils of this *ahupua`a* consist of the Pooku Series silty clay found in the interior region, the Makapili silty clay associated with the uplands and the Rough Broken Land and Rough Mountainous Land associated with the sloped areas descending into gulches and coastal plains (Foote *et al.*, 1972: 88, 114, 119).

The description of the vegetation of the Hanalei *Ahupua`a* applies to the Kalihikai *Ahupua`a* plant communities as well, though it is necessary to emphasize the Kalihikai upland vegetation as it covers the largest area in the *ahupua`a* and includes the vegetation of the current project area. Earle (1978: 29) describes the vegetation of the upland community as dominated by guava, grasses and native *Pandanus*. "Various nineteenth century accounts described an extensive *Pandanus* forest covering the latosolic uplands of Hanalei, Kalihikai, and Kalihiwai. More recently, this area has been converted to pasture land" (Earle, 1978: 29).

III. HISTORICAL BACKGROUND

A. Pre-Contact and Early Contact Periods

The land and waters of Hanalei, at 68.5 km^2 the largest *ahupua`a* in the *moku* of Halele`a, had long afforded exceptional possibilities for agricultural and cultural development by the Hawaiians of Kaua`i during the centuries before Euro-American contact. E.S. Craighill and Elizabeth Handy present the *ahupua`a* resources that pre-contact Hawaiians utilized and amplified:

> Hanalei is unique on Kaua`i in having a broad river flowing into a magnificent level seaward area...The flats had been the taro *lo`i* of the Hawaiians, amply irrigated by ditches from the Hanalei River...
>
> Because of an abundance of foods of all sorts, Hanalei was, and still is, one of the most attractive dwelling places in the islands. In addition to its rich lands and water resources, and its beautiful beach, it was close enough to the rich deep-sea fishing grounds off the Nāpali coast to supply its people with plenty of fish. (Handy and Handy 1972:420-21)

Elsie H. Wilcox, a descendant of missionaries to Kaua`i. writing in 1917, further characterizes Hawaiian settlement in Hanalei into the early decades of the nineteenth century:

> The settlement then extended along the beach, where the climate was drier and where fishing was available, and the grass-thatched houses were set in the midst of gardens of fruit-trees, vegetables and flowers. Bananas, breadfruit, coffee, sugar-cane, cocoanuts, sweet-potatoes, yams, squashes, pia and taro were cultivated, and chickens and pigs raised. On account of the sandy soil and lack of water "*makai*", most of the taro-patches were further up the valley, the farmer going up daily to "*mahiai*" and returning at night to his home on the beach. The banks of both rivers were lined with taro-patches which, following the water-courses, extended far up into the valleys. Terraced remains of these patches are still to be seen far above present habitations, their extent indicating a goodly population at that time. The stretch of land between the two rivers, now used as rice-land (*i.e.* 1917), was then an undrained swamp, not available for cultivation. (Wilcox 1991:5)

The nineteenth century would see the Hawaiian-evolved landscaped transformed by the interventions of newly-arrived Euro-American missionaries, entrepreneurs, settlers and adventurers.

Alexander Baranov, the Russian-American Company's manager at Sitka, chose Georg Anton Schäffer, a German adventurer, to lead a mission to recover the seal skins cargo of the *Behring* which had run aground at Waimea, Kaua`i. Kaumuali`i, the king of Kaua`i, took possession of the vessel and its cargo, maintaining that anything brought to land upon

Kaua`i became the king's property. Schäffer arrived on the island of Hawai`i in November of 1815, but it was not until May 1816 that he sailed for Kaua`i, supported by an armed crew. Arms, however, were not needed; Schäffer found Kaumuali`i willing to return the *Behring*'s cargo and eager for an alliance with the Russian Empire.

Over the next months a busy Schäffer established the Russian presence on Kaua`i, intending to make the island a launching point for control of the entire Hawaiian chain. After constructing Fort Elizabeth at Waimea Bay he then gave orders for the creation of two earthenwork forts at Hanalei: one named after the General Barclay de Tolly, the other constructed on a plateau overlooking Hanalei Bay (on the grounds of the present Princeville Hotel) - after the Emperor Alexander. At the same time, Kaumuali`i deeded Hanalei to Schäffer who renamed the *ahupua`a* "Schäfferthal".

By the spring of 1817 Kaumuali`i had lost confidence in Schäffer. and ordered the Russian emissary and his compatriots off the island immediately. Aboard two company ships, they fled to Hanalei where Schäffer intended to make a stand; he wrote in his journal:

> I took possession of the island of Kaua`i in the name of His Majesty, the Great Emperor of Russia Alexander Pavlovich, ordered the Russian flag raised on Fort Alexander, fired three canon shots, and declared myself chief of Hanalei Valley. (in Pierce 1965:202-203)

But Schäffer and the others soon realized their predicament was hopeless. In June 1817 they sailed away from Hanalei Bay and concluded the Russian venture on Kauai.

Rev. Hiram Bingham, describing a visit to Hanalei in 1821 with Kaumuali`i and King Liholilo, makes no mention of the former Russian presence but gives details of the on-going Hawaiian culture:

> The people in their original state, treated us with such as they had. One ascended a coca-nut tree and threw down a nut. Another tore off with his teeth, the thick, fibrous husk, then cracked the shell with a stone, to give us a drink. The head man gave us a coarse dinner. A pig, baked with heated stones covered in the ground, was set before us on a large, shallow, wooden tray. *Kalo*, baked in the same manner, and beaten, was laid on large green leaves instead of plates, on the ground...Water was given us in a tumbler consisting of the neck of a gourd-shell, and bananas, ripe, rich, and yellow, were put into our hands singly. (Bingham 1847:143)

Three years later - 1824 - Bingham witnessed at Hanalei an example of the concerted human effort that could still be evoked by the *ali`i*. The brig *Pride of Hawaii*, owned by Liholiho, ran aground in Hanalei Bay. Bingham proclaimed the effort by a great crowd of Hawaiians to salvage the disabled yacht "one of the best specimens of the physical force of the people, which I ever had opportunity to observe for more than twenty years among them--indeed the most striking which I ever saw made by unaided human muscles" (Bingham 1847:221).

The salvage efforts ultimately failed and the brig was lost. The grounding of the *Pride of Hawaii* at Hanalei Bay in 1824 would suggest the perils of navigation by western ships within the bay and the rest of the northern Kaua`i coast where wind and sea conditions made impossible any secure anchorage. During subsequent decades of the nineteenth century, as increasing numbers of traders, ranchers and settlers moved into Hanalei, the bay could serve only as one "among the many outposts (in the Hawaiian Islands) supplying provisions to the whaling fleet" (Thomas 1983:23). "Hanalei was visited by an occasional whaler and by interisland ships, since there was some cargo to be carried out, but it was a dangerous harbor, especially when winter winds and rain blew down from the north" (Joesting 1984:141).

B. 1830s to 1850

When the *Sulphur*, an English vessel on a chartmaking voyage, visited Hanalei in 1838, its Captain, Edward Belcher, noted:

> Hanalae [*sic*], besides beef and vegetables of the finest quality, furnishes fruits, poultry, turkeys, &c., cheap and in abundance...Our object in coming hither was to embark bullocks, which, we were assured, were better and cheaper than at O`ahu; and we were fully repaid for the trouble; we obtained noble animals, and meat as fine as in England. (Belcher 1843, vol.1:61)

"Charltons Farm" - identified on the map (Figure 4) of Hanalei, drawn after the expedition, overlooking the northeast side of the valley - provided much of these foodstuffs, along with butter and cheese (Fitzpatrick 1986:68). Richard Charlton, the British Consul in Honolulu from 1825 to 1846, was among the first foreigners to develop new enterprises in Hanalei Valley.

In 1831 (Charlton) leased from Kaikio`ewa (Governor of Kaua`i) a stretch of land at Hanalei to be used as a cattle ranch. Its extent was not defined by any boundaries, it being generally termed Hanalei, and the cattle were allowed to range without absolute limit, except that they were not to encroach on the cultivated lands adjacent...The lease was for some twenty years from August 27, 1831. (Wilcox 1991:6-7)

In 1834, the same Governor Kaikio`ewa granted Hanalei land to Joel Deadman for the planting of sugar cane. Deadman's later testimony, recorded in 1844 at the time of the *Māhele*, reveals the precariousness of the early land ventures at Hanalei and the informality of the land transactions. Kaikio`ewa "agreed to cause [the Hanalei land] to be cultivated & planted with sugar cane and [to] find the materials for a mill &c and labor." In exchange, Kaikio`ewa was to be paid "one half of the sugar & Molasses produced." Deadman "remained there 6 months at considerable loss & expense and had even work made for the mill" but the plantation never materialized. In 1842, Deadman would sell the land to Dr. T.C.B. Rooke. father of the future Queen Emma.

An enterprise that actually took hold in Hanalei during the 1830s was silk making: Charles Titcomb, an American sailor, started a silk plantation which, by the early 1840s, comprised four varieties of mulberry trees and was reported to have been producing excellent silk (Wilcox 1991:7). The Hanalei silk plantation "finally encountered financial

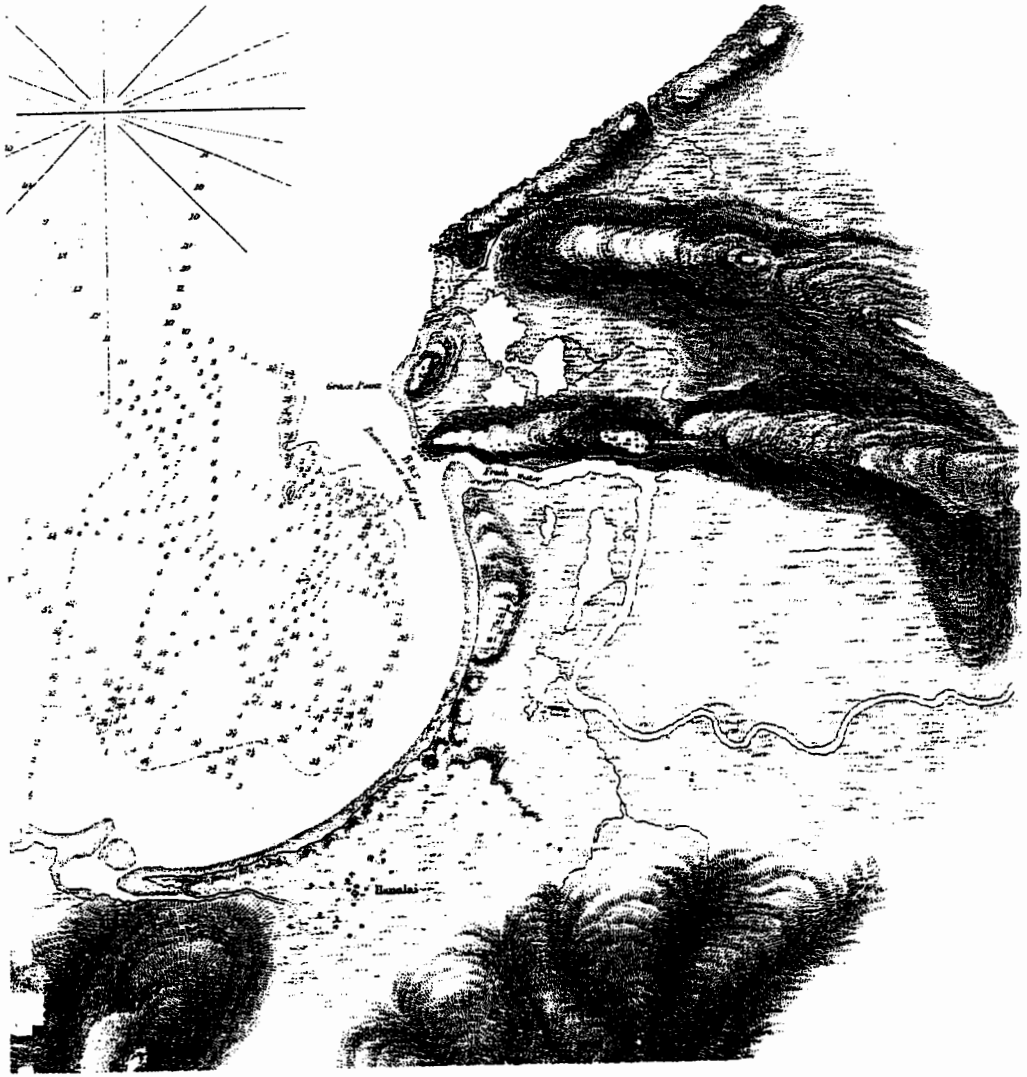

Figure 4 Portion of Belcher Map of Hanalei of 1838 Showing Areas of Habitation and Agriculture (the Project Area Lies East of Charlton's Farm Just Off the Map)

and other troubles" and the silk-making enterprise was abandoned there in 1844; Titcomb is reported to have lost $15,000 in the venture on Kaua`i (Wilcox 1991:183).

Also during the 1830s, the Protestant American Board of Commissioners for Foreign Missions (A.B.C.F.M.) established a mission station at Hanalei Bay in the neighboring *ahupua`a* of Wai`oli. The first missionary assigned to the station was William Patterson Alexander who, along with his wife and son, arrived at Hanalei Bay in 1834. The Alexanders would remain at Waioli until 1843.

Censuses taken by the missionaries throughout the Hawaiian islands beginning in 1831 provide the first record of the native population after the first decades of western contact. According to the 1834-35 census of Kaua`i, a total of 1505 Hawaiians - adults and children - were then living in the *moku* (district) of Halele`a (Schmitt 1973:26). Of that total, 522 Hawaiians, or fully one-third, resided in Hanalei *Ahupua`a*.

Despite his losses, Titcomb was able to replant his Hanalei fields in coffee with seed procured from Kona. Coffee growing had been introduced to Hanalei in 1842 when John Bernard and Godfrey Rhodes started the Hanalei Coffee Plantation on two pieces of land leased from the Government - "one on the east side of the Hanalei River containing ninety acres and one on the west side containing sixty acres" (Wilcox 1991:8) - with "plants and seeds...secured from Governor Boki's land in Mānoa Valley [on O`ahu]" (Wilcox 1991:9). While coffee had already been grown on O`ahu and Hawai`i islands, the fields at Hanalei represented the "first extensive coffee plantations" in the Hawaiian islands (Kuykendall 1938:316) and in 1844 the plantations of Titcomb and of Bernard and Rhodes comprised "upward of 100,000 trees" (Wilcox 1991:9).

Near mid-century, coffee dominated the Hanalei landscape: "a great part of the whole valley, at least to the extent of 1,000 acres, was under cultivation in coffee at this time" (Wilcox 1991:10). William DeWitt Alexander, son of the former Waioli missionary William P. Alexander, describes a return visit to Hanalei in 1849, six years after his family had left Kaua`i. His first view of the valley is of the "majestic Hanalei river winding its way through coffee plantations, & the graceful curve of the bay, bordered with houses, & groves" (Alexander 1991:125). He later visited the two coffee plantations:

> Capt. Rhodes has a fine coffee plantation. It contains upwards of 100 acres. It is in very fine cultivation. He had also banana, & orange trees, & a very fine grove of bamboo. I was much interested in observing the operation of the coffee mill. As in a sugar mill, a mule turns a perpendicular post. To the top of this is fitted a large horizontal cog wheel. This sets in motion a fly wheel which is connected to the rest of the machinery by bands. There are 3 or 4 mills which perform different stages of the operations. The noise which they made was most deafening. (Alexander 1991:127-128)

The Titcomb coffee plantation is characterized as "flourishing" though "not as large as Mr. Rhodes', nor is the coffee as luxuriant" (Alexander 1991:128). John Bernard, the partner of Godfrey Rhodes, had died at sea off Hanalei Bay in 1845: Rhodes and other investors continued the coffee operation, now renamed the Rhodes & Co. Coffee Plantation, which in

1846 comprised 750 of the 1000 acres of Hanalei land then under cultivation of coffee (Wilcox 1991:9-10).

C. Mid-Nineteenth Century: *Māhele* Documentation

A Survey Map of *makai* Hanalei by W.A. Wall (1893; R.M. 1833; Figure 5) locates all but six of the 66 awarded *apana* of the Land Commission Awards (LCAs) in Hanalei. No Land Commission Awards lie in the vicinity of the project area although several lie along the Hanalei River floodplain to the east. (Figure 5). Of the filed claims for Hanalei, 49 are awarded. In these claims, both awarded and unawarded (49 claims) we have the land uses claimed by each person. We shall call these the land use components. These components (204) comprise 124+ taro patches or *mo`o* (1 or more taro patches in a *mo`o*)(61.1%), 44 house lots (21.7%), 18 *kula* (garden/pasture)(8.9%), 8+ orange and 1+ lemon trees (4.9%), 5 *loko* (ponds) (2.5%) a *noni* and banana patch, 400 head of cattle and 160 acres of coffee, a wharf (misc. 1%).

What seems notable compared to other *ahupua`a* we have studied, is the larger than normal percentage of houselots in proportion to other land uses (*i.e.* in Hanapēpē the house lots were 7% of the total components, in Wailua 14.5%, in Wai`oli 11% while in Hanalei they are 21.7%). This large component of house lots may be explained by 1) awarding of house lots to *ali`i* in a favorite dwelling place with a good beach, good fishing and good surfing; 2) warriors who were given house lots here as a reward for loyal service to Kamehameha, especially during the 1824 Kaua`i rebellion: 3) the practice of having a house in Hanalei and farming in the sister *ahupua`a* of Wai`oli. There was clearly a close community relationship between the two *ahupua`a*. Irrigation water originating in Wai`oli crossed the *ahupua`a* boundary into Hanalei representing one of the few instances in Hawaii of shared water resources between *ahupua`a*.

Along the shore we find the majority of houselots; the Wall map shows a Devereux Hotel near the Land for Emma Rooke. Of interest in the claim filed for Emma Rooke is the *makai* side, bounded by the house of Hawaiiloa where the King and other *ali`i* stayed when they came to Hanalei. Just inland of this area was Kanoa Pond, and houses are on both *makai* and *mauka* sides of this pond.

Still close to the shoreline, but on the north side of the river is the *`ili* of Kaunuopua where there is another smaller concentration of houses and a few *lo`i*. Kellett, a foreigner, has a lot on the hill just beyond this area for his houses and those of the natives who live under him, and another lot on the river for his corn, peas, and garden. Within the crook of the Hanalei River, in an area called Kaohia is a concentration of *lo`i* lands with a *kula* on the inland end.

The settlement of Hanalei would seem to be houselots for the *Ali`i* and of former warriors of Kamehameha II in the Kaua`i rebellion of 1824 at the shore, with taro patches inland and in the *ahupua`a* of Wai`oli. Other small concentrations of houselots with nearby gardens are scattered along the north shore, just north of Hanalei River inland along the river. The *ahupua`a* of Wai`oli would appear to be closely allied to Hanalei and served as a gardening area for some of the claimants residing in Hanalei.

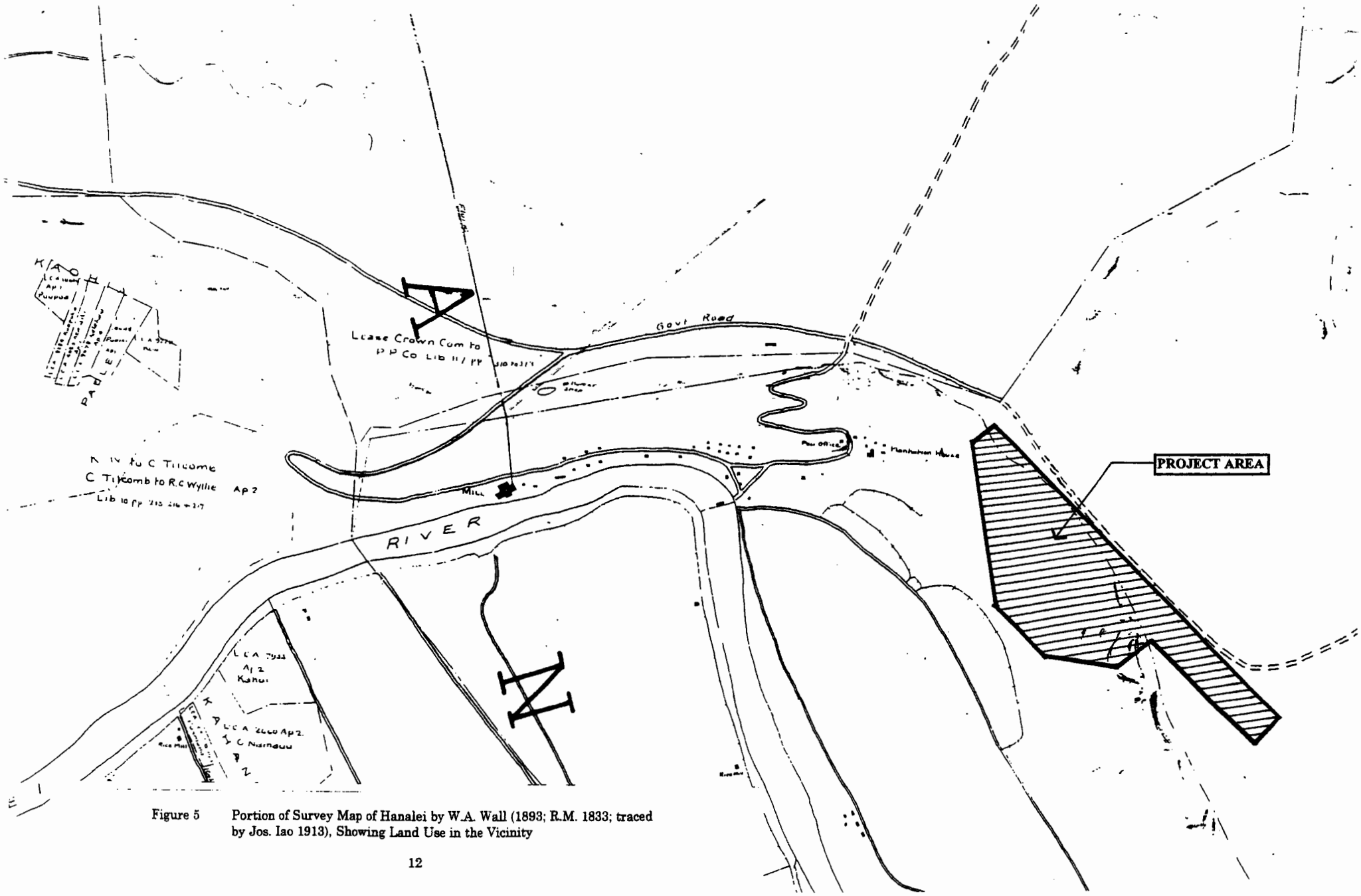

Figure 5 Portion of Survey Map of Hanalei by W.A. Wall (1893; R.M. 1833; traced by Jos. Iao 1913), Showing Land Use in the Vicinity

D. 1850s to 1900

According to records of the Royal Hawaiian Agricultural Society: "for the twelve months from July, 1850, to June. 1851...Hanalei exported (to Honolulu) 21,298 pounds of coffee, 39 barrels of Irish potatoes, and 20 head of cattle, at a total value of $2,744.08" (Damon 1931:334). Coffee-growing continued to dominate Hanalei, apparently established firmly within the landscape. However, the plantation owners were apprehensive: they foresaw an eventual lack of manpower in their fields as production increased. They also feared a growing intransigence among the Hawaiian workers: "Mr. Rhodes stated (in an 1851 report) that laborers were demanding one dollar a day...and that some had refused to work even at four dollars a day" (*Ibid.*:351). Many of the Hawaiian laborers had already left the island to work in the gold mines of California. The Hanalei planters thus welcomed the plan of the Agricultural Society to import "Chinese coolie laborers under contracts based on the indentures used in employing seamen" (*Ibid.*:351) for the various plantations throughout the Hawaiian islands. In 1852 the first Chinese laborers arrived at Hanalei to work on the coffee plantations. By the next year the Chinese were fully integrated in the labor system; Rhodes' 1853 report on Hanalei to the Agricultural Society noted:

> Mr. Titcomb's Coffee Plantation is in fine order, and he expects a large crop, of perhaps 80 to 100 M. lbs. He has lately cleared more land for planting: his plantation is compact, and well managed. I believe he is satisfied with his coolies. He has a number of natives engaged, but has difficulty in making them fulfil their agreements. Our own plantation is thriving, although a number of years must elapse before it re-attains the prosperous state it was in 1849 and 1850. when our natives all left us, smitten with the California fever. I am very well satisfied with the coolies, and much prefer them as laborers. (in Damon 1931:352-353)

Whatever comfort the coffee planters of Hanalei may have obtained from the newly-available labor force, they were finally vulnerable - in the 1850s - to natural forces beyond their control. That vulnerability had been foreshadowed earlier, in 1847, when a torrential rain flooded the valley, severely damaging the coffee trees. In 1851 and 1852 the Hawaiian islands suffered through a severe drought and a subsequent blight ravaged coffee trees at Hanalei and on all the islands. The plantations were able to continue producing through a few more years but, by the end of the 1850s, the Hanalei plantations were devastated; a visitor in 1860 contrasted the current despoliation with the flourishing scene of three years earlier:

> The coffee blight has entirely covered the two Hanalei plantations which in the spring of 1857 we saw in full and successful culture, yielding 200,000 pounds of excellent coffee. It was sad to witness the contrast. Then scores of women and children were busy picking the ripe berries. and depositing their gatherings at night at the overseer's office, but now all was silent. Not a gatherer was abroad, and we saw laborers bringing in coffee trees upon their shoulders, to heat the fires under the sugar boilers of Mr. Titcomb. (in Damon 1931:351)

The "sugar boilers of Mr. Titcomb" the visitor noted were evidence of an unflagging resilience; for Titcomb, who had earlier converted his fields from silk to coffee, turned his energies to sugar growing during the latter 1850s.

Godfrey Rhodes, the other Hanalei coffee grower, had already sold his coffee plantation: on March 14, 1853 the land occupied by the Rhodes Coffee Plantation was bought from the Government for $1,300 and on Sept. 13, 1855 Rhodes sold out his interest in the plantation for $8,000 (Wilcox 1991:13). The man who purchased the land and plantation was Robert Crichton Wyllie, the Hawaiian Kingdom's Minister of Foreign Affairs.

Wyllie, a Scotsman who had made his fortune as a merchant in South America, arrived in the Hawaiian islands in 1844. Though Wyllie had not intended to settle in Hawai`i, in 1845 he accepted an appointment by King Kamehameha III as Minister of Foreign Affairs and served in that office until his death twenty years later. As Foreign Minister, Wyllie's great ambition was the recognition of the Hawaiian Kingdom as a sovereign nation by the world's powers. But a more personal aspiration also captivated Wyllie: to build for himself a manor at Hanalei quite as magnificent as any he had known in Scotland. So in 1853 he began acquiring tracts of Hanalei land beginning with the Rhodes Coffee Plantation. Wyllie attempted to save the coffee plantation:

> For ten years (Wyllie) doggedly fought against [the] blight which gradually withered the trees. Finally facing reality, he pulled out the dead trees and planted a new crop, sugar. (Hackler 1982:66)

By 1862, Wyllie had "constructed an extensive sugar factory and other buildings at the eastern end of the Valley, along the river, importing much of the machinery from Scotland" (Thousand Friends...1987:32) and in 1863 he bought Titcomb's lands, only one piece among the extensive land purchases Wyllie made during the early 1860s:

> On Feb. 5, 1863, Mr. Titcomb sold out to Mr. Wyllie...In all, four pieces of land passed to Wyllie, 750 acres at Emmasville, 1 acre at the landing, Kanoa Pond, 10 A., and Kukia on the opposite side of the river. Wyllie had before this, on April 17, 1862, bought the Ahupuaa of Kalihikai, this being the property of A. Keliiahonui, grandfather of Levi Halelea, given to Keliiahonui by an old alii. On Oct. 5, 1862, Wyllie bought at public auction from J.W. Austin and Chas. Kanaina (Guardians of W.C. Lunalilo) the Ahupuaa of Kalihiwai. (Wilcox 1991:14)

Wyllie's land purchases and substantial investment in the development of his sugar operation reflected the brilliant future he envisioned for his estate. He intended to name as heir to his lands the young "Prince of Hawaii" (*Ka Haku o Hawaii*) Albert Edward Kauikeaouli Leiopapa a Kamehameha, who had been born in 1858, the son of King Kamehameha IV and Queen Emma. It was after a visit by the royal family to Hanalei in 1860 that Wyllie named the estate "Princeville". He resolved to petition the king to proclaim the estate the "Barony of Princeville" - making it a fit legacy for the prince - but his plans were undone in 1862 when Albert died at the age of four. Wyllie himself died

three years later. The estate and plantation were discovered to be deeply in debt and in 1867 Wyllie's lands were auctioned for $40,051.50 to Elisha Hunt Allen who, like Wyllie, was an official of the Hawaiian government.

The Princeville Plantation continued in operation - in 1872 "the average crop was 400 tons, capacity of the mill, 1,000 tons (Wilcox 1991:18) - under changing ownership until the 1890s.

A Hawaiian Government survey map of 1885 indicates sugar cane growing on both sides of the Hanalei River, extending *makai* near its mouth at Hanalei Bay as well as up in the Hanalei uplands and adjacent *ahupua`a* Kalihikai. While this map does not extend as far east as the project area, it shows that most of the plateau north of the Hanalei River was in sugar cane at that time.

By the last decade of the nineteenth century, the difficulties of growing sugar cane at Hanalei were insurmountable:

> ...the cane had never done well in that cool, wet climate. Much of it rotted in the lower fields; the upper fields were, it is said, not plowed deeply enough and at times there was not water enough to flume the cane down to the mill. (Wilcox 1991:18-19)

The company failed; the last crop was harvested in 1893. By 1899, Albert S. Wilcox had secured control of all the plantation: "The lower lands were rented out to Chinese rice-planters, and the upper lands between Hanalei and Kalihiwai were planted to imported grasses and turned into a cattle-ranch" (Wilcox 1991:19). Wilcox would later, in 1916, sell the land to Lihue Plantation Company and W.F. Sanborn (Wilcox 1991:19).

Where, half a century earlier, William Alexander had viewed the Hanalei Valley dominated by coffee plantations, a visitor in the 1890s would come upon an entirely transformed landscape. Eric A. Knudsen, recounting a trip around Kauai in 1895, presents the view of Hanalei as his party approached from Kalihiwai *Ahupua`a*:

> We...were glad when we reached the great valley of Hanalei. The road in those early days almost dived straight down to the bridge. It was steep and in wet weather very slippery...
>
> About half way down, the valley began to open up. Rice fields and taro patches covered the flat bottom lands as far as the eye could see...the view to our right, the winding river with a barge loaded with rice slowly drifting down on its placid surface, and beyond the great sweep of sandy beach, were a truly inspiring sight. (Knudsen 1991:153)

Knudsen's account reveals significant features of the Hanalei landscape during the last years of the nineteenth century. The bridge which now spanned the Hanalei River from the government road was a recent development. Until the 1880s, as noted in a tourist guide of

that decade, there was no bridge over the river but there was a "ferry opposite the Princeville Plantation, where passengers, cattle, teams, etc., can pass the river free of charge, the ferry being supported by the Government and the Princeville Plantation, jointly" (in Thousand Friends...1987:58-59).

The rice fields of the 1890s had been expanding during the previous decades as sugar declined. Upon completion of their contracts with the plantation, a number of the immigrant Chinese laborers remained in Hanalei, many becoming merchants or rice farmers, the existing taro *lo`i* providing a ready foundation for conversion to rice paddies.

A market for rice in California had developed in the mid-nineteenth century and Chinese immigration to the islands also accelerated, a domestic market. The Princeville Plantation Company began leasing out their land for rice farming in the 1870s. The plantation ended up leasing 300 acres to Chulan and Company at $20 per acre, per year (Hackler 1982:80). By 1892, 750 acres of Hanalei Valley were under cultivation of rice, comprising the largest single rice-producing locality in the Hawaiian islands (in Thousand Friends...1987:116). Maps of the 1890s show six rice mills in the valley.

The transformation of Hanalei Valley from sugar to rice growing during the second half of the nineteenth century reflected the increasing Chinese population at Hanalei. Government censuses at Hanalei recorded 164 Chinese in 1866, 132 in 1872, 265 in 1878, 459 in 1884, and 689 in 1896 (*Ibid.*:116). Government censuses also document the declining native Hawaiian population of Hanalei during the second half of the nineteenth century: there were 1926 Hawaiians in 1853, 1600 in 1860, 1949 in 1866, 1403 in 1872, 578 in 1878, 795 in 1884, 860 in 1890, and 679 in 1896 (in *Ibid.*:121). Presumably some of those Hawaiians in the 1890s continued to farm the remaining taro *lo`i* that Eric Knudsen noticed amidst the rice fields in 1895.

E. 1900 to the Present

Sometime between 1893 and 1904 a new road appears to have been developed through the project area. The 1893 map (Figure 5) shows the major route to Kalihikai heading east from the vicinity of the project area passing well to the north of Po`oku. The 1904 map, also by "Wall" (Figure 6) shows the main route huggging the west edge of the bluff passing to the south of Po`o Ku.

During the first decade of the twentieth century, rice-farming by the Chinese continued to be the focus of large-scale economic activity in Hanalei.

Two significant structures, which still exist, were constructed at Hanalei in 1912: the pier at the mouth of Hanalei River and the bridge spanning the river. The pier is described, in an application for placement on the National Register of Historic Places, as a "wooden deck...built during a period of economic prosperity in the area, primarily the result of a thriving rice industry" which "replaced an earlier shorter pier and primarily was employed for the shipment of rice."

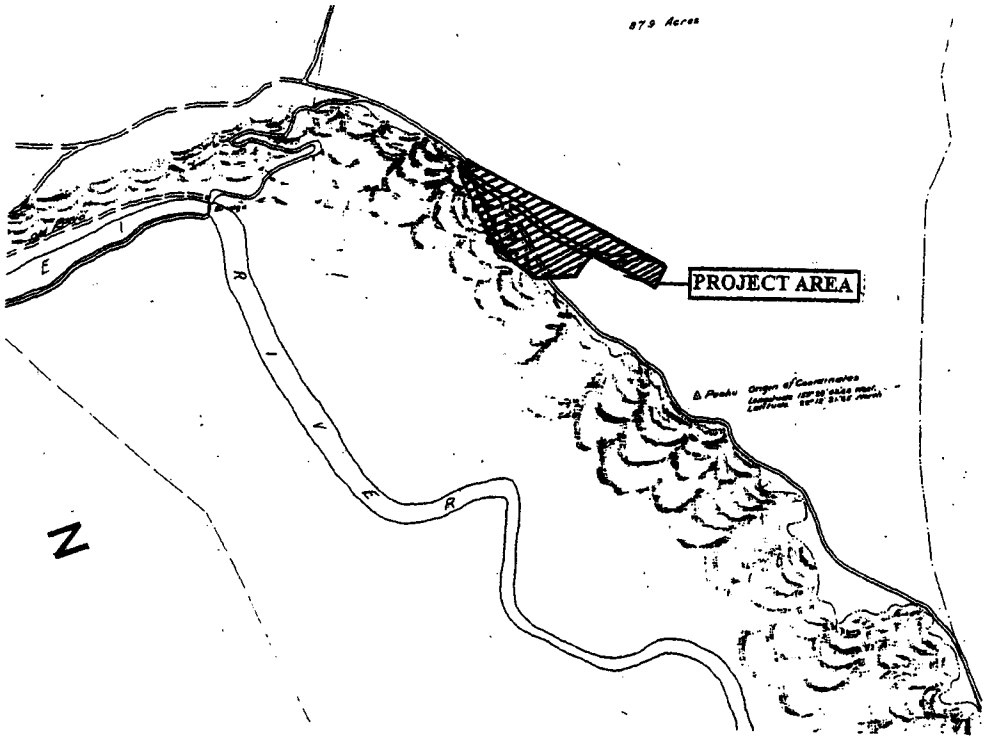

Figure 6 Portion of Wall Map of 1904 Showing a Route Passing Through the Project Area and South of Po`o Kū *Heiau*

While the new pier reflected the current flourishing rice-based economy of the valley, the construction of the bridge - replacing the wood bridge Eric Knudsen had crossed in 1895 - would provide an impetus to further change within Hanalei. An application for placement on the National Register of Historic Places notes that the construction of such a substantial steel bridge "helped stimulate the economic and social growth of the then relatively isolated North Shore" of Kaua`i. The facilitated access in and out of the valley may have accelerated a development begun in the late nineteenth century: the building of vacation houses along the Hanalei beach to take advantage of the pleasant breezes and spectacular water views.

Rice farming declined sharply throughout the Hawaiian islands after the first decades of the twentieth century as lower-priced rice grown in California inundated the market. Chinese rice planters at Hanalei and elsewhere began selling their fields to immigrant Japanese rice growers.

In the 1930s, the Agricultural Extension Service of the University of Hawaii began a program to increase rice production at Hanalei, resulting in a brief "resurgence in rice cultivation"; acreage in Hanalei increased from "759 in 1933 to 1058 in 1934," and by 1936 Hanalei "produced over two-thirds of all rice in Hawaii, almost all of it for consumption within the Territory" (Thousand Friends...1987:117-118). It is this rice-dominated Hanalei landscape that E.S. Craighill Handy, in his 1940 study of planting areas throughout the Hawaiian islands, describes as it appeared in the 1930s. Handy's account is especially valuable as he notes both present usages, based on his field observations, and former usages, based on information from native informants:

> The land named Paele in the great bend of the river east of the bay, which used to be in rice or taro, is now used for pasture. The broad area inland from the river, named Kahanawai, is now planted with rice, except for the flats adjoining the base of the hill. According to Sheriff Lota, this area was only partly developed in terraces in ancient times. In the 1880's, the land just above the highway was planted in sugar cane, which gradually extended far up Hanalei Valley. Subsequently much of this land, which had not previously been in terraces, was cut up by the Chinese into paddy fields. It was only in the flats of Hanalei Valley proper that terraces were continuous in the old days. At present, rice paddies are continuous for 1.3 miles from the highway bridge where the Hanalei River turns east; another sizable rice patch lies four tenths of a mile beyond, the land between being neglected. Beyond this farthest rice plantation the Hawaiian homesteads commence. A few Hawaiians and other homesteaders plant a little taro for home consumption. It is said that there are numerous areas of abandoned small terraces farther in the interior. (Handy 1940:72)

Handy's description suggests that by 1930s, Hanalei Valley comprised a patchwork of shifting idle and active agricultural fields and pastures which reflected the vagaries of decades of shifting economic pressures.

While Handy asserts that taro farming survived in the 1930s only as a subsistence crop for a "few Hawaiians and other homesteaders" other sources suggest that the taro-growing area at Hanalei was somewhat more expansive: a U.S. Department of Commerce census of agriculture of 1939 recorded 108 acres in taro at Hanalei, comprising fully one-fifth of the total 529 acres in taro throughout Hawai`i (in Thousand Friends...1987:118).
As the Japanese farmers phased out rice production in the 1950s and 60s, they converted their fields to taro *lo`i*. By the late 1980s, taro-growing, which once dominated the traditional Hawaiian landscape, was firmly re-established within Hanalei.

Beginning in the 1960s. the Princeville area began its evolution as a major resort and condominium complex which continues at the present. At the same time:

> ...the Federal government became a partner in shaping land use in the Hanalei Valley...by working with the Princeville Development Corporation to acquire land for the U.S. Fish and Wildlife waterbird refuge. The refuge has a supportive policy of continued taro production and the maintenance of the irrigation system and existing houses and farm outbuildings. (Thousand Friends...1987:10)

The Hanalei National Wildlife Refuge was established in 1972 to provide feeding and nesting areas for endangered Hawaiian water birds including the coot, stilt, gallinule and duck. It encompasses 917 acres of Hanalei Valley, including 70 acres of ponds, 600 acres of forest and mountain areas. and as of 1993, 125 acres of commercial taro fields.

More recently, severe hurricanes ("Iwa" in 1982 and "Iniki" in 1992) have demonstrated the precariousness of human development within the Hanalei environment, just as natural disasters thwarted the efforts of newly-arrived nineteenth century entrepreneurs. However, the endurance of taro through the changes documented above and its flourishing today may preserve the memory of pre-contact Hanalei.

F. Land Use Patterns in Project Area and Vicinity

The project area is completely within the Hanalei *Ahupua`a*, however its topography correlates to post-contact land use patterns of Kalihikai and Kalihiwai *ahupua`a* as well as Hanalei *Ahupua`a*. Its location on the eastern bluff, above the river valley, sets the project area apart from the irrigated lowlands, associated with the agricultural pursuits of both pre- and post-contact periods. Numerous accounts attest to extensive Pandanus groves in the uplands of Hanalei. Kalihikai and Kalihiwai in the early nineteenth century (Alexander, 1991; Lydgate, 1991; King, 1991; Bird, 1890). William DeWitt Alexander (1991:124) describes these groves during a trip around the island in 1849, "Five more miles of riding through woods of hala, brought us to the tip of the hill that overlooks Hanalei Valley...". William T. Brigham visited Kaua`i in 1865 and also commented on the extensive pandanus, "Vast numbers of pandanus cover the hillsides and grow so luxuriantly as to furnish an admirable shelter from the rain" (Lydgate, 1991:139).

Prior to western contact, this area may well have been used for gathering as part of the Hanalei *Ahupua`a* land open to all *ahupua`a* members. Economically viable plants have been identified in association with archaeological remains on the lower slopes (25 to 125-foot elevation) of the valley ridge (see Previous Archaeology Section) just below the project area. These have been associated with dry land or *kula* lands to supplement the crops growing in the adjoining terraces (Cleghorn, 1979; Schilt, 1980). The pandanus groves of the upper slopes of the valley wall would have been another resource for residents of Hanalei *Ahupua`a*, Residents would not have to travel so far *mauka* to find the *hala* needed for their mats, etc.

There was another reason the residents of Hanalei would have valued the eastern bluff of Hanalei Valley, Po`oku *Heiau*. Although very little is known about the *heiau*, there is some evidence this *heiau* played an important role in the pre-history of Hanalei. Besides being physically situated on the eastern boundary of Hanalei Valley, the *heiau* was constructed in a strategic location for fortification (see description of *heiau* in Previous Archaeology Section). Bennett discusses the benefits of using hills to construct *heiau*, "Hilltops are favorable sites for making an imposing structure with the minimum labor" (Bennett, 1931:33). Po`oku Heiau is constructed out of an old volcanic vent and has the highest elevation of all landmarks nearest the road, giving one a commanding view of the Hanalei Valley as well as a good view of the adjacent Kalihikai *Ahupua`a* uplands. Ching's work on Po`oku *Heiau* in 1974 presented the story of a local informant describing the site being used as a fort during a threat of warfare from a neighboring chief (Ching, 1974).

> The small river stones found on this *heiau* date back to a time when the chief of Wainiha Valley threatened to make war on the chief of Hanalei. The people of Hanalei formed a long line, extending from Po`oku to Hanalei River. Directly below Po`oku is a shallow rapids, it is from this rapids that stones were collected and passed along this human chain, up the hill to Po`oku. The stones were ammunition for the men of Hanalei, who used them in their slings, to ward off attack (*Ibid*, 1974)

This description reveals that at least one function of the *heiau* may have been as a fort.

The first recorded use of the uplands of Hanalei, Kalihikai and Kalihiwai by a non-Hawaiian was in 1831. The British Consul of the Sandwich Islands, Richard Charlton, was awarded the use of land to feed his livestock at "Hanalei", Kaua`i by the Governor of Kaua`i, Kaikio`ewa (Wilcox, 1991). This land use agreement set a precedent for all historic land use in this area thereafter in that *ahupua`a* boundaries were not recognized. In the agreement, no land boundaries were specified and apparently there was no limit to the range of the cattle. The only stipulation other than the conditions of exchange was that the cattle be kept from cultivated lands. Wilcox (1991:7) describes the cattle ranging over the slopes, between Hanalei and Kalihiwai. The Charlton Farm was located approximately 800 m northwest of the project area and it seems probable the Charlton cattle grazed within the project area. This plateau land would be a favorable place to have the cattle as the topography is fairly uniform, descending gradually *mauka-makai* and the uplands are generally removed from the cultivated lands found in gulches and alluvial lands associated with more abundant water resources at lower elevations. Besides failing to fulfill his contract with Kaikio`ewa, Charlton also failed to keep the livestock from encroaching upon

cultivated lands. Earle (1978:149) reports on the mid nineteenth century "decline of *kula* farming due to the destruction of gardens by newly introduced cattle" in the region.

In 1845, a French consul of the Sandwich Islands, Captain Jules Dudoit, purchased the lease of the Hanalei uplands from Charlton (Damon, 1931) and continued the cattle operation upon the same Hanalei-Kalihikai-Kalihiwai uplands. The sale of cattle and salt beef in Honolulu and to whaleships was supplemented with the production of milk. A visitor in 1850 commented on the "1800 head of fine cattle" on Mr. Dudoit's estate (Damon, 1931:335). This was a tremendous growth over the 100 head of cattle estimated in 1840 and is a logical explanation for the destruction of *kula* lands reported above, and native landscape, in general.

At the termination of the lease in 1851, the Dudoit's moved to the Ko`olau District and it is uncertain whether cattle ranching continued in the uplands of Hanalei, Kalihikai and Kalihiwai. There is some mention of sheep in Hanalei although their grazing lands are not identified (Damon, 1931). In 1853, the Scotsman who served for many years as Minister of Foreign Affairs, Wyllie, began acquiring lands in the Hanalei Valley. He began in 1853 by purchasing the same portion of Hanalei that Charlton had leased. By the time he had acquired the *ahupua`a* of Kalihikai and Kalihiwai in 1862 and consolidated his lands into the Princeville Plantation, sugar cane cultivation had become his primary agricultural pursuit. Although no sugar cane cultivation was recorded in the project area during William Brigham's 1865 visit to Kaua`i, Brigham did make mention of the pandanus and the grasslands of the Hanalei uplands (Lydgate, 1991). An account of a ride from Mr. Wyllie's Lanihuli House up to Po`oku *Heiau* is recorded by Brigham in 1865:

> The view on all sides was very fine, and as we rode up the ridge next morning over the smooth grassy fields, the almost uncomfortable volcanic presence disappeared, and the land seemed free from Pele's undesirable authority...We rode up the ridge some distance to a mound or small hill which in ancient times was *kapu* and none but the kahunas who dwelt there, or the chiefs, could come onto it on pain of death. On its summit was a pavement, where human sacrifices were offered, and from which the poor victims had a view which even to their eyes must have made them loth to leave the beautiful earth under pleasanter circumstances (Lydgate, 1991: 137).

The earliest record of sugar cane cultivation occurring in the uplands appears on a map of Hanalei from 1885. The map depicts the old Charlton Farm, the road that runs near Po`oku *Heiau* and sugarcane growing on the east side of `Anini Gulch (east of the project area). However, the map does not indicate whether there was sugar cane cultivated in the project area. It remains unclear if the project area was ever planted in sugar, though it is possible. Whichever the case, by the end of the nineteenth century, cane cultivation in the uplands was abandoned (Wilcox, 1991). The uplands were converted back to pasturelands after the new owner, Albert S. Wilcox purchased the Princeville Plantation in 1899 (Wilcox, 1991: 19).

Lands of the Princeville Plantation were sold again in 1916, this time to the Lihue Plantation (Damon, 1931). Lihue Plantation was not so interested in growing cane, rather

their interest lay elsewhere. "The main object, however, was less the lands than the very valuable water rights which accompany them and to which seven miles of open ditches and tunnelling under the mountains have given free access. This taps the upper sources of the Hanalei River, the largest stream on any of the islands, and was not begun until 1923" (Damon, 1931:918). The cattle ranch operated by Wilcox was maintained by Lihue Plantation until 1969 when Princeville was sold to Consolidated Oil and Gas Corporation of Colorado (Ariyoshi, 1988:25). 900 acres of the Princeville Plantation lands in the Hanalei Valley floor were purchased by the Federal Government in the 1970s with the intention of creating a National Wildlife Refuge. The remainder of the Princeville Plantation in the uplands was converted into a resort-residential community with hotels, condominiums, restaurants and golf courses (Applebaum, 1994:58).

IV. PREVIOUS ARCHAEOLOGY

A. Previous Archaeological Studies in the Vicinity

The first comprehensive study of the archaeology of Kaua`i was undertaken by Wendell C. Bennett (1931) based on field work accomplished in 1928-29. Bennett recorded four sites in Hanalei *Ahupua`a* and two in Kalihikai *Ahupua`a*:

Site 138 — Maheu *Heiau*, on Pu`u Maheu, Kalihikai, is a paved platform 18 by 21 feet on top of Maheu peak. There is a fine view of the valley and country all around. River stone as well as local rock is used in its paving.

Site 139 — Po`oku *Heiau*, on the east bluff of Hanalei valley a short distance from the government road on a knoll marked on the map as "Pooku." Only a few stones remain to mark the location of this heiau which Thrum [1906:43] describes as "An unenclosed *heiau* of about two acres in area. Of *luakini* class, terraced down on all sides from the central platform."

Site 140 — Kapaka *Heiau*, on top of Kapaka hill on the east bluff of Hanalei valley just within the forest line. Thrum describes this structure as "A paved open platform heiau without walls; stones set edgewise traversing through. Kāne its deity. Said to have had connection with Kapinao at Waiakalua in its workings." This site has had many stones removed, or covered over with vegetation. The river stones seem to cover the top of the hill for a diameter of about 75 feet. The extent of the heiau could not be accurately determined. The stones set edgewise traversing through could not be found.

Site 141 — *Heiau* and house sites, at Kalama-iki, an old village on the river flats, four miles up Hanalei Valley. There is a stone structure 18 by 20 feet with walls all around 2.5 feet wide and 2 feet high. In front is a paved section extending 5 feet, like a lanai, to a drop of 4 feet of the river terrace. The river is 50 feet out in front. Both river stones and rough rocks were used, but no coral was seen. The wall was chinked with smaller stones in front. Taro terraces and house sites are on the plains along the river.

Site 142 — Kaapoku *Heiau*, inland from Site 141 in Hanalei Valley. This small shrine consists of a paved platform 18 by 20 feet made of rough stones. A village was across the stream.

Site 143 — Ditch and house sites, across the river from Site 142 in Hanalei Valley. Site also includes taro terraces and a ditch that runs from 0.5 mile or so up the stream to water this plain. The water comes through a big rock which is conveniently cracked. The legend runs, that Pele sent lightning to split the rock so that the people could get the water down to the fields. Upstream from here a large. overhanging rock forms a natural shelter. It has been built up along the front a bit. The house sites of the solidly paved type, as well as those merely outlined with stones, are found. (Bennett 1931:134-35)

Of all these *heiau*, Po`okū *Heiau* has the most proximal location, situated approximately 300 m southeast of the project area (Figure 7). Subsequent work on Po`okū *Heiau* was carried out by Ching in 1974 during an island wide survey for the Division of State Parks, Historic Sites Office (Ching, 1974). Ching distinguished three approximately one meter high earthen terraces. He also noted a scattering of stones over the terraces and a possible alignment of stones on the southeast side of the *Heiau*. Ching alludes to the possible connection between the Maori *pa* forts and Po`oku *Heiau*.

Po`okū *Heiau*, Site 50-30-03-139, was placed on the Hawaii Register of Historic Places in 1974 as a valuable, local Hawaiian Site. Problems over land owner notifications led to the removal of the site from the Register in 1980. At present, the *heiau* is part of privately owned Princeville Corporation.

Cleghorn (1979a) conducted an archaeological reconnaissance survey of 620 acres of Princeville Corporation property in the Hanalei and Kalihikai *ahupua`a*. including a portion of the current project area. The one site encountered was an upright boulder and semicircular area excavated into a ridge slope directly above `Anini Gulch approximately 1.4 kilometers north of the present project area. Although no new surface sites were found near the current project area surveyed, Cleghorn recommended further archaeological investigations at Po`oku *Heiau* in the case of development near the *heiau*.

In 1988, Kikuchi performed inspections for two proposed projects situated adjacent to and within the present project area (Kikuchi, 1988a, 1988b). The first was for a proposed Princeville Corporation's Nursery Staging and Light Equipment Storage Area partially located within a portion of the present project area, on the level land north and west of Po`oku *Heiau*. No archaeological features were identified and examination of the stratigraphy indicated an upper layer of humus overlying "clayey brown soil devoid of rocks", thought to be associated with decomposing lava flows (Kikuchi, 1988b). The second inspection was carried out for the proposed development of lands for the Church of the Pacific. The church project area lies adjacent to and east of the present project area. As in the previous survey, no archaeological features were identified in this property and Kikuchi noted that Po`okū *Heiau* was protected by a wire fence and was "unaffected by both church and nursery construction" (Kikuchi, 1988b).

Po`okū *Heiau* was again surveyed in 1990 in conjunction with the proposed Kūhiō Highway Improvements Project (Quebral and Cleghorn, 1990). In addition, the study addressed the proposed realignment corridor located along Kūhiō Highway between Princeville and Princeville Airport and other portions of land in TMK 5-03-06: 14 as well as the historical significance of four drainage tunnels associated with the proposed corridor. The drainage tunnels were mapped and no archaeological surface features were identified in the realignment corridor and associated lands. The proposed realignment was determined to have no impact on Po`okū *Heiau*.

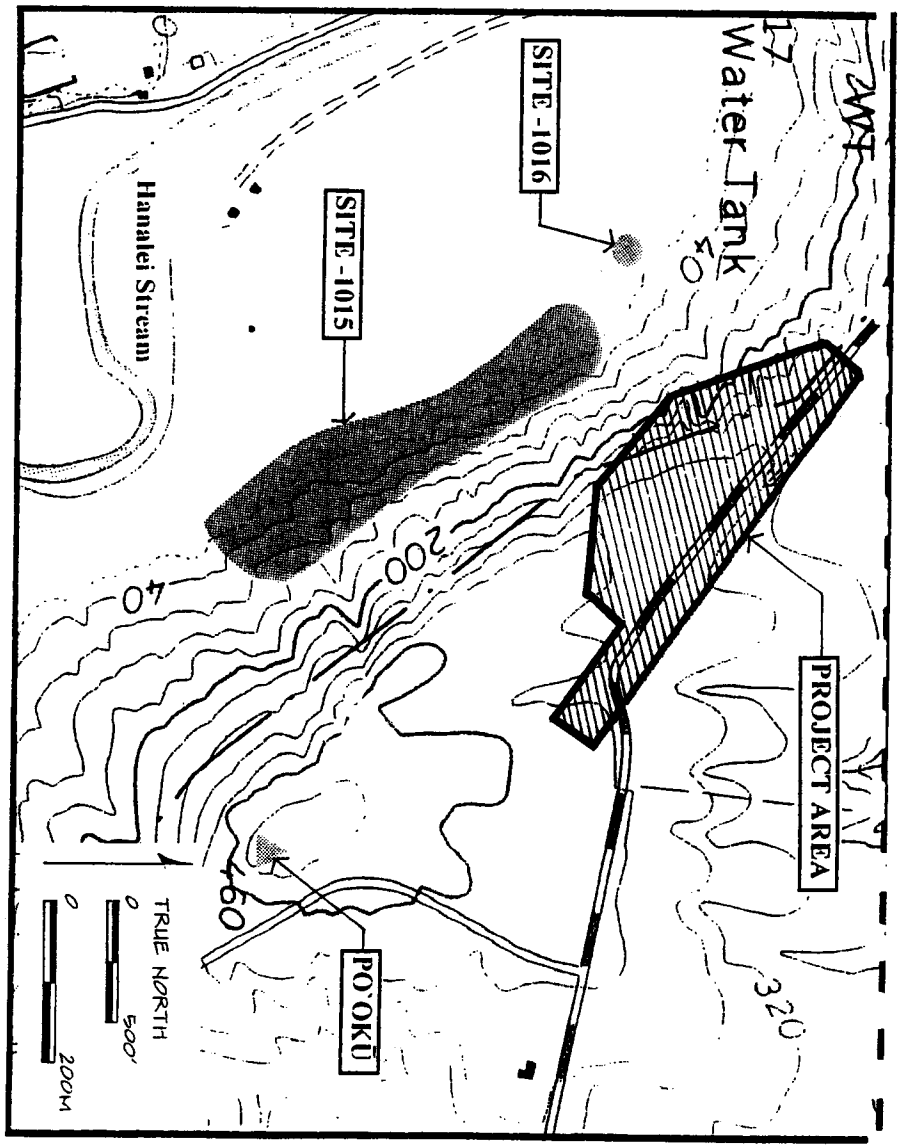

Figure 7 Map showing Relationship of the project area to Po`okū *Heiau* and Site 50-30-03-1015

In 1993, McMahon conducted an archaeological field inspection of Po`okū *Heiau* to address the adverse impacts of Princeville Corporation's nursery operation on the *heiau*. McMahon determined that the nursery had impacted the *heiau* with a road cut at the nursery entrance and along the southern boundary of the nursery. McMahon also noted other impacts including a trig station directly on the *heiau*, Kapaka Road impacting terraces on the east and south sides and motor vehicle activity directly on the *heiau*. Recommendations were made to protect the *heiau* including creating a buffer zone and installing a fence around the *heiau*, clearing the site of dense vegetation and erecting interpretive signs.

Detailed archaeological study of specific areas within Hanalei *Ahupua`a* commenced in the 1970s. The remnants of Fort Alexander - constructed in 1816-17 (see Historic Background section of this report) on Pu`u Poa Point above the east side of Hanalei Bay - was the subject of a field inspection by Rosendahl (1973) and mapping and test excavation by McCoy (1973). The fort is described as a "roughly oval, earthen-wall outline with a maximum interior diameter of 110 meters along a NE-SW axis" within which are "two stone outlines, situated on low earth mounds" (McCoy 1973:1-2). Excavation revealed "little material evidence for many troops and lengthy occupation," suggesting that the "fort was never completed" (McCoy 1973:7). Subsequently, a preservation and interpretive display plan for the fort was prepared (Hammatt and Shideler 1990).

Also during the 1970s Timothy Earle (1978) conducted a study of irrigation systems and pondfields of the Halele`a District. Within Hanalei, Earle recorded six modern irrigation systems. Additionally, he recorded two archaeological sites. Site Ka-D10-9 was a "fishpond (Kamo`omaika`i) located at the mouth of the small Waileia stream" consisting of, as shown on a nineteenth century sketch map, a "sea wall...constructed across the mouth of the valley to create a 1.64 ha fishpond' with a "small area of taro...cultivated to one side of the pond, and coconut and breadfruit trees [growing] along the edge" (Earle 1978:100). At the time of Earle's study, the site was "distinguished by a marsh and fragments of the old sea wall" (*Ibid.*). Site Ka-D10-10 was an irrigation site located "just east of the `Anini stream" with the ditch comprising the "only feature preserved at the site"; pondfields, no longer preserved, were located "below the ditch line and facing the sea," and apparently were "constructed almost down to the shoreline" (*Ibid.*:100-101).

Cleghorn (1979b) conducted an extensive survey of most of the Hanalei Wildlife Refuge. The survey recorded twelve prehistoric or historic age sites, two of which are located just outside the current project area. Site 9 was identified between 25 and 125 ft elevation, just below the 250 ft. elevation boundary of the current project area. Site 9 (later given State Site No. 50-30-03-1015) was described as "an extensive, discontinuous terracing system on ridges between four small streams, covering an area of approximately 80.0 by 260.0 m. Some of the terraces are simply bounded by single-stone alignments, while others have terrace facings approaching 2 meters in height" (Cleghorn, 1979:11). In addition, Cleghorn mentions a possible habitation feature and several economically viable plants in the area such as *ti*, *hala*, banana, breadfruit and feral taro. Cleghorn concludes this site was prehistoric and may have been irrigated by small streams draining within its boundaries (Cleghorn, 1979:16). Site 10, later given state site number 50-30-03-1016 was described as an L shaped wall, measuring approximately 20.0 by 50.0 m by 0.3 m high located north of site 9.

Subsequently, Schilt (1980) accomplished a survey and test excavations in "specified areas" of the Wildlife Refuge to mitigate "potential impacts upon archaeological resources of the proposed construction of an irrigation pipeline and access roads in the Refuge" (Schilt 1980:1). Expanding upon the Cleghorn survey, Schilt's survey noted a "total of 21 sites now recorded in the Refuge" including: two prehistoric habitation sites, four historic habitation sites, and 17 agricultural sites" (Schilt 1980:58-59). Site 50-30-03-1015 (listed as Site D10-20) was re-surveyed and its extent was further defined as 460 m. northwest-southeast and c. 100 m. southwest-northeast. Tentative maps were made of the site which included extensive terracing and two enclosures. A possible *papamū* or *kōnane* board was found north of the larger of the two enclosures. Schilt concluded that the lack of *`auwai* construction indicated the stone faced terraces found on sloped faces were probably used for dryland crops (Schilt, 1980:41). Schilt noted that "Hanalei was likely one of the earliest valleys settled in the district," based on radiocarbon dating of a sample from Site D10-12, an earthen *lo`i* complex, which "yielded the earliest date, A.D. 610±95, yet available for a *lo`i* context on Kaua`i or in Hawai`i (*Ibid.*:75).

Shapiro (1993) conducted a surface inventory survey and test excavations for the 915 acre Hanalei National Wildlife Refuge in the Halele`a District associated with proposed developments within the refuge. This inventory survey included visiting and updating previously recorded sites. a systematic survey of the project area, six backhoe trenches and test excavations at four sites. Preliminary results of the survey included 13 newly identified archaeological sites and two newly identified "find spots" (consisting of ambiguous flats on the ridge of slopes resembling agricultural earthen terraces). Deposits from backhoe trenching revealed buried pondfields in five of six trenches excavated in historic and prehistoric *lo`i*. Test excavations were carried out in three enclosures and one rock-lined terrace. Preliminary results indicate that enclosures and terraces may have been associated with habitation rather than agriculture, as was previously suggested. One test pit was excavated in Site 50-30-03-1015, located just downslope (at approximately 125-foot elevation) from the present project area. Shapiro (1993:4) suggests the basalt waste flakes discovered were probably indicative of habitation rather than agriculture, and the large upright stone and feature area may relate to religious activity at the site.

These three studies (Cleghorn 1979, Schilt 1980, and Shapiro 1993) are of particular relevance to the present study owing to their documentation of the extensive site complex 50-30-03-1015, located just downslope (between 25 and 125 ft elevation) from the present project area. These site complexes were probably used into the historic period as Shapiro suggests and probably conform to the fenced areas on Wall's 1893 map (see Figures 5 & 7).

During the 1980s, archaeological studies of Hanalei focused on Hanalei areas specific to projected development or improvement. Athens (1981) surveyed three archaeological sites located along the beach fronting the Hanalei Bay Resort; the sites were: an alignment or possible platform, a stacked-stone wall, and an agricultural field. Hammatt. Ida and Folk (1981) conducted a survey of Kamo`omaika`i (Site Ka-D10-9) "in response to a proposal to fill a portion of the present marsh and construct fishponds." Athens (1983) conducted archaeological excavations at Site KA-D10-12 within the Hanalei National Wildlife Refuge, first located by Cleghorn in 1979, and tested by Schilt in 1980; Athens' work "revealed two stratified pondfield layers...The lower layer...produced three late radiocarbon dates. indicating that pondfield construction and use occurred during the 18th century" (Athens

1983:i). Hammatt and Borthwick (1986) performed an archaeological reconnaissance of upper Hanalei Valley, including over five miles of the river valley from Ka`apoko Stream to Hanalei Homesteads. Fourteen sites - including prehistoric terraces, shelters and platforms; and historic house sites and irrigation features - were located on "both sides of the river...concentrated on the level point bars adjacent to the channel"; additional sites were surmised to exist extending upslope outside the project area (Hammatt and Borthwick 1986:ii).

In the mid-1980s, Land and Community Associates was contracted to undertake a "cultural landscape survey" of Hanalei *Ahupua`a* (Thousand Friends...1987). The study, which included fieldwork, historical background research, and oral histories, included documentation of "396 separate taro terraces (*lo`i*), 81 historic structures and 3 major irrigation systems" (1000 Friends...1987:12).

Into the 1990s, archaeological study within Hanalei continued to be restricted to development-specific areas. Kikuchi (1992) conducted further study at Kamo`omaika`i fishpond, concentrating on coring and palynological analysis of the pond. Kikuchi suggests that the fishpond was "probably not successful...[due] to deleterious natural forces, such as tsunami, storms and floods...; the presence of a fresh water environment; and a relative lack of a strong native political power in the Hanalei area" (Kikuchi 1992:56). Spear (1992) conducted an archaeological inventory survey of a 25,000 sq. ft. portion of St. Williams Church property (TMK 5-5-02:37) planned for development; testing revealed "both pre- and post-Contact deposits which have been given State Site Number 50-30-03-1877" (Spear 1992:16). Bordner (1994) conducted an archaeological reconnaissance survey with subsurface testing of Hanalei Garden Farms properties (UNIT (TMK) 5-4-4-10/5-4-4-9); only an "early 20c. mill foundation and a possible agricultural feature" were located (Bordner 1994:1).

In 1996 Hammatt *et al.* performed an inventory survey of a nearby 20-acre property along the bend in the Hanalei River on the east side of the river. This project included subsurface testing and coring of wetland deposits with exploratory pollen analysis. No archaeological materials were encountered but the core analysis documented the occurrence of intact pre-contact marsh deposits.

B. Anticipated Finds

As previously pointed out, portions of the project area had been subject to previous archaeological studies (Cleghorn 1979a, Kikuchi, 1988a, 1988b) which had identified no sites in the vicinity of the project area on the top of the plateau east of the Hanalei river valley other than the previously identified Po`okū *Heiau*. No historic use of the area other than grazing, the construction of a road circa 1900, and Princeville Resort activities was indicated. Although their were indications that Po`o Kū *Heiau* might be rather large (Thrum 1906:43; McMahon 1993) the distance (300+ m) from the project area suggested no connection. Although significant sites were previously documented (Cleghorn 1979, Schilt 1980, and Shapiro 1993) at the base of the slope near the project area (Figure 7) it was thought the valley wall was too steep to support such sites further upslope near the project area. It was thought most likely that any sites would be associated with possible trails and the circa 1900 road (Figure 6) along the upper edge of the cliff.

V. RESULTS OF FIELDWORK

A. Survey Methods

Fieldwork was performed by two archaeologists from Cultural Surveys Hawai`i, Inc., David W. Shideler, M.A. and Anthony Bush B.A. under the overall supervision of Hallett H. Hammatt, Ph. D. on August 16, 2000. Survey coverage was 100%. Fieldwork was by pedestrian sweeps spaced 5-15 m apart depending on ground visibility which ranged from good to poor. No sites were identified.

B. Field Survey Findings

Maps of the project area provided appeared to include a narrow strip on the northeast side of the highway. It was thought that there might possibly be some slight widening of this *makai* side of Kaumuali`i Highway to accommodate the proposed scenic overlook. This *makai* margin of the highway is all graded with the Princeville Golf Course lawn extending to the edge of the highway (Figure 8). This *makai* side of the highway clearly has no surface archaeology and was evaluated as having virtually no chance for significant subsurface cultural deposits.

The portion of the project area immediately adjacent to the south and southwest side of the highway was a relatively level plateau varying from 90 m (300 feet) wide at the east end to only 15 m (50 feet) wide at the west end. The portion lying immediately adjacent to the highway was graded level and maintained in short cropped grass. (Figures 8 and 9). This *mauka* strip along the highway clearly has no surface archaeology and was evaluated as having virtually no chance for significant subsurface cultural deposits. Much of the southeastern portion of the project area was used as part of the Princeville Corporation nursery circa the 1970s. This area was all previously rather-massively graded with ample evidence of nursery infrastructure (weed block fabric, sprinkler system, hundreds of black plastic pots apparent. Although relatively recently abandoned this area was quite lush with *Wedelia trilobata*. tall grasses, *Asystasia gangetica* , and a variety of exotic plants - many having rooted through the base of still extant plastic pots. The northwestern portion of this plateau was largely in strawberry guava and christmasberry.

The southern and southwestern portion of the project area was a quite steep soil cliff (Figures 10 and 11) on which the dominant vegetation was overwhelmingly a thicket of dense to extremely dense *Waiawi* or strawberry guava (*Psidium cattleianum*) with some *hau* (*Hibiscus tiliaceus*), *hala* (*Pandanus odoratissimus*) and cats-claw. On this upper slope the only apparent modification observed were three scattered earthen terraces, each approximately one-meter wide and four meters long parallel to the contour. While it is possible these are natural step erosional features on these soil ridges, the similarity in size and orientation on ridges with southern exposures suggested that they were deliberately created for *Cannabis* cultivation. While no grow-pots or trails leading to these earthen terraces were observed it was thought most likely that they were created by persons involved in small scale illicit production in the distant past.

Figure 8 General View of the Area *Makai* (Northeast) of the Highway Adjacent to the Project Area which is a Portion of Princeville Golf Course (View to ESE)

Figure 9 View of Northwest Portion of the Project Area, Steep Cliff Immediately to the Right (View to ESE)

Figure 10 View of West Central Portion of the Project Area (View to WNW)

Figure 11 General View of the Southwestern Portion of the Project Area from West of the Hanalei River (River in Foreground. View to NE)

The only rock observed within the project area was in the northwestern cliff area but these boulders may have been pushed down from grading up on the plateau.

No sign of pre-contact land alteration was observed anywhere in the project area. No sign of historic land alteration pre-dating the nursery of circa the 1970s was observed (other than the highway itself). Our assessment in the field was that the potential for significant subsurface deposits was virtually nil.

The sweeps of the cliff extended down to an estimated elevation of 250-feet in an area of relatively uniform dense *Waiawi* on a steep slope. Although the "large upper flat...situated c. 125 ft above sea level" (Schilt 1980:41) in a relatively open area of large mango trees upon which site 50-30-03-1015 is located should have been close, no sign of this site complex was observed. The site 50-30-03-1015 complex was identified between 25- and 125-foot elevation (Cleghorn 1979:11) and is understood as approximately 125 ft in elevation below the present project area at a distance downslope of approximately 100 - 150 m.

A focus of the fieldwork was to examine the relationship of the project area to State site 139 Po`okū *Heiau*. To briefly review previous studies of the *heiau*, T. G. Thrum (1906:43)described this as "An unenclosed *heiau* of about two acres in area. Of Luakini class, terraced down on all sides from the central platform." Bennet (1931) visited the site but noted that "only a few stones remain." Ching (1974) distinguished three approximately one meter high earthen terraces and a scattering of stones over the terraces and a possible alignment of stones on the southeast side of the *heiau*. Kikuchi (1988b) visited the site in 1988 and concluded Po`okū *Heiau* was "unaffected by both church [Church of the Pacific] and [Princeville Corporation] nursery construction." McMahon (1993) however determined that the nursery had impacted the *heiau* with a road cut at the nursery entrance and along the southern boundary of the nursery. McMahon also noted a trig station directly on the *heiau* and that Kapaka Road impacted terraces on the east and south sides.

The vicinity of the trig station was reconnoitered in an attempt to demarcate boundaries of Po`okū *Heiau*. Aside from the stones incorporated within the trig station on the summit, very few stones were observed anywhere in the vicinity. It was concluded that Po`okū *Heiau* was a largely natural landscape feature with minimal modifications which appear to have been primarily modest leveling of earthen terraces. Aside from the highest point itself (occupied by the trig station) the focus of the *heiau* appeared to be on the east side, taking advantage of the spectacular vistas offered in that direction. While the boundaries of this site were not clearly discernible, inasmuch as the nearest point of the project area lies more than 300 m (1,000 feet) northwest from the summit/trig station of Po`okū and given that the modifications of the hill appear to be primarily in the opposite (east or southeast)direction, it appears certain that the proposed development will not adversely effect Po`okū *Heiau* at all.

CONCLUSIONS

Historic research indicated no historic properties within the project area other than a road constructed sometime between 1893 and 1904 running along the edge of the bluff. The project area was subjected to a 100% pedestrian archaeological inventory survey and no surface archaeological sites of any kind were identified. The potential for subsurface archaeological deposits is regarded as exceedingly low. No significant archaeological sites are believed to exist within the area.

Any possible impact to Site 139, Po`okū *Heiau* was specifically evaluated and it was concluded that this project will have no impact on Po`okū *Heiau* which lies more than 300 m distant and appears to be oriented toward the opposite direction.

It has been noted that an archaeological site (50-30-03-1015) complex was identified between 25- and 125-foot elevation (Cleghorn 1979:11) and is understood as approximately 125-feet in elevation below the present project area at a distance down a steep slope of approximately 100 - 150 m. Efforts should be made to avoid adverse impact to this site complex during project construction to avoid both direct impacts such as bulldozer push and secondary impacts from run-off.

If in the exceedingly unlikely event that any burials or other significant finds are unearthed in the course of excavation all work in the vicinity should stop and the State Historic Preservation Division should be immediately notified.

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Appendix C

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

FEB 16 2017

In Reply Refer To:
01EPIF00-2017-I-0135

To: Project Leader, Kauai National Wildlife Refuge Complex

From: Island Team Manager Oahu, Kauai, Northwestern Hawaiian Islands, and American Samoa

Subject: Informal Consultation for Proposed Hanalei Valley Viewpoint, Kauai

The U.S. Fish and Wildlife Service (Service) Ecological Services received your email, dated December 20, 2016, requesting our concurrence that the proposed project may affect, but is not likely to adversely affect (NLAA) the following federally listed species: the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian gallinule (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*) (collectively referred to as Hawaiian waterbirds); the endangered Hawaiian goose (*Branta sandvicensis*); the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*); and the endangered Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm-petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus newelli*) (hereafter collectively referred to as seabirds). We provided our concurrence to the Federal Highway Administration (FHWA) in July 2001 on the proposed project and the Service Kauai National Wildlife Refuge Complex submitted to us a revised Intra-Service Section 7 Biological Evaluation (BE) form in June 2002. The Service is supplementing the 2003 Environmental Assessment for the proposed project with a revised preferred alternative based on the 2016 Hanalei Valley Viewpoint Feasibility Study. On December 20, 2016, you requested via email NLAA concurrence for the band-rumped storm petrel in addition to those species listed in the July 2001 FHWA request , and provided conservation measures that are incorporated in the project description.

The findings and recommendations in this consultation are based on the following: (1) your consultation request; (2) the 2016 Hanalei Valley Viewpoint Feasibility Study Report; (3) the 2003 Final Environmental Assessment for the Hanalei Valley / Hanalei National Wildlife Refuge Scenic Stop; and (4) information available to us. Copies of pertinent materials and documentation are maintained in an administrative record in the Service's Pacific Islands Fish and Wildlife Office in Honolulu, Hawaii. This response is in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531 *et seq.*).

Project Description
The Service in coordination with the County of Kauai and the Hawaii Department of Transportation is proposing to construct a viewpoint along Kuhio Highway as part of the Hanalei National Wildlife Refuge. The project includes plans for construction of three viewpoints, a visitor contact restroom building, interpretive panels, a kiosk, parking for vehicles and shuttles, transit facilities, and a non-motorized multimodal trail. The viewpoint will be located on a 5.4-acre parcel in Princeville on the island of Kauai.

Conservation Measures
To avoid and minimize impacts to federally listed species and their habitats, the below conservation measures are considered part of the project description and will be implemented at the project site. Any changes to, modifications of, or failure to implement these conservation measures may result in the need to reinitiate this consultation.

- Refuges will work with our office in the design of the stormwater management system to limit the attraction of standing water for wildlife. If a listed Hawaiian waterbird is observed within the project site, or flies into the site while activities are occurring, a biological monitor will halt all activities within 100 feet of the individual(s). Work should not resume until the Hawaiian waterbird(s) leave the area on their own accord.

- A biologist familiar with the nesting behavior of the Hawaiian goose will survey the area prior to the initiation of any work, or after any subsequent delay in work of three or more days (during which birds may attempt nesting). If a nest is discovered, work will cease immediately and our office will be contacted for further guidance. Furthermore, all on-site project personnel will be apprised that Hawaiian geese may be in the vicinity of the project at any time during the year. If a Hawaiian goose (or geese) appears within 100 feet of ongoing work, all activity will be temporarily suspended until the Hawaiian goose (or geese) leaves the area of its own accord.

- Woody plants greater than 15 feet tall will not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing will be timed to avoid disturbance to Hawaiian hoary bats in the project area.

- The lighting will be motion-triggered and be shielded and/or full cut-off. Effective light shields will be completely opaque, sufficiently large, and positioned so that the bulb is only visible from below. In addition, construction activities will only occur during daylight hours. The parking lot will not be lit and the lighting at the restroom building will be directed downward.

Summary
Implementation of the above conservation measures will avoid and minimize impacts to listed species. Based on the avoidance and minimization measures that will be implemented, we concur with your determination that the proposed project, may affect, but is not likely to adversely affect the Hawaiian stilt, Hawaiian gallinule, Hawaiian coot, Hawaiian duck, Hawaiian goose, Hawaiian hoary bat, Hawaiian petrel, band-rumped storm-petrel, and Newell's shearwater. Unless the project description changes or new information reveals that the action may affect

listed species in a manner or to an extent not considered, no further action pursuant to section 7 of the ESA is necessary.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Adam Griesemer, Endangered Species Biologist (phone: 808-285-8261, email: adam_griesemer@fws.gov). When referring to this project, please include this reference number: 01EPIF00-2017-I-0135.

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Appendix D

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Kaua'i National Wildlife Refuge Complex
P.O. Box 1128
Kīlauea, HI 96754
Phone 808-828-1413 / Fax 808-828-6634

30 January 2019

Alan Downer, PhD
Administrator, Deputy State Historic Preservation Officer
State Historical Preservation Division
Kākuhihewa Building
601 Kamokila Boulevard, Suite 555
Kapolei, Hawai'i 96707
DLNR.Intake.SHPD@hawaii.gov

Subject: Continuing Consultation - DETERMINATION OF EFFECT Section 106 and HR Chapter 6E-42 Compliance: **Hanalei Valley Viewpoint Project, Hanalei Ahupua'a, Halele'a District, Kaua'i, TMK (4) 5-3-001-016**

By way of this memo, the U.S. Fish and Wildlife Service (FWS) is confirming documentation as stipulated in 36CFR800.11(e) for a finding of No Adverse Effects for the proposed undertaking. This represents a summary of documentation that has previously been provided in memos dated 27 October 2017 and 7 August 2018. This memo is being transmitted both via email and via USPS.

(1) A description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, and drawings, as necessary:

The U.S. Fish and Wildlife Service (FWS) is proposing to construct an interpretive viewpoint for the local community and visitors to the North Shore of Kaua'i, to connect the public with the cultural and natural heritage of Hanalei National Wildlife Refuge (HNWR) (Figures 1 and 2). The project will occur on land that will be acquired by the FWS and is located along the Kūhi'ō Highway (State Route 56) approximately 1/10th of a mile east from the intersection of Kūhi'ō Highway and Ka Haku Road (the main entrance to Princeville). The involvement of the federal agency (FWS) and anticipated federal ownership of the land makes the project a federal undertaking subject to compliance with Section 106 of the NHPA.

The FWS proposes to construct visitor use infrastructure, including a welcome and orientation kiosk, short trails to two small viewpoints, seating, interpretive signage, and parking for vehicles and buses on a 5.428 acre parcel of land off Kūhi'ō Highway (TMK (4) 5-3-001-016). Constructing the new viewpoint will require clearing approximately 1.5 acres of an abandoned plant nursery of non-native species and nursery debris. Approximately 0.5 acres of the cleared area will be paved for parking and approximately 0.1 acres will be paved for pedestrian trails to the small viewpoints. The remaining accessible area will be landscaped and seeded with native plants to prevent potential erosion. The Princeville Nursery was active in the 1970s, but has not been used for that purpose for many years. Figure 3 shows the nursery infrastructure debris that remains on the parcel.

Development of the viewpoint will include the following activities (Figure 4 and 5):

- *Kūhi'ō Highway Improvements* - ingress/egress lanes to the viewpoint will be constructed
- *Development of Visitor Use Infrastructure* -
  - A sign will be erected on Kūhi'ō Highway to welcome visitors into the viewpoint

- A paved parking area for buses, 22 cars and 2 ADA-accessible parking spaces will be built
- A concrete pad will potentially support portable or vault toilets, which are proposed as part of the project if funding allows.
- A welcome and orientation kiosk will be erected and a concrete trail will lead to two small overlooks with seating and interpretive signage

- *Safety and Boundary Fencing-*
  - A vehicle gate will be installed at the ingress off of Kūhi'ō Highway
  - A small structural wall will be erected to keep visitors back from the steep edge on the west side of the parcel
  - A privacy wall and landscape berm will be built along neighboring property edge to fulfill the terms of the land acquisition

A significant portion of the 5.428-acre parcel is comprised of steep slope (4% grade) upon which no activities will occur (Figure 6). Ground disturbing activities will be confined to the 1.5-acre area within which clearing and paving will occur, as well as the footprint within the existing road right-of-way where vehicle ingress/egress and acceleration/deceleration lanes will be established. For the purposes of this undertaking, however, the entire 5.428 acre parcel which will be acquired by the FWS and within which activities will occur is defined as the area of potential effect (APE).

Project Background and History: Plans for the Hanalei Valley Viewpoint project have been under development for nearly 20 years. The current project represents a significantly scaled-down version of the original project for which Section 106 compliance was conducted by the previous lead federal agency. In 2003, the State of Hawai'i Department of Transportation Highways Division (HDOT) and U.S. Department of Transportation Federal Highways Administration (FHWA) completed a Final Environmental Assessment/ Finding of No Significant Impact for the project which was called "Hanalei Valley/ Hanalei National Wildlife Refuge Scenic Stop" (FHWA 2003). In contrast to the current configuration of the project, the original proposal included the construction of a visitor center and three times more parking spaces. Figure 7 illustrates how the project footprint has evolved. The original project activities, though the same in character, were greater in volume, and therefore had greater potential for impacts to the landscape. At the same time, the physical footprint of the APE for the previous scope was only slightly larger and included the entirety of the current APE. It is for this reason that the FWS has drawn upon the original survey and consultation results to inform our current Section 106 compliance efforts.

(2) A description of the steps taken to identify historic properties:

A cultural resource identification effort conducted within the footprint of the original project APE documented that no cultural resources were identified (Cultural Surveys Hawai'i, Inc. 2000). The effort encompassed the entirety of the current 5.428-acre APE, and took into consideration all the same ground disturbing activities that are currently proposed. The authors noted that the southern portion of the APE was comprised of a "quite steep soil cliff," and described the area slated for construction this way:

> "The portion of the project area immediately adjacent to the south and southwest side of the highway was a relatively level plateau varying from 90 m (300 feet) wide at the east end to only 15 m (50 feet) wide at the west end. The portion lying immediately adjacent to the highway was graded level and maintained in short cropped grass. This mauka strip along the highway clearly has no surface archaeology and was evaluated as having virtually no chance for significant subsurface cultural deposits. Much of the southeastern portion of the project area was used as part of the Princeville Corporation nursery circa the 1970s. This area was all previously rather massively graded with ample evidence of nursery infrastructure (weed block fabric, sprinkler system, hundreds of black plastic pots apparent). Although relatively recently abandoned this area was quite lush with Wedelia trilobata, tall grasses, Asystasia gangetica, and a variety of exotic plants -- many having rooted through the base of still extant plastic pots. The northwestern portion of this plateau was largely in strawberry guava and christmasberry." (Cultural Surveys Hawai'i, Inc. 2000:29)

The authors confirmed:

> "The project area was subjected to a 100% pedestrian archaeological inventory survey and no surface

archaeological sites of any kind were identified. The potential for subsurface archaeological deposits is regarded as exceedingly low." (CSH 2000:33).

Cultural Resources in the Vicinity: While no historic properties were identified within the APE, research identified known sites in the vicinity for which the potential visual or indirect impacts were evaluated (Figure 7).

Po'okū Heiau: The location of Site 139, the Po'okū Heiau, was determined to lie more than 300 meters distant from the APE and appears to be oriented toward the opposite direction. Originally described as an unenclosed heiau of about two acres, the authors concluded that "it appears certain that the proposed development will not adversely effect Po'okū Heiau at all" (CSH 2000:32).

50-30-03-1015: This is one of several sites designated within the Hanalei National Wildlife Refuge Historic and Archaeological District (Site 50-30-03-304). Described as an extensive archaeological site complex, the site is located 125 feet in elevation downslope and 100-150 meters away from the APE. While well outside the APE, the authors recommended restricting bulldozer push and secondary impacts from run-off to ensure avoiding impacts to this downslope site (CSH 2000:33). (Site 1016 is located near 1015, but is not directly downslope from the APE where ground disturbing activities may occur.)

Kūhi'ō Belt Road: In the years following the original consultation and compliance effort, the Kūhi'ō Belt Road, with its associated bridges and other contributing elements, was successfully nominated to the National Register of Historic Places (NRHP) for its state and local significance in early engineering, transportation and social history (listed 2003, NRHP Historic District #03001048). Given the potential proximity of the district to the APE, the FWS conducted additional research to determine whether the project had the potential to impact the listed historic property either physically or virtually.

According to the nomination form, the boundary of the district begins at Mile Marker 0 of Hwy 560, which is located approximately 1,360 feet to the northwest of the current APE and continues to the west from that point. It is not visible from the APE. As a result, the FWS has determined that the undertaking will not have an impact on the road or any of the contributing elements of the Historic District.

(3) A description of the affected historic properties, including information on the characteristics that qualify them for the National Register:

No historic properties occur within the APE.

(4) A description of the undertaking's effects on historic properties:

The project will have no direct effect on historic properties.

(5) An explanation of why the criteria of adverse effect were found applicable or inapplicable, including any conditions or future actions to avoid, minimize or mitigate adverse effects;

During the initial development of the project in the early 2000s, FHWA -- as the lead agency for the original project -- conducted consultation and coordination with state and federal agencies, Native Hawaiian organizations, local communities and individuals. Early coordination included the State Historic Preservation Division (SHPD), Office of Hawaiian Affairs (OHA), and the Kaua'i Historic Preservation Review Commission.

The ultimate outcome of FHWA's consultation with SHPD and the interested parties was a determination of "no adverse effects" to historic properties, *not because of physical impacts to cultural resources in the APE but* based on a concern that presentation of inaccurate interpretive messages on cultural subjects could constitute an adverse effect to cultural resources.

On 17 January 2002, SHPD wrote:

> "No historic sites were found in the project area. Po'okū Heiau and the Hanalei National Wildlife Refuge Historic and Archaeological District are not directly in the project's area of potential effect. Indirect effects are possible in relation to the view and interpretation of Hanalei, and in our previous letter, we itemized concerns and proposed conditions to ensure no adverse effects would occur. Your letter indicates an acceptance of those conditions. Thus, we concur with your determination that this project will have "no adverse effect" on significant historic sites, with the understanding particularly that interpretive material will be submitted to our office for review." (memo, N. McMahon to P. Phung, 17 January 2002) (2003 EA, p. 450).

To address the concern, a commitment was made that the project would invite SHPD to participate in the review of the content for interpretive materials related to significant historic sites associated with the new viewpoint. While it remains the case that no historic properties will be affected by the current project, the FWS has and will continue the commitment to seek feedback from SHPD and the local community on review of interpretive materials to ensure accuracy of information provided.

In addition, a commitment was made during the initial review to avoid visual impacts to Hanalei Valley by using setbacks, landscaping, grading, and architectural methods, and avoiding construction outcomes such as bulldozer push and erosion run-off. These commitments continue in force for the current project. The results of the original consultations and the determination of effect are documented in the 2003 EA (FHWA 2003). The results of current consultation and determination of effect, as summarized in this memo, will be included in the EA being prepared by FWS and scheduled for release in early 2019.

(6) Copies or summaries of any views provided by consulting parties and the public.

Consultation with interested parties has been ongoing since the project was re-initiated in 2016. In coordination with the County of Kaua'i and Hawai'i Department of Transportation (HDOT), the Service held meetings to solicit input from stakeholders including community leaders from the Hanalei Watershed Hui and the Hanalei to Hā'ena Community Association. A stakeholder kickoff meeting in January 2016 was attended by Congressional representatives; County of Kaua'i Parks and Recreation, Planning Department, Public Works and Engineering, and Transportation; Hawai'i Department of Transportation; PBR Hawai'i, and the current landowner. Subsequent public meetings were held in March 2016 and August 2017 and separate meetings with specific partners and interested parties included elected officials, County, HDOT, Hanalei taro farmers, and the Kīlauea Neighborhood Association. For additional details, refer to the memo dated 7 August 2018 from FWS to SHPD.

In addition, Section 106 and HR Chapter 6E-42 consultation memos were sent to the following organizations:

- Office of Hawaiian Affairs
- Kaua'i Historic Preservation Review Commission
- Kaua'i /Ni'ihau Island Burial Council
- Hanalei Roads Committee
- Hui Ho'omalu i ka 'Aina
- Po'okū Heiau
- Hanalei Watershed Hui
- Waipā Foundation
- Hanalei Hawaiian Civic Club
- Department of Parks and Recreation/County of Kaua'i Parks Planner Nancy McMahon
- Individuals identified as possibly having a specific cultural or historic interest in the proposed project site as required by law

The only written or verbal comment response from the public or consulting parties regarding cultural resources came from Ms. McMahon in an email dated 9 October 2018, who commented that she concurs that under "NHPA Section 106 and HRS 6E-42, there are no historic properties in your APE, which should be a 'no effect'."

Determination of Effect:

The SHPD and FHWA initially agreed upon a determination that the project should be considered "no adverse effect," if efforts to accurately interpret the surrounding resources are made, as noted in the SHPD memo cited above dated 17 January 2002 (penned by Ms. McMahon when she was with the SHPD).

Since the project currently is the same in its essentials as originally designed except with a significantly smaller physical footprint, the FWS is recommending to maintain the original determination that the project will have a "no adverse effect" outcome under the 36 CFR 800 implementing regulations of Section 106 of the National Historic Preservation Act (NHPA) and HR Chapter 6E-42.

In the unlikely event that cultural resources are encountered during implementation of the project, the project proponent will be advised that work should halt in the immediate vicinity of the discovery, and the FWS regional archaeologist should be notified to provide guidance on how to proceed.

Sincerely,

Heather A. Tonneson

Heather A. Tonneson
Project Leader, Kaua'i National Wildlife Refuge Complex

References:

Cultural Surveys Hawai'i (Hallett H. Hammatt, Tina Bushnell, and David W. Shideler)

2000 Archaeological Inventory Survey of an Approximately 5 Acre Parcel of the Proposed Hanalei Valley Scenic Stop, Kūhi'ō Highway, Hanalei Ahupua'a, Halele'a District, Kaua'i (TMK 5-3-01:16). Prepared by Cultural Surveys Hawai'i, Inc., for Parsons Brinckerhoff Quade & Douglas, Inc.

State of Hawai'i Department of Transportation Highways Division and U.S. Department of Transportation Federal Highways Administration

2003 Hanalei Valley/ Hanalei National Wildlife Refuge Scenic Stop: Environmental Assessment/ Finding of No Significant Impact.

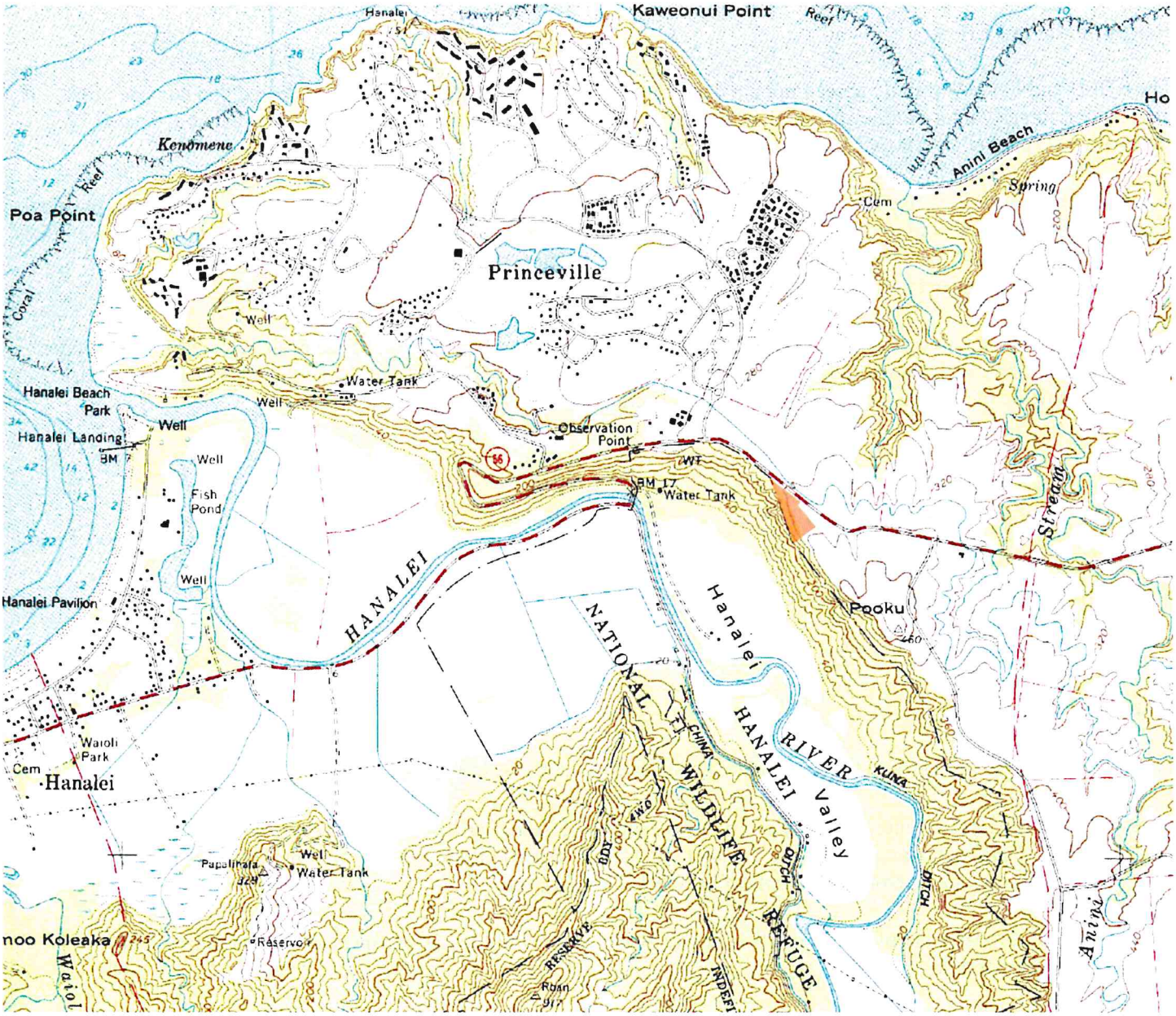

Figure 1. Project location on Hanalei 7.5' USGS quad (orange polygon).

Figure 2. Project location on aerial photograph.

Figure 3. Close up oblique aerial photograph showing abandoned nursery debris.

Figure 4. Conceptual plan for infrastructure associated with the Hanalei Valley Viewpoint.

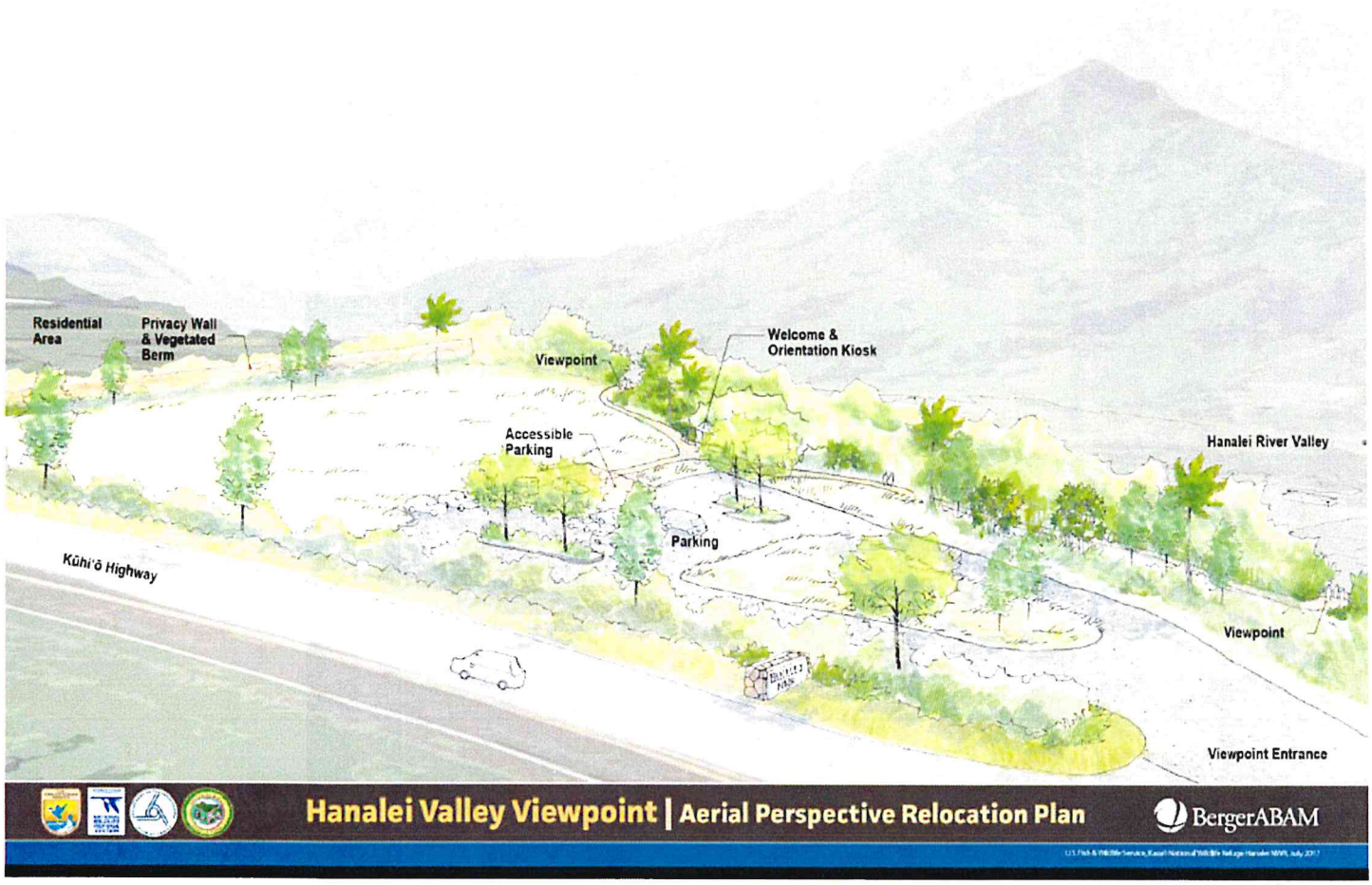

Figure 5. Oblique conceptual view of the Hanalei Valley Viewpoint.

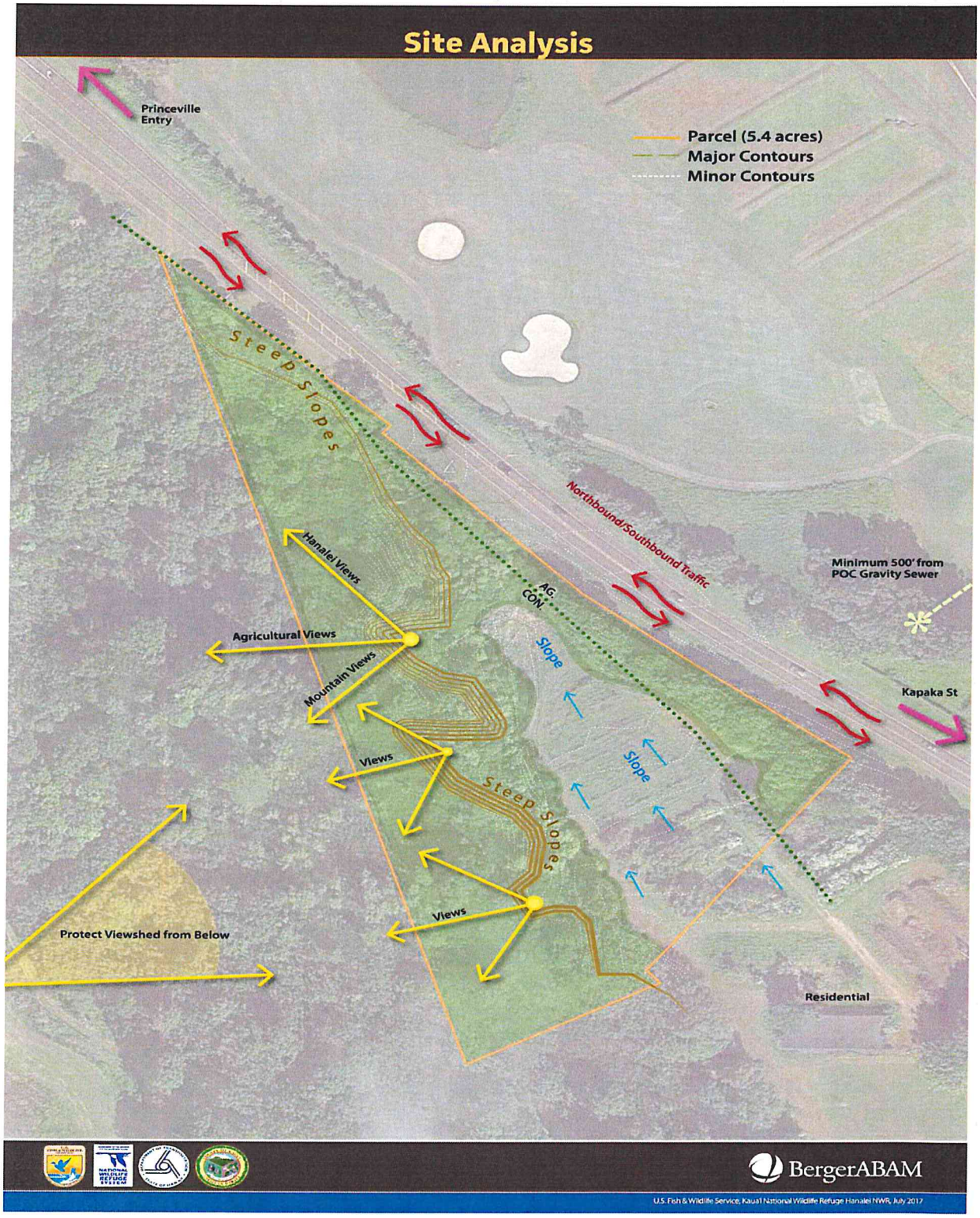

Figure 6. Project location showing terrain, slope, and other landscape features.

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

March 1, 2019

IN REPLY REFER TO:
Log No.: 2019.00210
Doc. No.: 1903SH01
Archaeology

Heather A. Tonneson, Project Leader
Kaua'i National Wildlife Refuge Complex
Fish and Wildlife Service
United States Department of the Interior
P.O. Box 1128
Kīlauea, Hawai'i 96754
Email: heather_tonneson@fws.gov

Dear Heather Tonneson:

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Review – Request for Concurrence with the Effect Determination**
Hanalei Valley Viewpoint Project
Hanalei Ahupua'a, Halele'a District, Island of Kaua'i
TMK: (4) 5-3-001:016

The State Historic Preservation Division (SHPD) received a letter from the Fish and Wildlife Service (FWS) to continue Section 106 consultation and to request the State Historic Preservation Officer's (SHPO's) concurrence with the Section 106 effect determination for the Hanalei Valley Viewpoint project on the island of Kaua'i. The SHPD received this submittal on January 31, 2019.

The FWS, in coordination with the Hawai'i Department of Transportation (HDOT), is proposing to construct an interpretive viewpoint for the local community and visitors to the North Shore of Kaua'i, to connect the public with the cultural and natural heritage of Hanalei National Wildlife Refuge (HNWR). The project will occur on land that will be acquired by the FWS and is located along the Kūhi'ō Highway (State Route 56) approximately 1/10th of a mile east from the intersection of Kūhi'ō Highway and Ka Haku Road (the main entrance to Princeville). The FWS has determined their involvement as a federal agency and anticipated federal ownership of the land makes the project a federal undertaking as defined in 36 CFR 800.16(y) and is therefore subject to compliance with Section 106 of the NHPA.

The FWS proposes to construct visitor use infrastructure, including a welcome and orientation kiosk, short trails to two small viewpoints, seating, interpretive signage, and parking for vehicles and buses on a 5.428-acre parcel of land off Kūhi'ō Highway [TMK: (4) 5-3-001-016]. Constructing the new viewpoint will require clearing approximately 1.5 acres of an abandoned plant nursery of non-native species and nursery debris. Approximately 0.5 acres of the cleared area will be paved for parking and approximately 0.1 acres will be paved for pedestrian trails to the small viewpoints. The remaining accessible area will be landscaped and seeded with native plants to prevent potential erosion.

Development of the viewpoint will include the following activities:

- *Kūhi'ō Highway Improvements –*
  - Ingress/egress lanes to the viewpoint will be constructed
- *Development of Visitor Use Infrastructure*
  - A sign will be erected on Kūhi'ō Highway to welcome visitors into the viewpoint
  - A paved parking area for buses, 22 cars, and 2 ADA-accessible parking spaces will be built
  - A concrete pad will potentially support portable or vault toilets, which are proposed as part of the project if

funding allows
- A welcome and orientation kiosk will be erected and a concrete trail will lead to two small overlooks with seating and interpretive signage

• *Safety and Boundary Fencing*
- A vehicle gate will be installed at the ingress off of Kūhi'ō Highway
- A small structural wall will be erected to keep visitors back from the steep edge on the west side of the parcel
- A privacy wall and landscape berm will be built along neighboring property edge to fulfill the terms of the land acquisition

The area of potential effect (APE) is described as the entire 5.428-acre parcel, which will be acquired by the FWS. A significant portion of the parcel is comprised of steep slope (4% grade) upon which no activities will occur. Ground disturbing activities will be confined to a 1.5-acre area within which clearing and paving will occur and to the existing road right-of-way where vehicle ingress/egress and acceleration/deceleration lanes will be established.

In support of the proposed project an Archaeological Inventory Survey (AIS) was conducted by Cultural Surveys Hawai'i, Inc. (CSH) followed by the preparation of a report titled, *Archaeological Inventory Survey of an Approximately 5 Acre Parcel of the Proposed Hanalei Valley Scenic Stop, Kūhi'ō Highway, Hanalei Ahupua'a, Halele'a District, Kaua'i (TMK 5-3-01:016)* (Hammatt et al. 2000). No historic properties were identified within the APE.

Three historic properties were identified within the vicinity of the APE: Po'oku Heiau, a site complex (Site 50-30-03-1015), and Kūhi'ō Belt Road. Po'oku Heiau was determined to lie over 300 meters from the APE and Site 1015 lies 125 feet in elevation downslope and 100-150 meters from the APE. CSH recommended restricting bulldozer push and secondary impacts from run-off to ensure avoiding impacts to this downslope site (Hammatt et al., 2000:33). *Kūhi'ō Belt Road,* nominated to the National Register of Historic Places (NRHP) for its state and local significance in early engineering, transportation and social history (listed 2003, NRHP Historic District #03001048) is not visible from the APE.

The FWS is committed to seeking feedback from SHPD and the local community on review of interpretive materials to ensure accuracy of information provided. In addition, FWS is committed to avoiding visual impacts to Hanalei Valley by using setbacks, landscaping, grading, and architectural methods, and avoiding construction outcomes such as bulldozer push and erosion run-off.

The FWS has requested the SHPO's concurrence with the determination of *no adverse effect* based on FWS's commitment to consult the community and the SHPD regarding the content of the proposed interpretive materials to ensure the interpretive signage accurately reflects the history and culture of Hanalei as well as FWS's commitment to avoid visual and construction impacts to nearby historic properties. **The SHPO concurs.**

The SHPD looks forward to the opportunity to provide comments on the proposed interpretive materials.

The FWS and the HDOT are the offices of record for this undertaking. Please maintain a copy of this letter with your environmental review record for this undertaking.

Please contact Stephanie Hacker, Historic Preservation Archaeologist IV, at Stephanie.Hacker@hawaii.gov or at (808) 692-8046 for matters regarding archaeological resources or this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Karen Chun, HDOT (Karen.Chun@hawaii.gov)
Jennifer Waipa, FWS (Jennifer_Waipa@fws.gov)

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Appendix E

HANALEI VALLEY VIEWPOINT FEASIBILITY STUDY
U.S. Fish and Wildlife Service
Kaua'i National Wildlife Refuge Complex

Meeting Summary

13 January 2016, 9:00AM – 3:00PM
Līhuʻe Civic Center, Pi`ikoi A &B Conference Room

ATTENDANCE

- David Sacamano, BergerABAM david.sacamano@abam.com
- Sam Jones, BergerABAM sam.jones@abam.com
- Kaulana Finn, Congresswoman Tulsi Gabbard's Office kaulana.finn@mail.house.gov
- Ian Costa, County of Kaua'i Parks and Recreation icosta@kauia.gov
- Nancy McMahon, County of Kaua'i Parks and Recreation nmcmahon@kauai.gov
- William Trugillo, County of Kaua'i Parks and Recreation wtrugillo@kauai.gov
- Lee Steinmetz, County of Kaua'i Planning Department lsteinmetz@kauai.gov
- Michael Moule, County of Kaua'i Public Works Engineering mmoule@kauai.gov
- Celia Mahikoa, County of Kaua'i Transportation Agency cmahikoa@kauai.gov
- Kimi Yuen, PBR Hawaii kyuen@pbrhawaii.com
- Jim Fields, Kalihiwai Investors LLC jfieldskauai@aol.com
- Charlie Parrott, U.S. Fish and Wildlife Service charles_parrott@fws.gov
- Charlie Pelizza, U.S. Fish and Wildlife Service charlie_pelizza@fws.gov
- Alex Schwartz, U.S. Fish and Wildlife Service alex_schwartz@fws.gov
- Jennifer Waipa, U.S. Fish and Wildlife Service jennifer_waipa@fws.gov
- Michael Mitchell, U.S. Fish and Wildlife Service michael_mitchell@fws.gov

MEETING INTRODUCTION

- Mike Mitchell, U.S. Fish and Wildlife Service (USFWS) Acting Project Leader for the Kaua'i National Wildlife Refuge Complex (KNWRC), began the meeting with a welcome address and reviewed the agenda. Next, the meeting attendees introduced themselves. Alan Yamamoto provided remarks on behalf of Senator Mazie Hirono and a brief background on the Public Lands Discretionary Highway (PLDH) project funding, and reiterated the senator's commitment to this project. The Mayor of Kaua'i, Bernard Carvalho, discussed the importance of the project to multiple stakeholders and encourage the group to work together to meet multiple objectives.
- Mike shared a PowerPoint presentation that began with an introduction to the USFWS. The presentation discussed the history of the USFWS, its mission and programs, and included a summary of the KNWRC facilities located on the island of Kaua'i, including the Hanalei, Kilauea Point, and Huleia National Wildlife Refuges (NWR). Mike also described the

previous planning work completed to date for the Hanalei NWR, including the 2004 Environmental Assessment and the 2010 Comprehensive Conservation Plan. Mike indicated that these planning efforts were necessary to understand the long-term maintenance and operations of KNWRC and to secure funding for the Hanalei viewpoint project.

- Alex Schwartz, PLA, a Landscape Architect/Project Manager for the USFWS Pacific Region's Transportation Program, presented a summary of the feasibility study scope of work, project work flow and deliverables, and estimated completion dates. Alex detailed the feasibility study process, including the development of four design concepts, a proposed public meeting to review the concepts, the draft feasibility report and cost estimates, and final feasibility report. Alex then presented an overview of the USFWS Roadway Design Guidelines discussing how the guidelines would apply to planning and design of the proposed project.
- David Sacamano, PLA, of BergerAbam (a consultant hired by USFWS to assist with technical architectural and engineering tasks), described the workshop format, provided an overview of the various open house stations, and presented the agenda for the morning and afternoon sessions.

MEETING SUMMARY

- The meeting attendees worked with the design team to develop site plan concepts for both parcel Alternative 1 and parcel Alternative 2. During this morning session, meeting attendees provide input on access, circulation, parking, utilities, and site layout. Multiple concepts were prepared prior to the lunch break. The design team also captured comments and input from meeting attendees regarding the project goals, program elements, opportunities, and constraints. These comments were recorded on flipcharts distributed around the room. A project questionnaire was also available to gather additional input from attendees.
- During the lunch break, the design team refined the concept sketches and organized them for presentation.
- In the early afternoon, the attendees gathered review the concept sketches and summarize the day's findings. David reviewed the project goals and program elements and summarized the additional comments received. David also summarized the comments recorded on the flipcharts. A summary of the goals, program, and additional comments is listed below.
- The next steps were revisited and the meeting adjourned at 3:30 PM.

ADDITIONAL MEETING COMMENTS

General Comments and Concerns on Flipcharts

- Concerns about buildings and visual impacts to valley below.
- Consider site history/cultural character of site.

- Project should provide solutions to traffic (local concerns). Site is located along tsunami evacuation route roadway.
- Two thousand visitors per day to Haena State Park – Na Pali Coast trail is a big draw.
- Consider Intelligent Transportation System for parking management to inform transit users where parking is available.
- Project should provide options to the private car. Integrate with shuttle system with multiple stops and parking lots.
- Consider grant/partnerships for funding and construction (e.g., federal, county, state, Hawaii Department of Transportation).
- Consider phased approach to project.
  - Complete architectural/engineering design to create a "shovel ready" project to best position for funding
  - Include alternate design elements to allow phasing of project development
- Partner with Hawaii Tourism Authority to investigate funding to support parking and transit system/local improvements.
- Planned shuttle bus operated by Kaua'i Bus (18 to 20 passenger vehicles). Site may need to accommodate large tour bus vehicles.
- Consider aligning entrance with Princeville entrance with a roundabout instead of traffic signal.
- Plan for closure of existing viewpoint near Foodland.
- Create path along valley rim to Hanalei NWR to improve pedestrian connectivity.
- Consider resin-based pavement system for pedestrian paths.
  - National Park Service examples
  - Terra-pave and natural-pave (nonpermeable)
  - Granite-Crete – binder to mix with aggregates (permeable)
- Stormwater management – use low impact development (LID).
  - Consider maintenance and what the County maintains
  - There are only six to eight people in County Parks department that take care of Kilauea to Haena
- The site needs a landscape management plan.
  - Restoration of native landscape
  - Control of invasive species
  - How to phase the project to preserve view protection
- As an alternative to fixed visitor contact station, consider mobile interpretation vehicle.
  - Provide location for vehicle to park
  - Provide Hale building(s) (small open-sided structures) for volunteers, staff, education, etc.

- No permanent building to save costs/no permits.
- For multiuse paths – consider width that will accommodate bikes.
- Consider Northshore Paths Plan layout. (Lee Steinmetz has copy of plan).
- Have at least one alternative – consider roundabout at Ka Haku Road with access to site.

General Comments on Concepts

- Provide minimum 100 parking spaces.
- Bus should not run through parking lot – potential safety concerns with buses and vehicles.
- Maintain predevelopment storm flows – consider LID impacts/options. Show storm facility locations and approximate size on concept plans.
- Maintain 500 feet between driveways.
- Highway speed – 40 mph.
- Highway tapers – 200 to 400 feet.

General Comments on Project Goals

The meeting attendees generally agreed with the preliminary project goals:

- Provide welcome and orientation to Hanalei NWR
- Provide wildlife observation opportunities
- Provide interpretation and education opportunities
- Provide restrooms
- Provide site access and safety
- Provide universal accessibility
- Provide transit amenities
- Accommodate transit and tour buses
- Accommodate car parking
- Accommodate future visitor contact station
- Minimize visual impacts to community and scenic area
- Minimize impacts to wildlife and ecology

The following additions were offered:

- Consider safety/security for adjacent private property and users.
- Develop community buy-in for project.
- Maximize opportunities for partnerships.
- Balance lighting needs for safety and Americans with Disabilities Act compliance.

General Comments on Project Program

The meeting attendees generally agreed with the preliminary project program:

- Protect sensitive NWR habitat
- Optimize parking and transit that responds to community needs
- Create wildlife dependent recreation opportunities at Hanalei NWR, including observation, interpretation, and education
- Promote an environmentally sustainable project that is cost effective to construct and maintain
- Develop transportation improvements consistent with USFWS standards

The following additions were offered:

- Delete "wildlife observation opportunities" as this activity will not occur at the viewpoint site.
- Welcome and orientation to Hanalei NWR should consider the cultural context of the site and serve as a gateway to the NWR.
- Future visitor contact station may take form of Hale building and should include facilities for "friends" group.
- Consider expanded partnership with State Parks – shared facility? Parks headquarters site?
- Consider lighting: can some light be provided for safety and accessibility?
- Consider pedestrian/bike connections from site to Princeville town center.

Questionnaire Summary

Two questionnaires were submitted and the following summary were provided:

Q1. What are your primary project goals for the viewpoint project?

- Relocation of existing viewpoint – roadway safety issues for ingress and egress from existing viewpoint location.
- Education and interpretation of the coastal landscape of Hanalei.
- Creating a quality facility

Q2. Please indicate what you believe are the most important project features for the viewpoint project.

- Interpretation and Education
- Parking
- Site Access and Safety
- Restroom Facilities
- Sustainable Design

Q3. What are your primary concerns about this project?

- Hours of operation and how the site will be secured when closed.
- Unsecure parking lots could become a "used car lot."
- Is there enough room to accommodate the park and ride program at this site?
- Ongoing maintenance and operations.
- Who locks and opens the facility each day?
- Security.

Q4. Please list any other comments or suggestions.

- If County will maintain site then County should have input on design.
- Will USFWS provide funding for operations?
- Suggest going to land trust to acquire land for sale at end of the bluff so most of the public access area is in government ownership and to protect overlook and buffer from highway.

MEETING SIGN-IN SHEET

Meeting attendees and contact information has been included in meeting notes.

OPEN HOUSE BOARDS

Open house boards have been attached to meeting notes.

DJS:llt

U.S. Fish & Wildlife Service

News Release

Kaua‘i National Wildlife Refuge Complex
PO Box 1128
Kīlauea, HI 96754
Phone: (808) 828-1413
www.fws.gov/kilaueapoint

Date: February 24, 2016 KPNWR 16-05
Contact: Jennifer Waipa, (808) 635-0925, jennifer_waipa@fws.gov

Public Meeting Scheduled for proposed Hanalei Valley Viewpoint Wednesday, March 16, 2016

Kaua‘i, Hawai‘i – The Kaua‘i National Wildlife Refuge Complex invites you to a public scoping meeting on the proposed Hanalei Valley Viewpoint feasibility study on Wednesday, March 16, 2016 from 2:30 p.m. to 6:00 p.m. at Uncle Jack’s Place (Hale Halawai/Hanalei Community Center) in Hanalei.

The U.S. Fish and Wildlife Service (FWS) is conducting a feasibility study for proposed site improvements to an area being considered for purchase in Princeville, along Kūhi‘ō Highway. The purpose of this study is to develop a conceptual design for safe access to the site for interpreting the National Wildlife Refuge System and endangered species management in Hanalei National Wildlife Refuge (NWR), while helping alleviate traffic congestion on the North Shore of Kaua‘i. The site will provide parking, transit facilities, restrooms, visitor contact information, and landscape wildlife observation for the Hanalei NWR that is otherwise closed to public access.

An Environmental Assessment for this project was released in 2001; however, certain aspects of the proposed project have changed with site design and property ownership. The current feasibility study will evaluate the visual and environmental impacts, vehicular and pedestrian circulation, safety, operation needs, and propose estimated construction costs. Conceptual design options prepared for the proposed viewpoint, informed by FWS and stakeholder input, will be presented for consideration and comment at the meeting.

Please contact Deputy Project Leader, Michael Mitchell, at (808) 828-1413 or email him at michael_mitchell@fws.gov if you have questions. You can also visit the Hanalei National Wildlife Refuge website (www.fws.gov/refuge/hanalei/) beginning March 16, 2016 to review the project summary and conceptual design options. Comments can be submitted to Michael Mitchell or Alex Schwartz (alex_schwartz@fws.gov) until March 25, 2016.

The Hanalei National Wildlife Refuge was established in 1972 under the Endangered Species Act. The Refuge is helping to recover five endangered water birds that rely on the Hanalei Valley for nesting and feeding habitat by managing and utilizing water from the Hanalei River to irrigate wetland impoundments, wet pasture, and taro patches.

The U.S. Fish and Wildlife Service works with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. For more information, visit www.fws.gov, or connect with us through any of these social media channels:

– FWS –

HANALEI VALLEY VIEWPOINT FEASIBILITY STUDY
U.S. Fish and Wildlife Service
Kaua'i National Wildlife Refuge Complex

Meeting Summary

16 March 2016, 2:30PM – 6:00PM
Uncle Jack's Place, Hanalei Community Center
Hanalei, Hawaii

MEETING INTRODUCTION

- Mike Mitchell, U.S. Fish and Wildlife Service (USFWS) began the meeting with a welcome address and reviewed the agenda. Next, Mike introduced Heather Tonneson as Project Leader for the Kaua'i National Wildlife Refuge Complex (KNWRC). Alan Yamamoto provided remarks on behalf of Senator Mazie Hirono and a brief background on the Public Lands Discretionary Highway (PLDH) project funding, and reiterated the senator's commitment to this project.
- Mike shared a PowerPoint presentation that began with an introduction to the USFWS. The presentation discussed the history of the USFWS, its mission and programs, and included a summary of the KNWRC facilities located on the island of Kaua'i, including the Hanalei, Kilauea Point, and Huleia National Wildlife Refuges (NWR). Mike also described the previous planning work completed to date for the Hanalei NWR, including the 2004 Environmental Assessment and the 2010 Comprehensive Conservation Plan. Mike presented the project schedule and indicated that the feasibility study would be completed in early June.
- David Sacamano, PLA, of BergerAbam (a consultant hired by USFWS to assist with technical architectural and engineering tasks), provided a brief summary of existing conditions at the viewpoint site and then briefly described the four conceptual designs presented at the open house. David reminded meeting participants that the designs are preliminary and encouraged the public to provided comment and input.

- Alex Schwartz, PLA, a Landscape Architect/Project Manager for the USFWS Pacific Region's Transportation Program, presented a summary of the feasibility study process and upcoming project work flow. Alex then presented an overview of the USFWS Roadway Design Guidelines discussing how the guidelines would apply to planning and design of the proposed project.

GENDERAL COMMENTS ON THE MEETING MATERIALS

- There was strong support for the roundabout shown in Concept B. The meeting participants felt that the roundabout would help slow traffic, provide safer ingress/egress to the site, and could serve as a gateway to Hanalei town. It was noted that the roundabout concept needs additional review to ensure the feasibility of the proposed location and frontage road alignment. There was a question regarding the size of the proposed roundabout and if a smaller sized facility would be feasible because of the low traffic speeds and steep topography west of the highway. An interim driveway access from the highway should be provided for Concept B until the roundabout is constructed.
- It was recommended that the USFWS and County approach HDOT regarding cost sharing for any highway and roundabout improvements.
- One meeting participant adamantly opposed the construction of any tall structures or walls at the viewpoint locations. The preferred design concepts were options 2 and 4. They also recommended keeping the design of the viewpoints low to the ground and constructed with natural materials. Another participant indicated that they preferred viewpoint options 1, 3, and 5.
- Site plan Concept B, which included the roundabout and frontage road access, had strong support with the suggestion that the parking be reconfigured similar as shown on Concept A in order to improve internal circulation. The interim condition for Concept B includes a temporary driveway access off of the highway. There was concern regarding the conflicting left turn movements for all driveway designs shown.
- There was limited feedback on the number of proposed parking as shown on the plans ranging from 87 cars up to 112 cars. There was discussion about balancing the building square footage and the parking count to ensure that parking is maximized on this site. Providing ample parking for both the viewpoint and transit functions was noted as important.
- There was strong support for the low impact development stormwater approach shown in the concepts. The group recommended that the stormwater features be designed to limit standing water as there is concern that ponds will attract wildlife (i.e., Moorhen) and result in increased vehicle-wildlife conflicts.
- The use of pervious paving was encouraged to minimize the size of the stormwater facilities.
- The use of native plans was recommended. The importation of non-local plants, soils, and construction materials should be avoided to prevent the introduction of invasive plants and other organisms to the site.

- The meeting participants inquired about the cost of each proposal. The USFWS indicated that cost information would be developed for the preferred concept plan and made available shortly.
- Lighting at the viewpoint site should be avoided if possible to minimize visual impacts from the surrounding areas.
- Fencing is appropriate to secure the project boundary. Fencing is not needed on the valley-side of the site.
- The participants suggested that an entrance gate to control access to the site and to secure the parking areas at night.
- It was noted that visual impacts resulting the development of the viewpoint site should be minimized. Protecting the visual character of the NWR lands is a priority.7

QUESTIONNAIRES

Questionnaires were distributed and XX were completed and the following summary were provided:

ADDITIONAL MEETING COMMENTS

Meeting materials were posted to the FWS website and the following comments were provided by e-mail:

MEETING SIGN-IN SHEET

Meeting attendees and contact information has been included in meeting notes.

OPEN HOUSE BOARDS

Open house boards have been attached to meeting notes.

DJS

Schwartz, Alex <alex_schwartz@fws.gov>

Comments on Hanalei Viewpoint

Beryl Blaich <blaich@aloha.net> Wed, Mar 23, 2016 at 5:00 PM
To: Michael_mitchell@fws.gov
Cc: Alex_schwartz@fws.gov, Jennifer Waipa <jennifer_waipa@fws.gov>

Aloha Mike,
Thank you for the opportunity to review this proposal, and thank you to Jen for the reminder. I apologize for missing the meeting.

I prefer Concept B.
I like this options because the visitor hale, bathroom and the loading structure are not located on the rim of the Hanalei Valley.
I also prefer not having a “future visitor contact building", especially one as large as 4000 sq feet.
However, with Concept B I don‘t clearly understand how traffic will enter and leave, and it seems as if it is not possible to enter, coming from Kilauea, or to exit and turn toward Hanalei.
Centralizing the walking path in the parking lot and tying it directly to the visitor hale and to the restroom seems safe and efficient. It also separate the more scenic and natural viewpoints from the educational info.
And Concept B accommodates a lot of cars (97).
Concept B had the largest amount of greenspace buffer between Kuhio Hwy. and the parking lot, except for C-2.

I did like the roundabout feature of Concept A which would act to slow all traffic and also makes it possible to a) centralize the entrance and egress points onto Kuhio Hwy. and also allow people to exit and go both south and northward.
Concept A would be improved IF the restroom was placed on the four parking stalls at the apex of the wedge-shaped parking lots. There would a loss of parking stalls (94 to 90), but the visual integrity of the valley rim would be protected.

Concepts C-1 and C-2 both located structures on the rim which takes away part of the scenic viewing experience and makes looking from the valley up to the Princeville Plateau far less natural.

Regarding the building styles shown in the elevations, I was surprised to find that the Hawaiian hale seemed hokey. I think I liked the look of the second drawing.

Regarding signs, for me less is always more which means I was not drawn to the stone support platforms on which, I guarantee you, people will perch in piles for pictures.

Less is more certainly applies to the viewpoints. The tower structure would be terrible. I recall the first proposal for this facility, and we were all concerned about how the taro farmers were going to feel being observed all day. Three layers of observers from towers is even worst, plus the towers are also visual blights along the rim.

Those are my thoughts. I appreciate your incorporating them into those you have received.

With great aloha,
Beryl

March 25, 2016

Mr. Michael Mitchell (michael_mitchell@fws.gov)
Mr. Alex Schwartz (alex_schwartz@fws.gov)

Re: Comments on Proposed USFWS Hanalei Valley Overlook

Aloha Mr. Mitchell and Mr. Schwartz,

I offer the following comments regarding the proposed USFWS Hanalei Valley overlook.

1. I do not see any need to construct another tourist attractor on the north shore, and I do not think it would be beneficial to north shore residents to create another tourist attractor on the north shore. The north shore's communities, roads, parks and beaches, from Hanalei to Ha'ena, are already overwhelmed by ever-increasing numbers of tourists. Nothing should be done that would increase those numbers. In particular, no federal, state or county funds should be used to create another tourist attractor.

2. I support the creation of a north shore transit/tourist hub, located somewhere between Princeville and Kilauea, where tourists could park their vehicles, and to which tourists could be bussed from hubs (located at Princeville, Wailua and Poipu), from which they could take shuttle buses to Kilauea Point National Wildlife Refuge, Hanalei, and Ha'ena State Park.

   In the past, I supported the exploration of using the parcel that is currently under consideration for the Hanalei Valley overlook as that hub. But as the March 16 presentation and conceptual designs now make clear, the amount of parking available at that site would be woefully inadequate to meet the requirement of at least 300 parking spaces, the bare minimum needed for a true north shore transit/tourist hub. I therefore believe that the focus of efforts - and the use of any government funds - needs to shift to another location (for example, the Princeville Airport site).

3. As to the four conceptual designs that were presented: I find Concept B to be the least offensive. It would have the least visual impact from Kuhio Highway, and it does not include the very unnecessary "interpretive hale." I most strongly dislike Concept A, as it includes the largest "interpretive hale" (1200 square feet), and it would have the greatest visual impact from Kuhio Highway. Concepts C-1 and C-2 are also inferior to Concept B, as both include a 625 square foot "interpretive hale."

I am sorry that I must take the position of being opposed to this project. But it has become clear, from the progress of the Ha'ena State Park master planning process and from the ongoing Kauai County North Shore and South Shore Transit Feasibility Study, that the site of the proposed Hanalei Valley overlook is simply inadequate to meet the transit hub needs of the north shore, and that dedicating any federal, state or county funds/energy/efforts towards that site will detract from the focus, funds, energy and efforts that will be needed to locate and develop the site that will truly meet the needs of the north shore.

Carl F. Imparato

Carl Imparato
P.O. Box 1102
Hanalei, HI 96714

MEETING AGENDA

Hanalei Valley Viewpoint
Project Principals Meeting

DATE: Wednesday, June 23, 2016
TIME: 8:30 AM - 12:00 PM HST
LOCATION: County of Kauai, 4444 Rice Street, Lihue. Moikeha meeting rm. #1
CALL IN # 855-428-0808, conference ID: 253905

1. **Welcome**

(Mayor Bernard Carvalho, County of Kauai)

Innoye passed away in 2012, Mayor in office since 2008, move existing overlook inland, big picture (Holo Holo 2020) vision (Mayor, Hirono, Innoye, County) to address traffic congestion, add in park and ride option. Only have until 2018 while Mayor in office to get this underway. Many of the local people are using the shuttle and there is a great need to accommodate them as well as the tourists, ties into Ke'e Beach as well. Can move forward right now with Princeville airport as one potential location for park and ride for shuttle. Mayor needs to go back to Council to ask for funding and support before can commit too much currently. We need to figure out some of these other decision points in the meantime. There is a new County Manager taking over for Nadine Nakamura, his name is Wally Rezents.

2. **Goals for the Meeting**
   A. Shall the schematic concept for the proposed site development include a Roundabout on the Kūhiʻō Highway?

   B. Discuss financial contributions and funding opportunities for the proposed site development.

   C. Discuss roles and responsibilities for project delivery once the feasibility study and land acquisition tasks are completed.

   D. Identify points of contact at each agency for project authority.

3. **Project Background**

(Alan Yamamoto, Office of Senator Mazie K. Hirono, Mike Mitchell, USFWS, Ed Sniffen, Hawaii Department of Transportation)

- Alan has been involved since 2009, Innoye funded through discretionary appropriations (Public Land Highway Discretionary Fund) because project provides greater access to the public to Federal Lands. Wants to know who has skin in the game and what everyone's role will be going forward. The federal, state, and county governments should be equal partners in this project.
- Heather - Besides the welcomed opportunity to partner with County and others to make a substantial contribution to relieving traffic congestion on the N. Shore, this project offers us the wonderful chance to greatly improve

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safe access, as well as wildlife viewing, interpretation, and environmental education at the Hanalei National Wildlife Refuge. This is especially important to us due to the fact that the Hanalei NWR is otherwise generally closed to the public in order to protect the T&E species that are vulnerable to disturbance and this site offers extensive opportunities for us to better meet our mission and help people to understand the significance and history of this amazing refuge and valley, as well as the entire Main HI Islands.

- Mike – project background from the perceived community perspective, the original project had significant community opposition (a visitor center with retail store was not popular). Downsizing of the proposed structural footprint and the addition of a park-n-ride to help mitigate traffic congestion has increased community support for this project by community leaders. (and taro permittees).
- Ed Sniffen – HDOT – Interested in moving this project forward, this project is red-flagged because money has not been spent and it is beyond the 10 years that is allowed once the project has started. HDOT doesn't consider capacity as primary concern (i.e. congestion in this area is not a primary concern). Interested in how the project has been vetted, and history/details. Any new funding considerations from HDOTs perspective needs to have a significant component of either roadway preservation and maintenance or safety. If it is a safety issue, then they are willing to take care of it, but are not going to fund anything additional. Alan has talked to Federal Highways and HDOT and currently they are not able to touch that money that is left in the coffers but we can only hold on to it for so much longer.

4. **Feasibility Study Overview**
   (Alex Schwartz, USFWS)
   I. Scope of work
      i. Which parcel option, we have identified the larger as desirable
      ii. To present different concepts for potential design alternatives
      iii. Rough order of magnitude cost estimates
   II. Status update
      i. Design workshop – Jan
      ii. Public meeting – Mar
      iii. Identify final concept that works for everyone - TBD
   III. Next steps for feasibility study
      i. EA/NEPA
      ii. 30 % Design
      iii. PS&E, etc.

5. **Discussion Topics**
   (Facilitated by Alan Yamamoto)

   A. <u>Shall the schematic concept for the proposed site development include a Roundabout on the Kūhiʻō Highway?</u>

There has been support in the community and from USFWS and County staff involved in the project that a proposed Roundabout helps meet multiple

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transportation objectives for the north shore of Kaua'i. One of four schematic alternatives shows a roundabout as the means to provide ingress and egress to the proposed site. It has also been suggested that the proposed roundabout would provide traffic calming and safer ingress and egress at the entrance to Princeville. It has also been suggested that a Roundabout would help serve as a gateway to the Hanalei Valley.

- Alex – why preferred alternative for FWS? –
    - Alleviates traffic and safety concerns at the Princeville entrance and hwy, as well as ingress and egress from proposed Viewpoint site (a "left in/left out" design has related safety concerns)
    - Nice gateway idea, set the tone, calm the traffic coming down into Hanalei Valley
    - Does it even work is it even feasible – we have taken gps points and walked the site, then gave this information along with initial ideas for roundabout to civil engineer to sketch an initial proposal for roundabout concept.
    - Princeville still needs to be contacted and see if they are interested in moving forward with the roundabout.
    - The initial analysis shows that it is feasible.
    - Does the existing highway need to be realigned to accommodate the roundabout? If so, would property need to be acquired and from who, Princeville?
        - Alex – yes, due to constraints and existing issues with highway and the site, the highway would have to be realigned to accommodate the roundabout.
        - David - Cost of acquisition for the highway realignment is not considered in this analysis to date.
    - Safety issues – Ed (HDOT) – is there a safety issue currently or will there be one in the future if the Viewpoint site is developed? Are we asking HDOT to fund this project or is there something else you would like for HDOT to contribute (would like to better understand role)?
        - Alan – no, not necessarily asking to fund, but would like to ensure HDOT has a role
        - Ed – HDOT would like to play a role, but also might suggest alternatives, such as a traffic signal.
        - Nadine N. – what is the history of crashes at existing site?
            - Michael M. – on avg. 1 crash (generally t-bone type crash for cars coming out and heading north) per year within half mile.
                - DOT usually looks at a threshold of 3 crashes per year to designate an area as a significant safety concern that requires more immediate attention.
                - May not meet threshold for DOT, but the roundabout would clearly mitigate some of the existing safety concerns including car crashes.
        - Nadine - If we are going to proceed with this project, would it require a traffic study

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- Ed – Any development along the highway or on the highway would require a traffic study. TIR looks out over the next 20 year horizon.

- Nadine - Are there any developments in Princeville that would require County involvement in the near future?
  - May provide opps to place additional conditions on the developer that could include taking care of the roundabout. Kaina Hull – There's something (development) on the horizon.
  - Foodland is proposing to expand and they need better access for delivery trucks, may be an option.
  - Princeville is looking into 3 options for the phase II development (incl Princeville shopping center expansion), only one includes existing roundabout entry at Princeville. We should talk more with County Planning and the developers about the most recent updates in this regard.
    - Michael M. – Developers and County initially assumed that a signal would be put in at the Ka Haku Rd. entrance.
    - Delay for west (left turn) out of the road was significant, but the other ingress/egress were not problematic.
    - If signal were added, all vehicles would experience an average of 10 sec delay.
    - Foodland expansion and several other developments in that area have been approved already by the County.
      - They (Princeville Resort) are considering opening up a new entrance further to the east. Jay Furfaro – 719 new units are already approved. Jeff Stone already has his entrance entitlements.
    - If signal put in, County and Developers were satisfied that ingress/egress to Princeville, along highway and going into shopping center would be adequate and safe.
    - ~380 vehicles flowing through site at peak time.
    - ~920 vehicles blocking access to folks trying to turn out???
  - Ed – In general, it takes HDOT 3 years to move forward with NEPA and actual implementation, whereas if we put a condition on developer, the roundabout could potentially move forward much more quickly. There are seemingly benefits to adding in the roundabout and there is a need based on the existing and proposed capacity, but these needs could be addressed in other ways as well. If roundabout is decided upon, may be

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beneficial to offer options where certain folks turning directly in/out of site do not have to go into the roundabout. $3 million is probably a good rough estimate for roundabout, but could end up being much more.

- George/Alex – If no roundabout, then would go back to original ingress/egress options for Viewpoint site (i.e. extra turn lanes and acceleration lanes). Then potential signals near shopping center and Princeville entrance.
- HDOT – look at a potential option for sharper turn into Viewpoint site?
- Alan – has asked that we hold off on talking to Princeville about roundabout until we have consensus among the folks at this meeting on how best to move forward.
- Ed – Technically both options work, from capacity perspective neither option (signal or roundabout) is good, because they will both add a delay along highway, where there is not really a delay now (delay is currently on local road, not highway). From a safety point of view, HDOT would be able to support either option though.
    - Alex – USFWS would like to move away from roundabout design, because that is not within our realm of expertise. We would prefer that someone else take on this realm of the project, since we need to focus our efforts on design of the site itself
    - Mayor – would prefer that the roundabout option stays in. Would like County and others to support this concept still, because he feels this is the best option to meet the need of the greater community, island, and site.
    - George – if we tried a phased in approach, leaving the roundabout to a later date is problematic since will necessitate less parking in the near future, and would be problematic with increased use/ingress/egress and overall circulation. Would not be able to really accommodate need of shuttle in particular without the roundabout in the near future.
    - HDOT – Have we evaluated putting in a signal at the Ka Haku Rd. entrance that could also accommodate ingress/egress to Viewpoint site?
        - Ed – this option would still require realignment of the highway, and due to the needed requirements to make this work, you minus well just put the roundabout in because the costs will be about the same. Hasn't heard that anyone in this room is able to put forward money to fund a signal or roundabout at the site (signal – might be slightly cheaper ~$1 million, but approx. same

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amount of effort). County doesn't have any jurisdiction or ability to fund, since it doesn't affect County lands or priorities, other than the shuttle.

- Alan - Sounds like we need to go to Princeville as the next step.
- Jay F. – The entry road to Princeville starting at the guard station is within the Princeville Association jurisdiction and this may be very difficult to get them onboard. County Council approval may also be difficult.
- Ed – What is the real need for the roundabout?
    - Alex – there is a need to have safe ingress/egress to the site and to quickly separate the busses from the other traffic. We can likely still accomplish safe ingress/egress to the site without roundabout, but further analysis will be needed (incl. traffic study). We will need help to get the traffic study done, because we do not have resources/expertise within USFWS to do this.
- Alan – Mayor/County/FWS would prefer roundabout, but unfortunately, the resources just do not seem to exist to be able to move this option forward currently, so perhaps we just need to move forward without the roundabout to ensure that this project continues to move forward.
- Alex – if no roundabout, USFWS and contractor can then move forward with final site concept, but would like to give stakeholders additional opportunity to weigh in. Will be distributing the new draft concept to the group for 2 week comment period.
- What is the parking capacity of the site? Is USFWS moving forward with idea that this spot will have a dual use as a park and ride.
    - Alex - Based on more final analysis, we think that we can provide 80 – 100 parking spots. USFWS has already committed to dual use as park and ride. Will still need to ensure that first and foremost the site meets the needs and design elements necessary for a national wildlife refuge, but we think we can do both.
- Alex - Without roundabout, we are now looking at a project that would cost around $4.7 million. The $800K that currently exists will go to acquisition and if any left over will go toward design.
- Fred – HDOT – Would like to understand how the multi-modal path that is shown on the concept fits into this project? Does it have to be included? Is the funding needed for that included in the overall cost?

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- Alex/David - Can be separated out as a separate phase if cost prohibitive, so project can move forward. Cost of multi-modal trail within the Viewpoint property site is included in $4.7 million.
- Mike – the path would allow greater access to the site, but eventually to Hanalei and other off-site locations, as well as a bike/ped only connection to existing site.
- George – would the bike/ped trail connect to crosswalk that crosses highway to Princeville and shopping center?
  - Mike – there is an existing crosswalk that crosses highway at the Foodland shopping center already.
  - Ed – would want to make sure that there are not two unrelated paths. Agreed. Without roundabout, what are the ingress/egress options?
    - Alex – several options that do not include Ka Haku Rd. entrance, but cost already factored in for widening highway and adding turn/acceleration/deceleration lanes.

- Alex – the estimated cost (4.7K) includes all future design elements, as well as construction costs.
  - Viewpoints, interpretive hale, stormwater drainage, design elements to address Mr. Fields concerns, restrooms, interpretive signs, parking lot, etc.
- Barry – Is it possible to put in signal to avoid additional costs of accel/decal. Lanes and additional costs/space that is needed to accommodate that?
  - Alan/Ed – this could be addressed in traffic study, but most likely a signal will not be warranted.

B. <u>Discuss financial contributions and funding opportunities for the proposed site development.</u>

At this time, rough order of magnitude (ROM) cost estimates indicate that the project will cost $4.5 to $7.8 M, depending on the schematic alternative selected to move forward with. Once a final schematic concept is prepared, the ROM cost will be refined and included in the final feasibility report.

- Alan – Costs and who will do what?
  - Ed - $850K is specifically needed to address roadway concerns (acceleration/deceleration

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lanes) and HDOT would be willing to do this as long as we can tie it to safety needs. Once we get the go forward decision, then they can start the process to procure the money.

- Alex – is HDOT willing to conduct traffic study?
    - Ed – no, we do not have people to dedicate to taking the lead on this, but would be able to provide technical assistance and short list of consideration.
- Alex – USFWS is willing to commit certain level of funding. National Transportation Program in USFWS HQ is able to offer $1 million from national funding to project. R1 Transportation Program is able to guarantee $500K toward the project. Some of our money is available now (i.e. CFL design now, and the rest in next year or so. National Wildlife Refuge Association has agreed to fundraise to help meet needs directly related to interpretation and education (750K – 1 million if able to fundraise that much).
- Alan – not including NWRA contribution, we still have a gap of 2.3 million to fill. If we get money from NWRA, that goes down. What is County able to provide?
    - County is able to commit to long-term maintenance and operations costs in perpetuity. This will be on the back-end of the implementation of the project.
    - This is the administrations wish, but will still need to get council approval.
    - Cecilia – some additional grant sources for alternative transportation, but again this is not assured.
    - Alan – wants to ensure that we have guaranteed money to ensure that the project can move forward. There are other agencies/partners that need to be involved (i.e. State Parks).
    - Ed/George – Can go to legislature and ask for money, but if they do agree to fund it out of the general fund, then HDOT will not commit the $850K.
    - Michael M. – even if we dismiss the roundabout option now, we still need to address this in the future.
    - Alan – does this group still want to move forward with this or scrap this? What are the other options for completing the traffic study?

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- Alan – Let's go to potential partners discussion…
    - Hawai'i Tourism Authority (soft costs – coming tomorrow (Fred Actons is on island rep) and George will be talking with them, State Parks – Susan and Kekoa (Alan will approach), big hotels in area that may potentially contribute - Princeville Association (Rory Enright), St. Regis (GM and owners – LA City retirement Association, Princville Resort – Jeff Stone, Plantation – Pierre Lamidiar, Foodland may not currently want to go with Phase III, but eventually – Sullivan Family Group(County will approach), Fed Highways – not probably an option,
    - Additional funds from fed govt. – not likely since will have to compete

- Alex – timeframe – wrap up feasibility study by August/September.
- Alan - Need to have an answer on potential partner contributions within 2 weeks from today to assess initial receptivity and report back to group.

C. <u>Discuss roles and responsibilities for project delivery once the feasibility study and land acquisition tasks are completed.</u>

There are several ways the principal agencies can work together to ensure a smooth project delivery process. How can responsibilities be assigned to achieve success? Specifically, who shall manage design and engineering, state and County permits/studies, construction bid and award, and construction management?

- 30 % design phase – USFWS is willing to contract Berger Abam to get this completed. $140K price tag. Another option is to look at CFL partnership on this and other components.
- PS&E – Alex - USFWS doesn't have ability/expertise to take this on, would like to see who is willing. Fed. Highways are on option out of Denver, but it will be very expensive to do this.
- Lee/Ed - HDOT is value added and they have agreement with Fed Highways that would result in significant cost savings. We can go to Central Fed Lands and tell them that we would like them to consider doing the work at the same time they are completing other bridge work on the island of Kaua'i with HDOT and we would like them to also take the lead on this portion of the

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project under the agreement. CFL manages their own NEPA process and many other components, even 30 % design, they would be the best lead for project management some of the other components. Would be better to consider the option of handing the project over to them sooner rather than later.

D. Identify points of contact at each agency for project authority.

Who will provide leadership and decision authority from each agency as the project continues? What staff members will be assigned to various components of the project? Regarding the proposed MOU/MOA between FWS/County for shared management and contributions to the Viewpoint site, discuss who, what, when).

- Heather – USFWS POC for decisions
- Alex and Mike – POC for USFWS for existing information on the project and synthesizing information coming in.
- Ed – HDOT POC
- Mayor – County POC for decisions
- Jay F. and George C. – County POCs for information and roles county will play.

E. Identify potential public and private partners.

Discussion to identify potential partners that should be brought into the project

6. Next Steps & Action Items

7. Adjourn

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U.S. Fish & Wildlife Service

News Release

Kaua‘i National Wildlife Refuge Complex
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Phone: (808) 828-1413
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Date: August 1, 2017 KPNWR 17-05
Contact: Jennifer Waipa (808) 635-0925, jennifer_waipa@fws.gov

Hanalei National Wildlife Refuge management and partners to host Public Open House meetings on the Hanalei Viewpoint Project

(Hanalei, Kaua‘i) – The U.S. Fish and Wildlife Service (Service), in cooperation with the Hawai‘i Department of Transportation and County of Kaua‘i, is proposing a project designed with safe access to the Hanalei National Wildlife Refuge to allow for enhanced opportunities to interpret the refuge's mission and purposes. Those include conserving cultural resources and endangered species, as well as providing wildlife-dependent recreational opportunities and environmental education for local families and visitors. The proposed site would provide ample parking, interpretive information, and wildlife observation for the Hanalei NWR that is otherwise closed to public access.

The meetings will take place on August 7th at the Princeville Community Center's Aloha Room from 5:00 p.m. to 7:00 p.m. and on August 8th in Hanalei at Hale Halawai in the Aloha Pohai Room from 4:00 p.m. to 7:00 p.m. A short powerpoint presentation will provide background and history on the project and graphics will depict updated illustrations of the current proposed project. Representatives from Service, the Hawai‘i Department of Transportation, and the County of Kaua‘i will be there to address questions and comments from the public. We invite the public to attend the meetings, learn more about the project and provide feedback.

The Hanalei National Wildlife Refuge was established under the Endangered Species Act to recover threatened and endangered species, including the endangered koloa or Hawaiian duck (Anas wyvilliana), ‘alae ke‘oke‘o or Hawaiian coot (Fulica alai), ‘alae ‘ula or Hawaiian moorhen (Gallinula chloropus sandvicensis), ae‘o or Hawaiian stilt (Himantopus mexicanus) and Hawaiian goose or nēnē (Branta sandvicensis). Learn more about the refuge by visiting our website: www.fws.gov/hanalei.

– FWS –

The U.S. Fish and Wildlife Service works with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. For more information, visit www.fws.gov, or connect with us through any of these social media channels:

Hanalei Viewpoint Meeting Notes Aug 7, 8 2017

General comments/feedback:

- Pave lot pref. over gravel
- Preferable to include infrastructure for future structures (water, sewer, etc.), if needed
- Would like flat area be open for use (picnics, etc)
- Some would support closing of existing overlook to vehicles but maintain view; some voiced concerns on closing existing to vehicular traffic
- Ensure ongoing support of and respect for the farmers; continue to ensure they are at the table for ongoing discussions
- Some strong support for not closing existing overlook
- Some concern over new site being an additional tourist attraction
- Interpretive hale is needed
- Native plant garden is needed
- Gravel parking is too noisy
- No security lights, a possible concern
- Would like to see additional trail interpretive opportunities – guided or staff/volunteers stationed
- Crucial that you have bathrooms here; consider composting toilets similar to Limahuli. Lockers to store valuables would be good as well.
- Show site in relation to highway entry road

QUESTIONS/CONCERNS	ANSWERS

Stormwater management?
• Guidelines for stormwater are important
  ○ Buffer habitat from flow (Quantity)
  ○ Water quality, etc. (Quality)
	Meet or exceed state standard. We'll have a detailed SW plan.

Where will the water go?	Standard is to maintain natural flow – going to work with this. Clean it and slow it down before any of it goes down slope.
Why is this project NEPA compliance separate from Comprehensive Conservation Plan (CCP); better to take a more comprehensive look.	Timing with final CCP is still a ways out, due to a temporary hold on finalizing any new CCPs that is currently in place. This project will be completed first, thus compliance needs to be done first. Also, since HDOT (will sign on this EA) has some jurisdiction and significant involvement in this project, they will need to be signers on EA & HEPA will be included.
Possible to put donation box at the new site that could support the farmers or Kaua'i Taro Growers Association?	The FWS is not allowed to accept donations of this nature.
Are there other plans for this area, such as a park and ride that could support the North Shore Shuttle?	FWS explained that the door is open and will remain open, but running a shuttle for off-refuge lands or providing infrastructure or funding for one is not within the FWS jurisdiction. If in the future, partners are willing and able to provide funding and assistance with management of the site, we are leaving the door open to hosting a park and ride at the site and would have to evaluate the new

	proposal as per NEPA and other compliance requirements at that time. County representatives added that the mayor is supportive. Senator Inouye's office asked mayor to shepherd this project. We need a park-n-ride to help Ha'ena State Park plan. We had a lack of funds and Senator Inouye's funding has a shelf life but we hope to find additional funding. The Plan is to have a southshore, eastside, and northshore shuttle.
How are you going to manage this site?	Staff and/or volunteers will maintain site.
The North Shore of Kauai provides the majority of taro for the state and a significant portion of that is produced on the refuge. Can some additional interpretative signage and messaging be put up to discuss the importance and history of farming in the Valley and on the refuge and also to discourage the public from going in the closed areas of the refuge?	We are planning on including interpretive signage that will discuss this.
How will you deal with the illegal use of drones; will there be signage?	Drones – we do have signs and will plan on putting some up at the Viewpoint as well. Use of drones on refuges is not permitted and if they are disturbing wildlife, there is an additional violation.
Have you done traffic counts and a traffic study?	Yes, it will be updated soon and included in EA.
Will the project really cost $3 million and who has contributed to that?	Final construction will cost $3 million. FWS - $1.5 million (Transportation dollars and legacy funding from HDOT). HDOT - $1 million.
Who owns Ohiki Road? How plan to use site to alleviate traffic on Ohiki Road?	FWS doesn't own the road. It is considered a Road in Limbo by the County.
Request for crash data at existing overlook. This site is designated as a historic site. Would existing overlook be open or closed if new site is implemented? If existing site is closed how will vehicles be kept out of site?	HDOT has jurisdiction over most of existing site and no current plans to close site. May in the future need to implement some restrictions on left turn into existing site.
Closure of site proposed at night – what about emergency/flooding. Could area be opened for evacuation staging?	Would be open to this idea. There are some restrictions on property deed that may not allow this.
What would welcome kiosk look like?	Refer to proposed interpretive plan
What percentage of site is proposed pavement/asphalt?	Refer to EA and detailed site plan

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U.S. Fish & Wildlife Service - Pacific Region
Hanalei National Wildlife Refuge
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May 2019

Front and back cover photos: Hanalei National Wildlife Refuge, Hanalei River Valley. USFWS/Jennifer Waipa
Inset photos, top to bottom:
Pair of nene (Hawaiian goose). USFWS/Gary Kramer;
Alaeula (Hawaiian moorhen). USFWS/Gary Kramer;
Pair of koloa maoli (Hawaiian duck). USFWS/Gary Kramer