

**4.15.1.5 Future NEPA document for transformation of the Army in Hawaii** Headquarters, Department of the Army, is currently studying the future modernization and transformation of the Army's force structure. If selected for transformation, this will change the way the 25th ID(L) trains and fights. Changes in how the 25th ID(L) trains and fights may necessitate a change in the way the 25th ID(L) uses all of its training areas including Makua. Changes in the use of training lands and construction of new facilities could result in separate NEPA documentation to analyze environmental impacts. A decision has not yet been made to transform 25th ID(L) units stationed in Hawaii.

**4.15.2 Environmental consequences No Action** The No Action alternative is described in detail in 3.2. Depending on designated land use of the property after disposal, ranging from limited public access to unrestricted public access, the extent of excavation required for UXO cleanup would range from 1-14 feet below the ground surface. The cumulative impacts of UXO cleanup equates to the past 60 years of live-fire training on the land, with the present situation of suspended training but with UXO in the ground, and the No Action alternative of no military training at Makua in the future. The No Action alternative would change the land use. If the land use changes from military to agricultural/open space or residential and/or commercial, then UXO cleanup would have to be conducted. As mentioned throughout this Supplemental Environmental Assessment, the excavation would cause extreme disruption and negatively impact the environment and remediation would be necessary. The cleanup would negatively impact or significantly disrupt future land use, endangered species, species of concern, cultural resources, community and rural values, and traditional cultural properties that native Hawaiian and the Waianae community are striving to preserve. The impact of this cleanup would be cumulative to the impact of military activities that have already occurred at Makua.

If Makua were to come under the jurisdiction of the State of Hawaii, it is likely that the land use would be re-designated as agricultural/open space or preservation land as identified in the long-range plan of the Waianae Sustainable Communities Plan. The Waianae community, native Hawaiian and ethnic populations would experience beneficial cumulative impacts from this change in land use in the future. This would likely allow individuals to access Makua for traditional, religious, and spiritual practices, for recreational purposes, and for the enjoyment of the beauty of the valley and the ocean. Having Makua returned to the people would enhance their community and rural values and qualities that have historically been a part of their culture. As described above, however, and in the following paragraphs, adverse cumulative impacts would likely occur as a result of the UXO excavation and without the oversight of conservation and stabilization programs to monitor, preserve, and enhance the natural and cultural environmental.

If Makua were not acquired by another government agency, the Waianae community would no longer realize cumulative benefits from ongoing programs such as the Wildland Fire Management Plan, the ITAM Program, the BA and BO, the Endangered Species Stabilization Plan, the Section 106 PA, the Cultural Resources Management Plan, and the ICUZ Program. Contributing environmental management plans such as these enforce compliance with federal and state regulations and promote environmental stewardship.

Failure to update environmental management plans to include new guidelines and policies would result in adverse cumulative impacts to resource preservation. Vegetation and wildlife could be significantly adversely impacted without the continued propagation of native species. Without maintenance of this

area, the spread of invasive and alien species would increase over time. The extirpation of endangered species and species of concern could occur. The threat of ungulates entering the site and destroying native vegetation, including endangered species, would increase without maintenance of the fence. Managed invasive species could cause the number and diversity of endangered species to decline. Under the No Action Alternative, the quality of wildlife habitat would likely eventually deteriorate and long-term significant, adverse cumulative impacts could occur to native wildlife, habitats, and ecosystems.

Adverse cumulative impacts to cultural resources may occur as a result of the environmental cleanup associated with the excessing process. Excavation may result in significant disturbance of existing cultural resource sites, and the agencies conducting the cleanup would be required to mitigate this disturbance to the extent possible. Cumulative adverse impacts would be analyzed and evaluated in the NEPA disposal document.

**4.15.3. Environmental consequences of Proposed Action** The Proposed Action represents the full extent of the Army's current plans for Makua Military Reservation. If these plans should change in the future, such changes would be subject to a new NEPA analysis, as well as consultations with the community and appropriate regulatory agencies, including the SHPO and USFWS. Although this SEA is focused on the need for the Army to conduct CCAAC training, the 25th ID(L) represents a small portion of the Department Of Army assets and is subject to compliance with larger Army initiatives. Department of Army training doctrine could result in the alteration of currently proposed training requirements. Such changes are speculative at this time but would be the subject of separate NEPA analysis.

Under the Proposed Action the Army would continue using Makua Military Reservation as a CCAAC, but at a reduced level from past use. In particular the Proposed Action, which incorporates comprehensive conservation measures significantly reduces the types of ammunitions that will be used in Makua as compared to the types and sizes of ammunition used in the past. The Proposed Action does not include the operation of the OB/OD unit. The Proposed Action does not include use of a landfill. The Proposed Action includes use of a septic tank that is drained by a contractor and contains no leach field. The Proposed Action does not include use of tanks, aerial bombardment and battleship shelling, all of which have been done at Makua in the past.

The Proposed Action meets the training and readiness needs of the 25th ID(L). The Proposed Action includes a detailed Wildland Fire Management Plan. The Proposed Action incorporates the results of a formal Section 7 consultation under the Endangered Species Act with USFWS, which resulted in Biological Opinion of no jeopardy to the continued existence of threatened and endangered species. The Proposed Action incorporates results of a formal Section 106 consultation under the NHPA with the SHPO resulting in a Programmatic Agreement to protect cultural resources. The SEA contains information supporting the reasonable conclusion that there is no significant impact from contamination arising from past activities or likely to occur from Proposed Action (See 4.13, Hazardous Substances).

The Waianae Sustainable Communities Plan acknowledges that continued military use of Makua for the foreseeable future is crucial to the Army's mission and the overall economy of the State of Hawaii and the City and County of Honolulu. While some members of the Waianae community, some native Hawaiian, ethnic groups, or other groups or individuals may want the Army to leave Makua, other area residents feel that the Army is an important neighbor to have in Hawaii. Under the Proposed Action, some minimal adverse impacts for a portion of the rural community may remain. The Army, however, recognizes the

needs, concerns, and desires of the community and would continue to work and coordinate with the Waianae Community to develop ways to foster and support their community and rural values and their vision for the Waianae District, “The Vision for the Future of Waianae is a Vision of a Community.” By acknowledging and recognizing the importance of the community’s long range plan the Army will be able to ensure that overall development of the area is planned to mitigate and reduce impacts to the human environment.

There have been past impacts to vegetation from wildfires that started at Makua, or moved onto Makua from outside its boundaries. Another past impact is the introduction of non-native grasses into Makua by cattle ranchers in the period before Makua was used by the military. The non-native grasses produce large fuel loads for wildfires. Wildfires, either as a result of the Army or prior uses, have cumulatively reduced the amount of native vegetation; this has been in most areas replaced by non-native grasses. The Army would minimize the potential for cumulative adverse impacts to Makua as well as the Waianae District from wildfires to vegetation, wildlife and endangered species with the implementation the BA, BO, Interim Endangered Species Stabilization Plan, and the Wildland Fire Management Plan. This would protect both the Makua valley and other portions of the Waianae area. Because of these measures, the cumulative impact of the proposed action on these resources would not be significant.

There has been some damage to Makua’s cultural resources in the past, as detailed in Section 4.11. This damage occurred before the Army was aware of the presence of these resources. The implementation of the Section 106 PA and the Cultural Resources Management Plan would result in beneficial cumulative impacts to cultural resources. Under the Proposed Action Alternative, cultural resources would be monitored and protected from disturbance or deterioration, thereby minimizing potential adverse impacts from training. Education of Army personnel in cultural resource protection and avoidance would result in overall increased cultural resource awareness. Because of the many steps detailed to protect cultural resources, the cumulative impact of the proposed action on these resources would not be significant.

Continued introduction of lead and other residues as a result of ordnance fired during training will be a cumulative effect of years of Army training at Makua. Soil samples collected throughout the training area were consistent with EPA public health standards, with the exception of the former OB/OD site[OB/OD operations ceased in 1992]. The Army proposes to burn excess powder bags as part of routine training in an area unassociated with the OB/OD site. All residues are collected and disposed of properly. Groundwater samples collected at the installation boundary show that hazardous materials do not exceed public health criteria. The Army’s proposed ground water monitoring programs will measure concentrations of lead and other hazardous substances to determine whether contamination is migrating beyond the reservation boundary. If it is found that these materials are exceeding public health standards, the Army will implement remediation as required to protect human health and the environment. Because of these mitigation measures, the cumulative impact of the proposed action’s use of hazardous substances will not be significant.

The amount of traffic in the Waianae area has increased since the Army’s initial use of Makua. The Army is required to comply with Federal laws, rules, and regulations regarding transport of ammunition and has articulated (in Section 4.14) the transportation routes and times to avoid conflict with school and peak traffic hours. Due to these safeguards and procedures, the cumulative impact of the proposed action on traffic patterns will not be significant.

Resumption of training at Makua will result in intermittent high noise levels within the training range, Makua Beach, and adjacent agricultural areas. It is expected that noise levels will not exceed low nuisance levels, because the training area is in a valley and largely surrounded by agricultural and preservation lands. Furthermore, heavily populated areas are at a considerable distance from Makua. Because of these conditions, it is expected that the cumulative impact of noise from training activities would not be significant.

Impacts from the operation of training vehicles and equipment would be temporary and minor. Temporary increases in pollutants from engine emissions and firing activities would be experienced, and increases in particulate matter would result from vehicle operation and maneuvers. Overall air quality on Oahu exceeds both federal and state standards. The cumulative impacts of all military activities in the area are not anticipated to affect the overall air quality of the region, and no long-term or significant impacts are anticipated.

Reduced and modified training at Makua will result in minor soil erosion, due to maneuver activities, maintenance of firebreak roads, and use of munitions. As part of the Proposed Action, ITAM and land management/erosion control measures are incorporated and would continue to be implemented to stabilize and reduce soil erosion. The implementation of the wildland fire management plan and the elimination of tracers are expected to reduce fires, which in turn is expected to reduce possible soil surface disturbance due to loss of vegetative cover. Implementation of the Proposed Action is not expected to contribute to the cumulative adverse effects on soil erosion.

Hawaii has a disproportionately high number of threatened and endangered species in comparison to the other states. Endangered species throughout the State of Hawaii have been impacted because of the cumulative effects of human activity. This effect has been compounded by the introduction of domestic animals and introduction of other alien species. Military training has some effect on threatened and endangered species. The Proposed Action includes measures designed to minimize the impacts and to stabilize the continued existence of threatened and endangered species at Makua (see Section 4.6).

The Army is also aware that USFWS may designate critical habitat for endangered species throughout Oahu, as a foreseeable future action. Some of these species, for which habitat may be designated, are known to exist on Makua. The Army anticipates that modified training, and its ecosystem management programs, including ongoing and additional consultation with USFWS, will mean that effects on critical habitat, if it is designated, will be insignificant.

Implementation of the Proposed Action will not contribute to the cumulative adverse effects on the continued existence of threatened and endangered species.

**4.15.3 Minimization Measures** The Army would continue the public involvement program to work with the community and involve them in enhancement, preservation, and monitoring programs for Makua. Through this public involvement and coordination the Army and the community may begin to develop compromises that will provide a better understanding of each other and benefit all concerned.

## Section 5: Public Involvement

**5.1 GENERAL** More than 20 years ago, the Army in Hawaii began a public involvement program with their island neighbors. This program, organized by the Army's Public Affairs Office (PAO), is continuously growing and evolving, in coordination with State of Hawaii representatives, the City and County of Honolulu, and the needs of the people of Hawaii. Community relations initiatives include a variety of community events, school programs, Boy and Girl Scout activities, civil actions, leadership interaction and resolutions of community concerns. Army volunteers, currently numbering more than 3,500, provide all of these services free to the communities. The following paragraphs detail some of these services, activities and programs.

**5.1.1 Community information forums and meetings** Following are summaries of some of the general programs the Army has developed and implemented:

- *Makua Open Houses:* The Waianae community and citizens of the State of Hawaii have expressed their concern on issues such as groundwater and surface water pollution, OB/OD contamination, wildland fires, damage to endangered species and cultural resources, ammunition transport, and noise. To address these concerns, the Army invited the public to tour Makua on a series of semi-annual open houses. Tour leaders encourage and solicit questions, educate the public on Army training, and discuss environmental and cultural stewardship programs. The tours also include visits to the Hawaiian religious sites and archaeological features, such as the Ukanipo Heiau. Tours were conducted in May and November 1996, August 1997, May 1998,

July 1999, February 2000, and January 2001. Finally, in March of 2001, the Army provided an opportunity for Waianae community leaders to conduct a helicopter tour of Makua and other Army ranges on Oahu.

- *Waianae Community Leaders Special Meetings:* Meetings were held in October 1998 with the community leaders for a Makua Environmental Programs presentation and in May 1999 for a City and Council member Makua tour.
- *Waianae Community Meetings:* Community meetings are conducted to inform the public of Army events and the status of Makua. A meeting was conducted in May 1999 and July 2000 to give a presentation of the Wildland Fire Management Program.
- *Ukanipo Heiau Advisory Council:* Meetings are conducted twice a month with the Army's Cultural Resource Manager to ensure community involvement in the cultural resources program. The Council was formed in January 1998, and includes the native Hawaiian Community on the Waianae Coast, the State of Hawaii, and the Army. Its purposes are to rehabilitate the Ukanipo Heiau Complex and to open the site to native Hawaiian religious practitioners under the American Indian Religious Freedom Act. The Council and the cultural resource program are ongoing.
- *Waianae Military-Civilian Advisory Council (WMCAC):* The WMCAC was established in 1979 to improve communication and build friendships and partnerships between the Leeward Coast communities and the Army. The Council is highly active today, and its 38 members include civilian and service-member Army volunteers who organize and develop programs and events such as anti-drinking and driving campaigns, funding raising events, and youth activities.
- *Community Leaders/Board Members:* Monthly neighborhood board meetings are conducted with Army unit commanders or other Army representatives to inform the communities of ongoing, current, and upcoming events. These meetings provide a forum for soliciting input and concerns from community members. To gain a better understanding and familiarity between the participants, the Army has assigned specific geographic areas of responsibility to each brigade level organization of the 25th ID(L). The Army maintains a permanent representative on the Waianae Neighborhood Board.

**5.1.2 Civic programs** The Army conducts a variety of active civic programs that save money and lives, in addition to benefiting and enhancing the communities of Hawaii.

- *Military Assistance to Safety and Traffic (MAST):* MAST provides a critical service to the civilian community in the form of emergency helicopter evacuation and transport of accident victims, patients, medical personnel, and blood and organs to medical centers and hospitals. This provides vital assistance to remote communities such as the Waianae coast. Since 1974, this program has saved numerous lives, all at no cost to the Waianae coast residents and the people on Oahu.

- *Fire-fighting Assistance:* This is accomplished via an agreement that allows federal fire departments at Army installations to provide fire suppression resources to support the state and City and County of Honolulu with fires off of federal property. A second agreement provides for the use of military helicopters to conduct aerial fire-bucket operations in support of local wildland fire suppression efforts throughout Hawaii.
- *Scouting Programs:* Army volunteers work with Scout troops throughout the year and sponsor interactive programs to educate scouts on survival skills and leadership qualities. The Scout programs are provided for Cub, Boy and Girl scouts.
- *School Programs:* The Army has supported school programs since the mid-1980s. Under the Adopt-A-School program, the Army has adopted 37 schools in the State of Hawaii. Makaha, Leihoku, Kamaile, and Waianae elementary schools and Nanakuli and Waianae High Schools are participants. Golf tournaments and band programs are some of the events sponsored by the Army. Under a cooperative agreement Army volunteers tutor students, provide career education and exposure to vocational opportunities, and participates in numerous school events. Other activities include conducting workshops as well as participation in fairs, beautification and landscaping programs, and development and implementation of new school programs.
- *Explosive Ordnance Detachment:* Army EOD units respond to civilians and civilian organizations as requested when unsafe explosives devices are found, whether military ordnance or another type of explosive.
- *Disaster Assistance:* The Army augments state and local government assistance when requested when natural disasters, such as hurricanes, strike the State of Hawaii.
- *Club Memberships:* Participation as members of local service organizations such as the Rotary and Lions clubs, to include the Waianae Rotary Club.
- *Special Events:* The Army participates in and provides support to the Waianae Veteran's Parade, the Waianae Christmas Parade, the West Side Youth Festival, and the Nani O Waianae Make a Difference Day Cleanup. In addition Army units have provided community cleanup assistance throughout the year.

### 5.1.3 Other programs

**Public Affairs Office** The Army is active in community presentations, and speaking events, and prepares an ecosystem management newsletter for community leaders. The PAO responds to any community questions, opinions, or concerns and is responsible for media relations.

**Army Natural Resources Volunteer Program** The Army solicits volunteer groups to help with natural resources work in Makua and other areas. In the past, students from Waianae High School's Hawaiian Studies Program, the Sierra Club, the Hawaii Trail and Mountain Club, and various individual volunteers have helped with fence building, weeding, planting native plants, and monitoring.

## **5.2 AGENCIES AND PERSONS CONSULTED IN THE PREPARATION OF THIS SEA**

### **5.2.1 Agencies Consulted**

United States Fish and Wildlife Service  
State Historic Preservation Officer and Advisory Council on Historic Preservation  
Federal Fire Department, Naval Station Pearl Harbor  
United States Forest Service, Region 5  
Hawaii State Protection Forester, Division of Forestry and Wildlife  
Honolulu Fire Department

### **5.2.2 Individuals consulted**

Mr Ron Borne, Chief, Range Division Hawaii, G3/DPTM, 25th Infantry Division (Light)  
Mr Alvin Char, Chief, Environmental Division, Directorate of Public Works (DPW), US Army Garrison, Hawaii (USAG-HI)  
Mr Jon Fukuda, Chief, Conservation/Restoration Branch, Environmental Division, DPW, USAG-HI  
Dr Laurie Lucking, Cultural Resources Manager, Environmental Division, DPW, USAG-HI  
Mr Steve Kim, Oahu Natural Resources Manager, Environmental Division, DPW, USAG-HI  
Mr Gary Akasaki, Hazardous Waste Program Manager, Environmental Division, DPW, USAG-HI  
Mr Peter Yuh, NEPA Coordinator, Environmental Division, DPW, USAG-HI

## **5.3 PUBLIC MEETINGS**

**5.3.1 Draft SEA** Representatives of the Waianae Coast community near Makua have expressed a number of concerns with regard to the Army's operations. Public comments are included at Appendix I. The importance of these issues was reiterated at public meetings (September 25, 2000, October 11, 2000, and January 27, 2001) held by the Army to solicit public input on versions of this Supplemental Environmental Assessment. This Supplemental Environmental Assessment addresses the relevant concerns as thoroughly as possible.

**5.3.2 SEA/FNSI** On December 15, 2000, the Army initially published its SEA and Finding of No Significant Impact (FNSI) of the Proposed Action to solicit comments before making its final decision. Subsequent to public review, including a public meeting on January 27, 2001, the Army decided to withdraw its initial SEA/FNSI and conduct further review. The public comment period ended on January 31, 2001; comments received and a transcript of the oral comments from the 27 January meeting have been included at Appendix I. The Army has reviewed all the comments and summarized them into 14 recurring community concerns. The current SEA has been revised to reflect the Army's consideration of public comments as reflected by the 14 concerns listed below. Concerns identified with an asterisk (\*) are not related to the Proposed Action (*i.e.*, returning to modified training) and therefore did not lead to revision of this SEA.

*Environmental concerns*

- Environmental Assessment versus Environmental Impact Statement
- Prevention of fires
- Endangered Species and ecosystems
- Soil and groundwater cumulative contamination

#### *Community-related concerns*

- Military convoy and ammunition transport safety
- Military/community relations\*
- Importance of the Pilila'au Range for Army training
- Community observation of military training\*
- Makua church and cemetery\*
- Unexploded ordnance (UXO) at Makua Valley
- Alternative training sites other than the Pilila'au Range

#### *Cultural Concerns*

- Hawaiian cultural awareness
- Access for native Hawaiian practitioners to Makua Valley
- Cultural resource site protection at Pilila'au Range

**5.3.3 Continuing public involvement** After the close of the public comment period, the community and the Army agreed on March 10, 2001 to continue dialogue regarding Makua Valley. There were three public focus group meetings held at the Waianae District Park on March 18, 24, and 25. During the public focus group meetings, 14 recurring issues identified from the January 27, 2001 community meeting, were discussed. These meetings provided a forum for continuing partnership.

**5.4 OTHER NEPA DOCUMENTS CONCERNING ACTIONS PROPOSED FOR MAKUA** In addition to this SEA for resumption of modified training at Makua, there are several other National Environmental Policy Act (NEPA) documents concerning actions at Makua. These other NEPA documents cover actions that are separate from the current Proposed Action. Recent publication of these draft documents soliciting comments from both government agencies and individuals has resulted in some confusion. The documents are listed here along with a brief description of the proposed action associated with each environmental assessment in an effort to alleviate any confusion with the Proposed Action associated with this Supplemental Environmental Assessment.

*Final Environmental Assessment and Finding of No Significant Impact for Phytoremediation Demonstration Project:* The phytoremediation demonstration project involves using soils from the former open burn/open detonation (OB/OD) site at Makua to demonstrate the capabilities of plants unique to the Asia-Pacific region to bioaccumulate and biodegrade contamination resulting from past military operations. Phytoremediation is a remedial action technology that utilizes plants to help extract and reduce undesirable chemicals that may be detrimental to the land. The final EA and Finding of No Significant Impact have been published.

*Draft Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment for Oahu Installations:* The INRMP is a natural resources master plan required to be prepared by all Department of Defense installations. The Army is preparing two plans: one for all installations on the Island of Oahu (including Makua Military Reservation) and one for the Pohakuloa Training Area on the Island of Hawaii. Both plans describe how the Army will protect endangered species, manage fish and game, control soil erosion, and provide other public outdoor recreation opportunities. The Draft INRMP and EA are currently undergoing public review.

*Integrated Cultural Resources Management Plan (ICRMP) and Environmental Assessment for Oahu Installations:* ICRMPs are currently being developed for management of historic buildings and prehistoric archaeological sites on all Army installations in the State of Hawaii. Two plans are being developed: one for the Island of Oahu, including Makua Military Reservation, and another plan for Army installations on the Island of Hawaii. The Plan is expected to be complete in early 2002. Prior to completion, a draft ICRMP and EA will be made available to the public for review and comment.

**5.5 CONCLUSION** Throughout the process of developing this Supplemental Environmental Assessment, the Army has invited the public to review and comment on all relevant documents, including the SEA and all supporting studies. The Army is committed to being a good neighbor. Where the community's concerns have been made known, the Army has sought to respond to those concerns, and will continue to do so. The Army is committed to continue dialogue with the community through the various public involvement programs and initiatives described in this section.

## Section 6: Conclusion

**6.1 INTRODUCTION** The United States Army and other elements of US military forces have been using the Makua Valley on Oahu's Waianae Coast since before World War II, and the Army has had responsibility for the reservation since 1943. The Army currently controls approximately 4,190 acres in the valley and calls the property Makua Military Reservation. The Company Combined-arms Assault Course (CCAAC) is the single training facility at Makua, and has been used since 1988. The principal Army user is the 25th Infantry Division (Light), which is headquartered at Schofield Barracks, but the Marine Corps, Coast Guard, Air Force and Hawaii Army National Guard all use the site. An environmental assessment for construction of the CCAAC was prepared in 1985, and this Supplemental Environmental Assessment was prepared to incorporate changes in training and additional information about the affected environment at Makua.

The CCAAC is a key element in the program of training for infantry forces. It is the first level at which combined-arms training (involving artillery, helicopter support, and coordination of multiple platoons toward a mutual objective) is conducted. Realistic training under simulated combat conditions has been shown to increase the effectiveness of infantry forces, and to reduce casualty. Failure to conduct this training will result in decreased readiness of the Division to perform its missions.

**6.2 PROPOSED ACTION** The Army would continue using Makua Military Reservation as a CCAAC, but would reduce use from its full capacity. TOW missiles, incendiary munitions or tracers would no longer be used at Makua under the Proposed Action. All current environmental programs would

continue, including natural and cultural resource management, and wildland fire management. This action will allow the Army to execute its required training missions.

### **6.3 ALTERNATIVES CONSIDERED** Six alternatives to the Proposed Action were considered.

- The No Action alternative results in loss of the capability to conduct company-level live-fire training. It does not meet the Purpose and Need.
- Construction of a replacement facility at PTA on the Big Island of Hawaii would take approximately seven years, which would further impact infantry company readiness. After the range is built, transporting soldiers and their equipment there would be costly in terms of training time, money and readiness. When a company is at Pohakuloa, it is not available for deployment with the rest of the 25th ID(L) forces. This alternative does not meet the Purpose and Need.
- The Army could conduct the training on a facility at Yakima Training Center in Washington State. This alternative also incurs higher economic and readiness costs. This alternative does not meet the Purpose and Need.
- In the Status Quo Alternative, the Army would resume training at Makua, using the same weapons it had used until 1998. This alternative creates an unacceptable risk of damage to the environment.
- Consideration was given to use of Makua as a maneuver-only training area, without live-fire of weapons. This alternative is unacceptable because it denies the 25th ID(L) the ability to conduct a required element of training, company maneuver combined-arms live fire training.
- Other Army installations on Oahu were considered, but were found to be unsuitable because of size, terrain, or other restrictions. In particular, Schofield Barracks was unsuitable because a CCAAC constructed there would displace so many other required ranges.

None of these alternatives would allow the Army to conduct the required training without incurring either unreasonable cost, unacceptable adverse impacts to the environment, reduction in readiness, or loss of the ability to conduct required training.

**6.4 AFFECTED ENVIRONMENT** The reservation is known to contain habitat of numerous endangered species, and is of considerable cultural significance to the native Hawaiian community. As a result of fires in September 1998, the Army voluntarily suspended all training at Makua. It initiated an extensive investigation of potential impacts from wildland fires, as well as consultation with USFWS and the State Historic Preservation Officer, to develop ways to reduce environmental impacts of training activities.

The new investigations and consultations added to a substantial ongoing environmental program, elements of which include:

- Currently implemented actions ensuring that cultural resource sites at Makua are protected.

- An implemented Wildland Fire Management Plan that has been coordinated among and approved by all interested agencies, and details specific procedures for both preventing fires and for suppressing fires.
- Implemented interim ongoing stabilization actions protecting threatened and endangered species.
- An ongoing soil erosion control program (ITAM) adapted to Makua.
- A substantial program of community relations, including open houses, volunteer programs, and visits to cultural resource sites.

**6.5 IMPACTS** This Supplemental Environmental Assessment has evaluated all available data concerning the effects of the Proposed Action on land use, soils and geology, vegetation and wildlife, air quality and the noise environment, transportation and socioeconomics, and an extensive array of other topics. In every case, the impacts were found to be insignificant. The US Fish and Wildlife Service has found that the Army’s proposed use of the site as a CCAAC is not likely to jeopardize the continued existence of endangered species at Makua. The State Historic Preservation Officer has agreed that compliance with the stipulations in the Programmatic Agreement covering the Army’s Section 106 responsibilities at Makua will mitigate any potential adverse effects of the Proposed Action on cultural resources. The Waianae community, where Makua is located, will continue only to have restricted access to Makua Military Reservation, but this adverse impact will be offset by the Army’s community involvement program.

The evaluation of the impacts of the proposed action is aided (and made much less speculative than many NEPA analyses) by the fact that the Army conducted a similar (but crucially different) activity very recently. The major impacts of that previous activity were fire, hazardous waste practices, and damage to cultural resources. The action has been scaled down and carefully tailored both to avoid fires and to contain them if they occur. The proposed action does not involve the disposal of hazardous waste. And the proposed action incorporates steps and restrictions that will prevent damage to cultural resources. The Army therefore can therefore have special confidence and a very great deal of certainty about the conclusion that the proposed action will not have a significant impact on the human environment.

It is the policy of Congress, set out in NEPA, that the Federal government should create conditions under which man and nature can exist in “productive harmony.” The proposed action harmonizes the tremendously important mission of the Army with the protection of the natural and cultural resources at Makua.

**6.6 CONCLUSION** The consequences of the Proposed Action were found to have no significant impact. Therefore, this Supplemental Environmental Assessment has led to a Finding of No Significant Impact for the Proposed Action.

THIS PAGE INTENTIONALLY LEFT BLANK

**Appendix A:  
References**

THIS PAGE INTENTIONALLY LEFT BLANK

25th ID(L) and USARHAW, 2000. 25th Infantry Division (Light) and US Army-Hawaii Regulation 350-1, Training.

25th ID(L) and USARHAW, 1999. 25th Infantry Division (Light) and US Army-Hawaii Regulation 210-6, "Installation Ranges and Training Areas."

Anderson, L. Ogden Environmental and Energy Services Co Inc. August 1998. Final report: Cultural Resources Management Plan Report Oahu Training Ranges and Areas, Island of Oahu, Hawaii.

Beavers, A M, R Burgan, F Fujioka, R D Laven, and P Nomi. 1999. Analysis of Fire Management Concerns at Makua Military Reservation. Colorado State University, Fort Collins, CO.

City and County of Honolulu, Planning Department. 1999. Waianae Sustainable Communities Plan.

City and County of Honolulu, Planning Department. 1996. Neighborhood Profiles, Waianae Coast (NA #24).

Department of Defense, 1999a. DoD 6055.9-STD, DOD Ammunition and Explosives Safety Standards,.

Department of Defense Directive, 1999b. DOD Directive 4715.11, Environmental and Explosives Safety Management of Department of Defense Active and Inactive Ranges within the United States.

Department of the Army, 1992. Training Circular 25-8, Training Ranges.

Department of the Army, 1997. DA Pamphlet 350-38, Standards in Weapons and Training.

Department of the Army, 1998. Field Manual 25-100, Training the Force.

Environmental Center, University of Hawaii, 1992. Federal Facility Preliminary Assessment/Site Inspection Review.

FEMA, Flood Insurance Rate Maps (FIRMs), the City and County of Honolulu, Hawaii, revised September 4, 1987.

Halliburton NUS Corporation. 1994. Makua Military Reservation Soil and Groundwater Analysis Report. Part I - Technical Evaluations.

Harris, J and Onishi, P T. 1998. Development Plan Annual Report.

Hawaii Natural Heritage Program. 1994. Biological Inventory and Management Assessment for the Makua Military Reservation, Oahu, Hawaii. Unpublished.

Honolulu Planning Department. 1998. Development Plan Annual Report Fiscal Year 1998. Honolulu, Hawaii. September 1, 1998.

- Kelly, M and Quintal, S M, 1977. Cultural History Report of Makua Military Reservation and Vicinity, Makua Valley, Oahu, Hawaii. Bernice P. Bishop Museum, Honolulu, Hawaii.
- McGuire, K, and H H Hammatt. 1999. native Hawaiian Gathering Rights Assessment for the Proposed Nanakuli 242 Reservoir Site and 20" Transmission Main Along Nanakuli Avenue, Nanakuli, Waianae District, Island of Oahu (TMK: 8-9-8:3).
- McMaster, Bonds, Carter, *et.al*, 1976. Installation Assessment of US Army Support Command, Hawaii, Installations Volume II.
- Prashad, U and Nunes, K, 2001. Planning Level Oral History Survey, Makua and Kahanahaiki Valleys for Traditional Cultural Properties at the US Army Makua Military Reservation Waianae, Oahu Island, Hawaii. Draft.
- R M Towill Corporation. 1997. Final—Outdoor Recreation Plan for US Army Training Areas on Oahu.
- Science Applications International Corporation (SAIC), 1991. RCRA Facility Assessment for Makua Military Reservation, Oahu, Hawaii.
- State of Hawaii, Department of Health and Clean Air Branch. 1999. Annual Summary Hawaii Air Quality Data-1998.
- US Army Environmental Hygiene Agency, 1993. Site Assessment Survey No. 38-26-K28U-94: Waste Sites at Army Properties, Hawaii, 1-19 November 1993.
- US Army, Hawaii and 25th Infantry Division (Light), 2000. Wildland Fire Management Plan for Pohakuloa and Oahu Training Areas.
- US Army, 1983. AR 385-63, *Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat*.
- US Army-Hawaii and 25th Infantry Division (Light). 1999a. Makua Endangered Species Stabilization Plan.
- US Army-Hawaii. 1999b. Draft Environmental Noise Management Plan.
- US Army, 25th Infantry Division Light and US Army-Hawaii, 1997. Land Use Requirements Study.
- US Army 25th Infantry Division (Light) and US Army-Hawaii. 2000. Programmatic Agreement among the 25th Infantry Division (Light) and the United States Army-Hawaii, the Hawaii State Historic Preservation Office, and the Advisory Council on Historic Preservation for Section 106 Responsibilities for Routine Military Training at Makua Military Reservation, Oahu Island, Hawaii.

- US Army, 25th Infantry Division (Light), and Schofield Barracks. 1999. Memorandum. "Training and Licensing Requirements for Personnel that Handle or Transport Hazardous Materials" September 24.
- US Army Garrison-Hawaii. February 1997a. Draft Environmental Assessment for the Ecosystem Management Plan Report – Oahu and Training Areas.
- US Army Garrison-Hawaii. September 1997b. Final Outdoor Recreation Plan Report – US Army Training Areas in Hawaii.
- US Army Garrison-Hawaii. October 1997c. Final Endangered Species Management Plan Report – Oahu and Training Areas.
- US Army Garrison-Hawaii, Directorate of Public Works, Environmental Division. 1998. Biological Assessment (BA) for Programmatic Section 7 Consultation on Routine Military Training at Makua Military Reservation.
- US Army Garrison-Hawaii, Directorate of Public Works, Real Estate, 1997. Information Paper. APVG-GWY-O. Land Ownership at Makua Military Reservation.
- US Army Environmental Hygiene Agency. 1993. Executive Summary Site Assessment Survey No. 38-26-K28U-94. Waste Sites at Army Properties Hawaii (1-19 November 1993).
- US Army Environmental Hygiene Agency, 1989. Environmental Noise Study, No. 52-34-0400-90. Noise Zone III Monitoring Schofield Barracks and Makua Military Reservation, Hawaii.
- US Army Environmental Hygiene Agency. 1988. Environmental Noise Assessment No. 52-34-0499-88. Schofield Barracks, Pohakuloa Training Area and Makua Military Reservation, Hawaii.
- US Army Environmental Hygiene Agency. 1977. Environmental Noise Study No. 34-0507-78. Makua Military Reservation, Hawaii.
- US Department of Agriculture, SCS. 1972. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.
- US Environmental Protection Agency, 1999a. Sediment Sampling Field Report, RCRA Corrective Action Office, San Francisco, CA.
- US Environmental Protection Agency, 1999b, Consideration of Cumulative Impacts in EPA Review of NEPA Documents Office of Federal Activities.
- US Environmental Protection Agency and Hawaii Department of Health, 1998. Proposed Delay of Closure Process for the Former Open Burning/Open Detonation Unit at Makua Military Reservation, September 1998.

US Fish and Wildlife Service. 1999. Biological Opinion of the US Fish and Wildlife Service for Routine Military Training at Makua Military Reservation.

VanderWerf, E, Y Ebisu and Associates, and Wil Chee-Planning, Inc. 2000. Final Report, A Study to Determine the Effects of Noise from Military Training on the Endangered Oahu Elepaio, Schofield Military Reservation, Island of Oahu. Prepared for United States Army District Engineer District, Honolulu.

Walter Lum Associates Inc, 1979. Land Management/Erosion Control Study USASCH Installations, Hawaii Makua Military Reservation. Prepared for the US Army Support Command, Hawaii.

Williams and Patolo *et al* Ogden Environmental and Energy Services, 2000. Final Report: Intensive Archaeological Survey and Monitoring for Proposed Modifications to the Company Combined Assault Course (CCAAC) and Construction of a Fire Access Trail at the US Army Makua Military Reservation, Makua Valley, Island of Oahu, Hawaii.

**World Wide Web sites:**

US Census Bureau: [www.census.gov](http://www.census.gov)

FEMA: [www.fema.gov/library/tsunami](http://www.fema.gov/library/tsunami)

Pacific Disaster Center: [www.pdc.org](http://www.pdc.org)

**APPENDIX B:**  
**Preparers**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **The Onyx Group**

John Gallup, Vice President  
Professional experience: 18 years  
Education: BA, Humanities, Purdue University  
Project responsibility: Project Manager

Jon Wreschinsky, ASLA  
Senior Military Planner  
Professional experience: 18 years  
Education: MLA, Landscape Architect, California State Polytechnic University, Pomona;  
BS, Geography, University of California, Riverside  
Project responsibility: Cartography, GIS database development and management

## **Greenhorne and O'Mara Inc**

Debra Walker REM, Senior Project Manager  
Professional experience: 24 years  
Education: BS, Biology, University of Tampa  
Project responsibility: Project Director

Robin Munnikhuisen, Senior Environmental Scientist  
Professional experience: 20 years  
Education: BS Natural Resource Planning, Appalachian State University; MRR School of Forestry,  
North Carolina State University  
Project responsibility: Socioeconomics/Technical Review

Debra Daly, Senior Technical Editor  
Professional experience: 24 years  
Education: BA Journalism  
Project responsibility: QA/QC Review

Robert Naumann, Environmental Scientist  
Professional experience: 2 years  
Education: BS Natural Resources, University of Michigan  
Project responsibility: Junior Ecologist

Camilla Keis Cornwell, Environmental Scientist  
Professional experience: 6 years  
Education: MS Agronomy, University of Maryland; BS Agronomy, University of Maryland  
Project Responsibility: Natural Resources

Steven Pomeroy,  
Professional experience: 30 years

Education: MS Wildlife Management, University of Georgia  
Project responsibility: Natural Resources

Kathleen Furgerson, Archaeologist, Field Director  
Professional experience: 15 years  
Education: BA Anthropology, University of Connecticut  
Project responsibility: Cultural Resources

Adrienne Sheldon, Project Engineer  
Professional experience: 2 years  
Education: BS, Environmental Engineering  
Project responsibility: GIS/CADD

**Appendix C:**  
**Glossary Of Acronyms**

THIS PAGE INTENTIONALLY LEFT BLANK

<b>Term</b>	<b>spelled out</b>
ACHP	Advisory Council on Historic Preservation
ADNL	A-weighted day-night level
AM	ante-meridian (before noon)
AO	Agent Orange
ARTEP	Army Training and Evaluation Program
BA	biological assessment
BHPO	Base Historic Preservation Officer
BO	biological opinion
BSA	biologically significant area
CALFEX	combined-arms, live-fire exercise
CCAAC	Company Combined-arms Assault Course
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH	cargo helicopter
CONUS	continental United States
DA	Department of the Army
dBA	decibels, A-weighted
dBC	decibels, C-weighted
dBp	decibels, peak sound level
DU	depleted uranium
DPTM	Director(ate) of Plans, Training and Mobilization
DNT	dinitrophenol
DOH	(Hawaii) Department of Health
EA	environmental assessment
EOD	explosive ordnance disposal
EPA	(US) Environmental Protection Agency
ESA	Endangered Species Act
FDRS	fire danger rating system
FEMA	Federal Emergency Management Agency
FFD	Federal Fire Department
FIRMS	FEMA Flood Insurance Rate Maps
FM	field manual
FDRS	Fire Danger Rating System
FNSI	finding of no significant impact
GIS	geographic information system
HAZMAT	hazardous material
HAZCOMM	Hazard communication
HE	high explosive
HFDC	Housing Finance Development Corporation

<b>Term</b>	<b>spelled out</b>
HINHP	Hawaiian Natural Heritage Program
HHLP	Hawaiian Home Lands Projects
HMMWV	high-mobility, multipurpose wheeled vehicle
IBA	Infantry Battle Area
ICRMP	Integrated Cultural Resources Management Plan
ICUZ	Installation Compatible Use Zone
ID(L)	Infantry Division (Light)
IC/FMO	incident commander/fire management officer
ID(L)	infantry division (light)
IP	Implementation Plan
ISA	interservice support agreement
ITAM	Integrated Training Area Management
lb	pound(s)
JRTC	Joint Readiness Training Center (at Fort Polk LA)
LURS	Land Use Requirements Study
MAST	Military Assistance to Safety and Traffic
MD	Maryland
MEDEVAC	medical evacuation
METL	mission-essential task list
mgd	million gallons per day
mm	millimeter
MMR	Makua Military Reservation
MPRC-L	multipurpose range complex-light
MRE	meal, ready-to-eat
NAAQS	National Ambient Air Quality Standards
NAVSTA PH	Naval Station Pearl Harbor
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Services
NRHP	National Register of Historic Places
NTC	National Training Center (at Fort Irwin CA)
OB/OD	open burn/open detonation
OH	observation helicopter
PA	programmatic agreement
PAO	public affairs office or officer
PFC	private first class
PTA	Pohakuloa Training Area
PM	post-meridian (afternoon)
RCRA	Resource Conservation and Recovery Act

<b>Term</b>	<b>spelled out</b>
RFA	RCRA Facility Assessment
SAW	squad automatic weapon
SEA	supplemental environmental assessment
SHPO	state historic preservation officer or officer
SMAW	shoulder-launched multipurpose assault weapon
SOP	standard operating procedure
SR	state route
TC	training circular
TOW	tube-launched, optically-tracked, wire-guided (missile)
UH	utility helicopter
US	United States
USAF	US Air Force
USAEHA	US Army Environmental Hygiene Agency
USARHAW	United States Army-Hawaii
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USLE	universal soil-loss equation
USR	unit status report
UXO	unexploded ordnance
WMCAC	Waianae Military-Civilian Advisory Council
WFMP	Wildland Fire Management Plan