



ALA WAI CANAL PROJECT

**NOTICE OF INTENT TO PREPARE AN
ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT STATEMENT
PREPARATION NOTICE**

Honolulu, Island of O'ahu, Hawai'i

Proposing Agency:

**U.S. Army Corps of Engineers, Honolulu Engineer District
and the
Hawai'i State Department of Land and Natural Resources**

June 2004

DEPARTMENT OF DEFENSE
CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY

Intent to prepare an Environmental Impact Statement (EIS) for the proposed *Ala Wai Canal Project*.

AGENCIES: U.S. Army Corps of Engineers, Department of Defense

State of Hawai‘i Department of Land & Natural Resources

ACTION: Federal Notice of Intent to prepare an EIS

State EIS Preparation Notice

SUMMARY: The U.S. Army Corps of Engineers (Corps) and the State of Hawai‘i Department of Land and Natural Resources (DLNR) propose to implement the Ala Wai Canal Project (AWCP). The proposed project includes a combination of flood hazard reduction and ecosystem restoration components throughout the Makiki, Mānoa, and Pālolo sub-watersheds on the island of O‘ahu.

Pursuant to the National Environmental Policy Act and the State of Hawai‘i Environmental Impact Disclosure Law, the Corps and DLNR are conducting the AWCP Feasibility Study, which includes the preparation of an EIS. Development of the Feasibility Study Report and EIS will be coordinated to maintain an effective and comprehensive plan formulation process and minimize overlap and redundancy. Additional agencies included in the study team and that may be interested in future partnerships include the Honolulu Board of Water Supply and the City and County of Honolulu Department of Environmental Services.

FOR FURTHER INFORMATION CONTACT:

Mr. Derek Chow, Project Manager
U.S. Army Corps of Engineers, Honolulu District, Civil Works Branch
Building 230
Ft. Shafter, HI 96858-5440
Telephone: (808) 438-7019
Email address: Derek.J.Chow@poh01.usace.army.mil

or

Mr. Andrew Monden, Planning Branch Head
State of Hawai'i Department of Land and Natural Resources, Engineering
Division
P.O. Box 373
Honolulu, Hawai'i 96809
Telephone: (808) 587-0227
Email Address: Andrew.M.Monden@hawaii.gov

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I. Proposed Action

Pursuant to the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), U.S. Army Corps of Engineers Procedures for Implementing NEPA (ER 200-2-2), Hawai‘i State Environmental Disclosure Law (HRS Chapter 343), and Environmental Impact Statement Rules (Hawai‘i Administrative Rules Chapter 11-200), the U.S. Army Corps of Engineers Honolulu District (Corps) and the Hawai‘i State Department of Land and Natural Resources (DLNR) intend to prepare an Environmental Impact Statement for their proposed Ala Wai Canal Project (AWCP) in conjunction with their project Feasibility Report. This effort is a multi-purpose project being proposed under Section 209 of the Flood Control Act of 1962 (PL 87-874) and incorporates both flood hazard reduction and ecosystem restoration components into a single, comprehensive strategy.

Surface water bodies of the Ala Wai Watershed are characterized by significant environmental degradation, including heavy sedimentation, poor water quality, lack of habitat for native species, and prevalence of alien species. Additionally, there exists a high potential for flood damage to the densely populated and economically important areas of Waikīkī, McCully, and Mō‘ili‘ili. Proposed actions are intended to protect Waikīkī and the surrounding areas from the 100-year storm event and to restore degraded watersheds to a more natural condition.

The EIS will discuss environmental, social, and cultural issues related to the construction, operation, and maintenance of various flood hazard reduction and ecosystem restoration alternatives proposed for this area.

II. Project Location and Setting

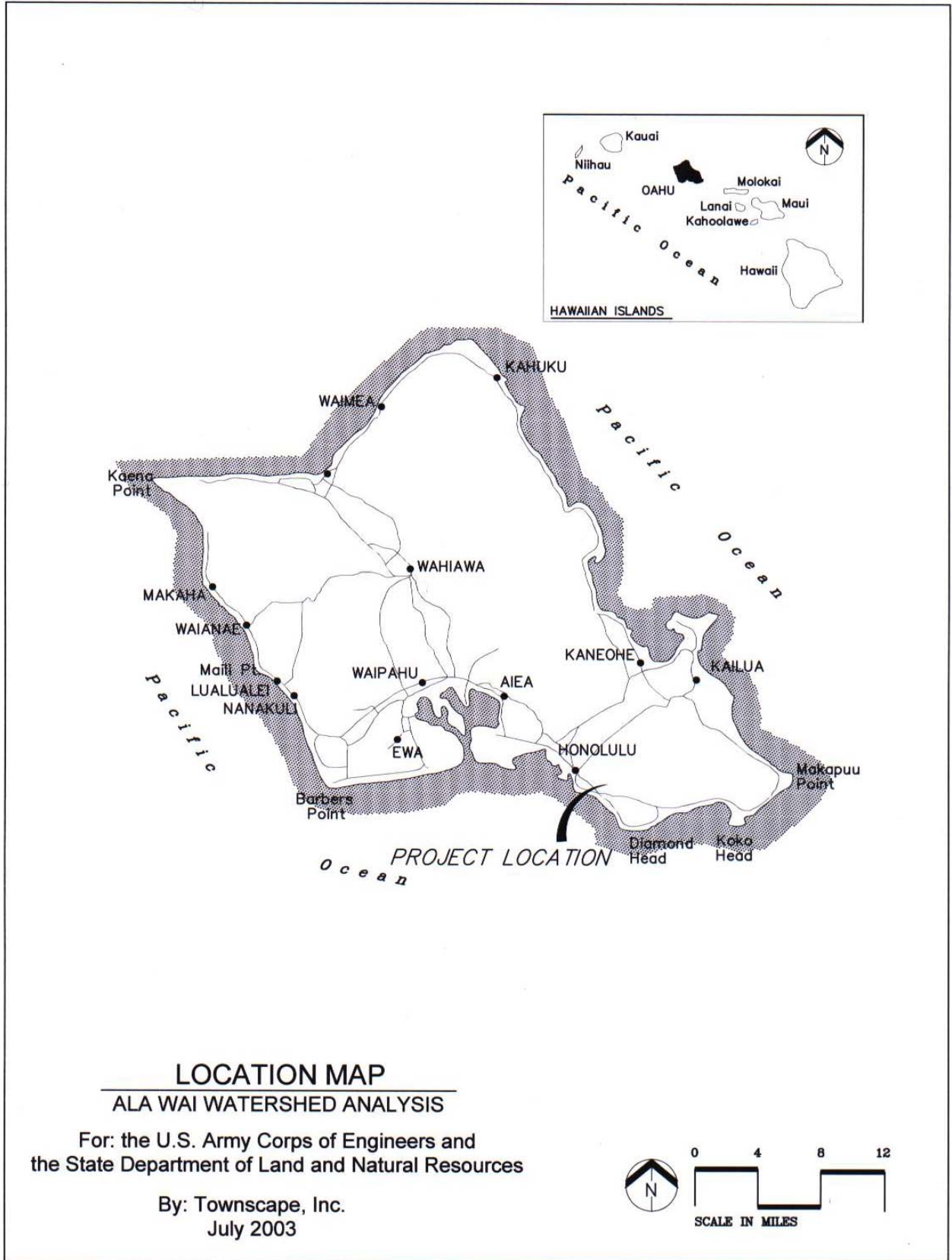
The Ala Wai Watershed is located in the southern portion of the island of O‘ahu, and includes the sub-watersheds of Makiki, Mānoa, and Pālolo, as well as Waikīkī. The project area includes Tax Map Key numbers: Zone 2, Sections 3-9, and Zone 3, Sections 1-4. The entire 11,069-acre project area drains into the Ala Wai Canal (Canal), which was built in the 1920’s to drain what was then the wetland delta area of Waikīkī, for public health and development purposes. Waikīkī is now physically separated from the remaining upstream (mauka) portions of the watershed by the Ala Wai Canal.

A. Climate

Typical winds are northeasterly trades that rise over the mountain ridges, therefore causing moisture to fall as rain. Rainfall quantities vary, with the upper portions of the Ko‘olau Mountains receiving an average of more than 158 inches/year and the lower portions near Waikīkī receiving an average of less than 25 inches/year. Most rain falls during the winter months, although substantial rain falls throughout the year.

B. Physical Features

The Ala Wai watershed lies on the southern slope of the extinct Ko‘olau volcano, which is a highly eroded shield volcano with deep valleys and steep ridges in the interior sections. The altitude within the watershed ranges between sea level and 800 meters (2,438 feet).



Two soil groups may be found in the Ala Wai watershed. The Lualualei-fill land-Ewa association is a well-drained soil that may be found in the lower elevations. These soils have fine textured or moderately fine-textured subsoil or underlying material. The upper watershed is comprised of rock land-stony steep land association. These soils are generally found on steep to precipitous lands and are well-drained to excessively drained.

C. Surface and Ground Water

High rainfall contributes to the abundant water resources that may be found throughout the area. In addition to surface water features such as streams, underground water features have also had notable impact on Hawaiian folklore and relatively recent development. An interesting feature in the Ala Wai watershed is the Mō‘ili‘ili Karst, a one-kilometer square underground system of drainage caves that is located under the King Street-University Avenue area. This system was believed to have fed several ponds in the area including the Kānewai and Kumulae (Hausten) Springs.

The sustainable yield for the island of O‘ahu is 446 millions of gallons per day (mgd), of which, the Honolulu Aquifer, extending from Moanalua to Koko Head, provides a sustainable yield of 53 mgd. The Ala Wai watershed area contributes to both the Nu‘uanu Aquifer, with a sustainable yield of 15 mgd, and the Pālolo Aquifer, with a sustainable yield of 5 mgd.

Hawai‘i experiences high rainfall, but most streams do not flow continuously throughout the year due to the high permeability of the rocks and soils. However, the steep slopes typical of watersheds in Hawai‘i create conditions of “high peak flows with a sharp rise and recession.” This makes streams prone to flash flooding during storm events.

The Ala Wai Stream System, including Makiki, Mānoa, and Pālolo streams, is considered perennial. Over the decades, man’s alteration of the surface water systems of the Ala Wai watershed to safeguard development from flooding has changed the natural drainage patterns of the area. All three major stream systems have been altered, as well as the waterway they drain into, the Ala Wai Canal. Typical stream channel modifications include lined channels, elevated culverts, revetments, blocked or filled-in channels, and extended culverts.

The Ala Wai Canal is an approximately 2-mile long manmade waterway that was created to enable land reclamation for development purposes. Waikīkī was previously a wetland and estuary, and was converted into taro *lo‘i* (irrigated terraces), fish ponds, and later duck ponds. The natural drainage patterns in the Ala Wai watershed area have been severely altered by storm drains that empty into existing streams, the Ala Wai Canal, and eventually the Ala Wai Harbor, which was constructed by the U.S. Armed Forces in the early 1900’s.

In 1998, the Ala Wai Canal was listed as one of Hawaii's Water Quality Limited Segments (WQLS) for nutrients, metals, suspended solids, pathogens and turbidity. The Draft 2002 List of Impaired Water Bodies includes Makiki Stream for Phosphorous (P) and Nitrogen (N); Mānoa Stream for nutrients, turbidity, dieldrin, and total chlordane; Pālolo Stream for trash; and the Ala Wai Canal and Harbor for nutrients, pathogens, metals, turbidity, suspended solids, organochlorine pesticides, lead, enterococci, N, P, chlorophyll-a, and fecal coliform.

D. Near-Shore Waters

Water from the entire watershed eventually empties into the near-shore marine waters. Therefore, problems that occur in the upstream regions ultimately affect the waters of Māmala Bay and Waikīkī, making them an important component of the watershed. Māmala Bay encompasses the area offshore of southern O'ahu from Kalaeloa (Barbers Point) to Diamond Head. Water quality in Māmala Bay has been impacted due to point and non-point source discharges.

E. Terrestrial Biota

Little is known about the biotic resources of the watershed. Research is fragmented and often discusses a particular species or location, rather than whole ecosystems. The lower areas of the watershed are highly urbanized and are dominated by introduced weeds, shrubs and trees. Typical fauna in the urbanized area include introduced species such as domesticated cats and dogs, rats, and birds.

The upper areas of the watershed, above the urban developed lands, are a part of the Honolulu Watershed Forest Reserve. Vegetation types include native lowland dry forest and shrubland, lowland mesic forest and shrubland and lowland wet forest and shrubland. The Hawai'i Stream Assessment (1990) identified the Ala Wai System as having only 10% native forest.

Some water birds, seabirds, and migratory shorebirds have been observed or been known to occur near the Ala Wai Canal or MPDC. The common moorhen, *Gallinula chloropus sandvicensis*, is an endangered species that has been observed near the MPDC. The O'ahu 'elepaio is another endangered species associated with the Ala Wai Watershed. Portions of the Honolulu Watershed Forest Reserve are designated as 'elepaio critical habitat.

The forest reserve is plagued by alien species, many of which are invasive, including *Miconia calvescens*, *Pennisetum setaceum* (Fountain grass), *Prosopis juliflora* (Thorny kiawe), and *Rubus discolor* (Himalayan blackberry). Alien plants are suspected of out competing native plants for resources and providing a canopy that is inferior to native forest cover in terms of protecting the ground against soil erosion. Introduced animals, such as pigs and rats, also cause harm to the native ecosystem, especially to plants and birds.

F. Aquatic Biota

The Hawai'i Stream Assessment reported that a total of nine native species and thirteen introduced species had been previously observed in the Ala Wai System.

The aquatic habitat within this watershed is highly impacted by in-stream modifications, adjacent development, poor water quality, and the introduction and proliferation of alien species. Despite this, some native species still manage to survive, although anecdotal evidence suggests that their numbers are declining as alien species increasingly dominate the streams.

The Ala Wai Canal itself is considered an estuary and the Ala Wai Boat Harbor is considered an embayment. Both are important as habitat for larval and juvenile stages of some native species such as *o'opu* (gobies) and *'ama'ama* (mullet). Studies have found a less diverse ecosystem in the Canal that is attributed to a degradation in water quality and habitat. Alien species such as tilapia (*Tilapia Mozambique*) have become a prominent member of the Canal fauna, due to their ability to survive in slow moving, low oxygen waters.

G. Historic Conditions

One of the objectives of the Ala Wai Project is to restore the natural ecosystem. While true pristine conditions can never be known or achieved, a review of some historical narratives, maps, and other resources may provide some understanding of the past, less altered ecosystem, and thus provide benchmarks for restoration.

The Ala Wai watershed includes three ahupua'a, Makiki, Mānoa, and Pālolo, located in the central region of the Kona District of O'ahu. The entire Kona District includes fifteen ahupua'a, and extends from Moanalua to Maunalua, currently known as Hawai'i Kai.

The densest populations on O‘ahu were in those areas adjoining Waikīkī, where ali‘i, Hawaiian chiefs, typically held residences. Those areas surrounding Waikīkī were abundant with rain, perennial streams, springs, pools, lush interior valleys, broad slopes and well-watered lowlands, fish pond areas, harbors, beaches and lagoons. Kona, O‘ahu was considered the area richest in natural resources.

H. Socio-Economic Resources

The Ala Wai watershed is an area that provides a variety of employment, residential, and recreational opportunities. Especially significant are the tourism-related activities of Waikīkī and the water-related activities associated with the Ala Wai Canal, Harbor, and beaches.

All of the neighborhoods in this area are densely populated. High-rise apartments and hotels dominate Waikīkī, as well as parts of Ala Moana/Kaka‘ako, McCully/Mō‘ili‘ili, and Makiki/Lower Punchbowl/Tantalus. The remaining neighborhoods tend to consist of single family homes. According to the U.S. Census, approximately 161,648 people resided in this watershed in 2000.

Major economic activities that occur within the Ala Wai watershed include those related to tourism, golf, retail sales, and conventions. Waikīkī is a tourism center and it is estimated that 50% of all visitor expenditures in the state occur there.

The Ala Wai Golf Course is run by the City and County of Honolulu and generated over \$2 million in revenue in fiscal year 1997. Ala Moana Shopping

Center annually grosses approximately \$1,000 to \$1,200 per square feet, making it one of the world's most productive malls. According to its Environmental Impact Statement, the Hawai'i Convention Center is expected to draw an additional 8,000 to 8,900 visitors per year to O'ahu and 13,200 to 16,300 to the state.

I. Recreational Resources

The Ala Wai Watershed is heavily used for recreational purposes, not only for activities in the Canal itself, but also for other activities in its mauka regions such as hiking and hunting. Its location in urban Honolulu and near the tourist center Waikīkī, make the recreational demand on the Ala Wai Watershed one of the highest in the state.

The Ala Wai Canal is heavily used for such activities as fishing, crabbing, jogging, walking, and kayak and canoe paddling. Water activities are affected by bacteria in the water that have been suggested to cause skin and intestinal infections. Consumption of organisms caught in the Canal is discouraged by the DOH due to high levels of pesticides and heavy metals that are present in the water and accumulate in the tissues of organisms living in the Canal.

The Ala Wai Harbor provides 663 berthing spaces, 85 moorings, one ramp, and 22 dry dock storage spaces. The harbor provides boating opportunities for the Hawai'i Yacht Club, Waikīkī Yacht Club, the Royal Hawaiian Ocean Racing Club, and other recreational boat owners.

J. Land Use

The Ala Wai Watershed is home to a variety of land uses, both in urban and undeveloped areas. Land use is dictated primarily by three State Land Use designations, and further by County zoning designations. The majority of the land is in the Urban District, which encompasses approximately 55% of the watershed area. The Conservation District encompasses 44% of the watershed and the Agriculture District encompasses less than 1%.

The highly developed Urban District encompasses approximately 10,714 acres of the watershed and includes those areas that are currently in urban use as well as a reserve area for prospective growth. Land uses include schools, commercial establishments, hospitals, and residential developments that extend to the boundary between the Urban and Conservation Districts. Waikīkī is a unique area within the Urban District in that it is considered a prime tourist destination, and thus a major economic engine, for the State.

Agricultural lands are set aside for cultivation, with the greatest protection given to those lands with a high capacity of intensive cultivation. There is only a small, 105-acre area in Pālolo Valley that is designated as Agriculture.

The Conservation District was established to protect forest and water reserve zones. In the Ala Wai watershed, these areas generally include those areas mauka of the Urban District, totaling 4,718 acres, or 7.5 square miles of the watershed.

The upper watershed is designated as the Honolulu Watershed Forest Reserve, and is maintained by the State.

K. Land Ownership

Land ownership is divided amongst various entities and individuals. There are six entities that own parcels that are larger than 50 acres in size: the State of Hawai'i (3,321 acres), the City and County of Honolulu (640 acres), Kamehameha Schools (542 acres), the Honolulu Board of Water Supply (71 acres), Punahou Schools (69 acres), and the Mānoa Hillside Estates (53 acres).

L. Flood Zones

The Federal Emergency Management Agency produces Federal Insurance Rate Maps (FIRM) that delineate those areas that are within flood inundation zones. Those areas that are within the 100-year flood hazard zones are generally associated with the urbanized portion of Mānoa Stream and the low lying areas of Mō'ili'ili, McCully, Waikīkī, and Ala Moana. The Ala Wai Canal's ability to accommodate flood flows is of great concern due to its location in a highly urbanized area and adjacent to Waikīkī. At its current capacity, the Ala Wai Canal has been found to have only marginal ability to handle the 10-year or more frequent flood event and definitely could not handle the 100-year flood event.

III. Project Background

The Ala Wai Canal watershed is highly urbanized and provides the setting for a wide variety of uses, including residential, commercial, resort, recreation, conservation, and education/research. While the watershed has provided habitat for numerous native freshwater, terrestrial, and marine species, over the decades, increased urbanization has led to a deterioration of water quality in Ala Wai streams and the Canal, as well as a decrease in habitat for native aquatic organisms. Additionally, there exists a potential for massive flood damage to the densely populated and economically critical area of Waikīkī and its adjacent neighborhoods of McCully and Mō‘ili‘ili. Approximately 1,746 structures exist within the designated 100-year flood plain.

The total inundation damage for structure and contents alone under without-project conditions is expected to cost \$110,815,000 for the 25-year flood, and \$174,869,000 for the 100-year flood event. These figures do not include impacts to automobiles, yard and outside properties, emergency response, National Flood Insurance Program, travel delay reduction, and business activities. Fifty percent of all visitor expenditures in the State are believed to occur in Waikīkī, which hosts 60,000 to 70,000 visitors a day and provides jobs to 37,500 employees. Generalized calculations suggest that roughly \$5 billion was spent in Waikīkī in 1999, demonstrating the value of reducing the duration and intensity of potential flooding in that area.

To address these issues, DLNR and various other City agencies and community organizations have previously undertaken a myriad of projects and actions to improve the aesthetics, recreational value, ecosystem health, and overall watershed quality, including numerous stream clean ups, flood hazard reduction and erosion control actions, beautifications, and stream bank improvements. Additionally, the Corps produced the Ala Wai Flood Study (2001) under the Planning Assistance to States Program (Section 22 of the Water Resources Development Act of 1974). To marry the watershed restoration and flood hazard reduction concerns into a single, comprehensive project, DLNR and the Corps are collaborating to develop a set of actions that will accommodate both objectives in an efficient, yet effective, way.

IV. Project Need

Flood hazard reduction improvements are needed to reduce or prevent flood damages to the low-lying areas of McCully, Mō‘ili‘ili, and Waikīkī that may result from insufficient channel capacities. Ecosystem restoration actions are needed to restore aquatic and riparian habitats to a more natural state capable of supporting the native species that previously existed there.

A. Flood Hazard Reduction

The Ala Wai Canal has been found to have only marginal capacity to accommodate the 10-year frequent flood event, and definitely could not handle the 100-year flood event. Current Canal bank-full capacity has been estimated at 6,500 cubic feet per second (cfs), while the peak discharge rate for the 100-year flood flow event was estimated to be 22,900 cfs.

Since its construction, the Ala Wai Canal has overflowed and flooded the surrounding neighborhoods at least three times. The flood of November, 1965 resulted from high intensity rainfall from what would be considered a 25-year event. Parts of Waikīkī were reported to have been submerged under two feet of water. The flood of December, 1967 again caused the Canal to overflow, this time also inundating the elementary school on the mauka bank under 6-12 inches of water. Additionally, the passing of Hurricane ‘Iniki in 1992 caused overtopping of the Canal banks and flooding in Waikīkī.

Failure to implement flood improvements to the Canal area would result primarily in damages to private property, and to commercial, recreational, and resort uses. The three most affected areas of McCully, Mō‘ili‘ili, and Waikīkī are all high density neighborhoods, with Waikīkī also being the resort and commercial center of the State’s primary industry, tourism. Additionally, these areas provide a variety of recreational opportunities to thousands of residents and visitors on a daily basis.

B. Ecosystem Restoration

The local ecosystem has undergone high levels of alteration, including habitat loss and degradation, which has negatively impacted native species. Aquatic habitat loss has resulted from conversion to other land uses and stream channel modification. The wetland-delta area of Waikīkī that supported numerous fish, invertebrate, and bird species and served as a sediment collection and filtering system was converted to residential, commercial, and resort uses after the

construction of the Ala Wai Canal in the 1920's. Flood control and bank reinforcement modifications have eliminated stream habitat and altered flow regimes and temperatures, producing conditions that favor alien species over natives. Heavy sediment loads, which are believed to originate primarily from the mauka forested conservation areas, further degrade downstream habitat.

V. Project Purpose

The goals of the Ala Wai Canal Project are to (1) protect Waikīkī and the surrounding areas from the 100-year flood event, (2) improve the migratory pathway for native amphidromous species, (3) reduce sediment buildup in the streams and Ala Wai Canal, and (4) enhance the physical quality of existing aquatic habitat for native species. To achieve these goals, various actions have been investigated and compiled into a set of flood hazard reduction and ecosystem restoration alternatives. Each set of alternatives will be discussed separately, but all were developed to consider the dual purposes of this project.

To accommodate the overarching missions of the project sponsors, as well as other members of the project team that may be interested in becoming partial sponsors in the future, the AWCP considered additional guidelines when designing its alternatives:

- Adhere to ahupua'a land management principles
- Expand the body of knowledge on watershed protection and management in Hawai'i
- Protect and enhance groundwater resources

- Expand the function of stream and channel modifications
- Increase stewardship of the watershed
- Increase/enhance recreational opportunities

VI. Alternatives

The AWCP is currently in the preliminary design phase; therefore, project alternatives have not yet been fully defined. The following are concepts that are currently being considered for analysis in the Environmental Impact Statement.

A. Flood Hazard Reduction Alternatives

The Corps has explored five types of actions in the lower portions of the watershed that could be applied either separately or in combination to protect Waikīkī, McCully, and Mō'ili'ili from the 100-year flood event. These include: dredging the Ala Wai Canal, constructing flood walls of various heights around the Canal, widening the Canal, modifying the existing bridges over the Canal, and utilizing the existing Ala Wai Golf Course as storage for high volume storm events. The 2001 Ala Wai Flood Study determined that the optimal dredge depth for the Ala Wai Canal was between 11 and 13 feet below mean sea level (msl). Any additional depth was found to not provide any significant increase in the Canal's capacity to convey flood waters. Flood walls would add capacity to the Canal and prevent overflow into the surrounding neighborhoods. Additionally, flood walls around the Ala Wai Golf Course could allow it to serve as storage for flood runoff during high volume storm events.

The Canal has a width of 260 feet downstream of its confluence with the Mānoa-Pālolo Drainage Canal. Further downstream, that width narrows to 158 feet near the Hawai‘i Convention Center, thus reducing its conveyance capacity and causing water to back up upstream of the constriction. Widening the Canal at this point is intended to relieve this problem. Additional impediments to flow are the restrictive openings of several of the vehicle-bearing bridges that span the Canal. Modifications to widen those openings are also being considered.

The eight alternatives proposed to alleviate flooding include single and multiple actions. These alternatives are: (1) dredging, (2) flood walls, (3) a combination of dredging and flood walls, (4) a combination of dredging, flood walls, Canal widening, bridge modification, and Ala Wai Golf Course storage, (5) a combination of flood walls, Canal widening, bridge modification, and golf course storage, (6) a combination of dredging, flood walls, and golf course storage, (7) a combination of dredging, Canal widening, and golf course storage, and (8) no action. Evaluation of the flood hazard reduction alternatives will take into account a cost-benefit analysis and minimization of impacts to recreation, aesthetics, historic and cultural resources, social resources, and native species habitat.

B. Ecosystem Restoration Alternatives

Various ecosystem restoration actions are being investigated for various stream and riparian areas of all three sub-watersheds and include: stream channel reconstruction, riparian re-vegetation, stream bank reinforcement, sedimentation

basin and check dam construction, debris catchment and energy dissipation feature installation, and maintenance accessibility enhancement.

Stream channel reconstruction would be specifically designed to improve native species habitat, with treatments ranging from the addition of low flow channels to existing concrete-lined channels, to adding boulders and meanders, to removing concrete lining, where appropriate. Riparian re-vegetation is proposed to enhance habitat by providing natural shade, food sources, and bank stabilization. Where stream banks require further reinforcement measures, other methods are being investigated.

Sedimentation basins are being explored at various locations as a way to reduce siltation of the streams and canals. Debris catchment structures, such as booms, may be proposed as a way to remove trash and other debris from the surface waterways. Check dams and energy dissipation measures are proposed throughout the mauka areas to complement the downstream flood hazard reduction components.

Alternative ecosystem restoration concepts are currently being explored and may include (1) no action, (2) a group of seven actions in various locations throughout the watershed, (3) a group of fourteen actions in various locations, (4) a group of twenty-one actions in various locations, and (5) implement all measures in all proposed locations. Evaluation of ecosystem restoration alternatives will be

based on the area of habitat they either create, improve, or provide access to, as well as their ability to complement flood hazard reduction measures and minimize adverse impacts to social, cultural, historic, recreational, and economic resources.

C. Potential Impacts and Mitigative Measures

Project impacts will depend on the set of actions eventually selected as the preferred alternative. Potential impacts associated with possible actions are currently being investigated and will be discussed in detail in the Draft Environmental Impact Statement.

Short-Term Impacts: The implementation of the Ala Wai Canal Project will create some local short term impacts generally associated with construction activities. Potential impacts will depend on the alternative selected, but will likely include temporary increases in turbidity to waters near the project site, either in or along one of the streams, ditches, or canals. Runoff, drainage, and water quality impacts will be mitigated through best management practices and other acceptable erosion, sedimentation, and turbidity control measures, as required through the permitting process.

Short-term noise and air quality issues may also arise from construction-related activities. These impacts will similarly be mitigated through best management practices and other methods required by the permitting process.

Construction of the project will also result in short-term beneficial impacts to design services, construction-related employment, and materials industries.

Long-Term Impacts: Long-term impacts will occur as a result of implementation and operations and maintenance of the project. Flood control actions may negatively impact visual and historic resources associated with the Ala Wai Canal and bridges that span sections of the Canal. Coordination with the DLNR State Historic Preservation Division and other related agencies and organizations is ongoing to ensure modifications are designed in such a way as to minimize impacts to these resources and to implement actions in such a way as to be sensitive to the existing physical and locational context. Additionally, periodic use of flood storage areas may temporarily inhibit or restrict use of those typically recreational areas until proper cleanup occurs. While use of flood storage areas is temporary, this use is intended to occur periodically for an indefinite period of time.

Implementation of the project will positively affect long-term socioeconomic conditions by reducing flood damages to Waikīkī, McCully, and Mō‘ili‘ili caused by the 10-year to the 100-year storm event.

Ecosystem restoration actions may result in long term impacts to private property, recreational space, and biotic resources. Project implementation is being restricted to publicly owned lands, unless a unique or highly beneficial action is

needed on a privately-owned parcel. In such cases, negotiations with private owners will occur to minimize impacts to their property or fairly compensate them for their inconvenience. In most cases, it is anticipated that recreational space and biotic resources will be enhanced through implementation of this project. These and any other long-term issues will be investigated in detail in the Environmental Impact Statement, along with measures to mitigate adverse impacts to resources.

The current scope of analysis for the Draft Environmental Impact Statement is listed below in Section VII B on page 31. The public is encouraged to provide comments on additional impacts that should be investigated in the EIS through written comments provided to the contacts listed at the beginning of this report, or by attending a scoping meeting that will be held on June 29, 2004. Additional information on the scoping meeting may be found in Section VII A on page 30.

D. Significance Criteria

The following is an assessment, based on the thirteen (13) “Significance Criteria” of Title 11, Chapter 200-12 of the Department of Health Administrative Rules, to determine whether or not the proposed project will have a significant impact on the environment.

(1) Involves a loss or destruction of any natural or cultural resources;

Most of the existing project area has been previously modified by urbanization and related development. One of the goals of the project is

ecosystem restoration, therefore, the proposed project is expected to enhance natural resources and restore portions of areas that have been previously destroyed or altered.

Cultural resources, generally in the form of historic properties, may also require modification to accommodate some of the flood control features. Communication is ongoing with the DLNR-SHPD, and other local community organizations to determine the most appropriate way to approach such modifications. Federal requirements also require compliance with Section 106 of the National Historic Preservation Act of 1966. Historic, archaeological, and cultural resource studies are ongoing.

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

Development of the proposed project is not anticipated to curtail beneficial uses of the land. Implementation of the flood control features is anticipated to protect Waikiki and the surrounding areas from flood events and could therefore be argued to enhance beneficial uses. Additionally, ecosystem restoration actions would restore lost structure and function and may increase uses through enhanced educational and recreational opportunities.

(3) *Conflicts with the State's long-term goals or guidelines as expressed in Chapter 344, HRS;*

Implementation of the proposed project is intended to enhance natural resources and quality of life and is therefore not anticipated to conflict

with the guidelines in chapter 344, HRS. The flood control portion of the project is intended to protect the lower areas of the watershed from flood events, and therefore not expected to conflict with the long-term goals of the State.

- (4) *Substantially affects the economic or social welfare of the community or state;*

The project is anticipated to have a positive impact on the economic and social welfare of the local community and State. Implementation of the flood control features will protect Waikiki, the major focus of the State's primary industry, tourism. Ecosystem restoration will enhance natural resources, as well as potentially provide opportunities for residents and visitors to learn about and appreciate the natural systems present in this urban environment.

- (5) *Substantially affects public health;*

Short-term noise and air quality impacts may occur during the construction phase of this project; however, these impacts will be mitigated in accordance with permitting requirements. The project will be developed in accordance with applicable Federal, State, and County laws and regulations to ensure minimal adverse impact on public health.

- (6) *Involves substantial secondary effects on population or infrastructure demands;*

The project will not open up new areas to development and therefore secondarily affect population and infrastructure demands.

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

The project will enhance environmental quality, and seeks to reverse prior degradation that has occurred as a result of urbanization.

(8) *Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment to larger actions;*

In an effort to address the dynamic nature of the ecosystem, the Ala Wai Canal Project tried to be as holistic as possible, examining and including as many actions as possible under one umbrella, even considering actions that may be implemented by other agencies and organizations in a complementary fashion. This project therefore attempts to address cumulative actions and is not a commitment to larger actions.

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

Biological resource studies are ongoing, but there are no listed rare, threatened, or endangered species currently known in this area that will be affected by this project. The upper forested area of the project site includes critical habitat for the Oahu elepaio, but there are no current actions proposed there at this time. Additionally, it is one of the goals of this project to expand and enhance existing habitat for native species, therefore making negative impacts to such resources an unacceptable component of the project.

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

No long-term air quality or ambient noise impacts are expected from the project. Water quality improvements are a secondary objective of the project, as a component of the ecosystem restoration goal, therefore making negative effects on water quality an unacceptable component of the project. Short-term construction noise, water, and air quality impacts will be mitigated in accordance with permitting requirements.

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

The proposed project is intended to be located in environmentally sensitive areas, such as erosion-prone areas and flood plains, in order to address these problems. Implemented actions will be designed so as to accommodate for the added stress anticipated by being located in such areas, and will be careful to avoid transferring these problems to other locations.

- (12) *Substantially effects scenic vistas and view planes identified in county or state plans or studies;*

If included as part of the proposed alternative, flood walls may be implemented around the Ala Wai Canal and affect scenic vistas and views of the Canal and toward the mauka areas. Every effort is being made to

minimize the height of such walls, if necessary, and to design them in such a way as to minimize their negative effect on aesthetics and views.

(13) *Require substantial energy consumption;*

The project may require some energy consumption to run pumps or structural devices intended to direct water flow during storm conditions.

However, these components are not expected to run continuously or have substantial energy requirements.

VII. Scoping Process

Public participation has been ongoing since the project's inception. Various agency, technical, and community working groups have been convened, and continue to guide the development of this project. Organizations that have been contacted to date include Federal: US Army Corps of Engineers, US Department of Agriculture-Natural Resources Conservation Service; US Environmental Protection Agency, US Fish and Wildlife Service, US Geological Survey; State of Hawai'i: DLNR, Ala Wai School, 'Ānuenue School, Chaminade University/St. Louis School, Department of Health, Office of Planning-Coastal Zone Management; University of Hawai'i (UH) Center for Hawaiian Studies, UH Environmental Center, UH Facilities and Grounds Safety, UH Department of Oceanography, UH Department of Zoology, Lyon Arboretum; City and County of Honolulu: Board of Water Supply, Department of Design and Construction, Department of Environmental Services, Department of Facilities Maintenance, Department of Parks and Recreation-Ala Wai Golf Course, Department of Planning and Permitting; Private Organizations: Ala Wai Watershed Association,

Hawai‘i Hotel and Lodging Association, Hawai‘i Nature Center, Ko ‘olau Mountains Watershed Partnership, Mālama o Mānoa, Maunalaha Community, Pālolo Community Council, and Waikīkī Improvement Association. Other agencies and organizations were invited to become involved in the process, but for various reasons were unable to participate at this time. Additional opportunities for public involvement will be provided throughout the remainder of the project, specifically through the environmental review process. Public comments on the NOI/EISPN will be accepted until July 8, 2004, or 30 days after the publication date.

A. Public EIS Scoping Meeting

The Corps and DLNR will be holding a public scoping meeting to discuss the proposed Ala Wai Canal Project. Meeting participants will be given an overview of the proposed project and will have the opportunity to provide comments on the scope of analysis for Draft EIS studies.

The EIS scoping meeting will be held on:

Date: Tuesday, June 29, 2004
Time: 6:30 p.m. to 9:30 p.m.
Location: Hawai‘i Convention Center
1801 Kalākaua Avenue
Honolulu, Hawai‘i 96815

B. Present EIS Scope of Analysis

Significant issues that will be discussed in the EIS include, but may not be limited to, the following topics. The man-made environment: issues to be discussed in the EIS include archaeological, historic, and cultural resources, visual resources, public access, hazardous materials, noise, traffic, and air quality.

The natural environment: the EIS will discuss the existing natural environment and the potential effects the project might have on climate, soils, topography, surface and ground water, flora, and fauna.

The socio-economic environment: Discussion of socio-economic conditions may include demographic profiles, economic impacts, aesthetics, transportation, and recreational resources.

Both short-term and long-term impacts of the proposed project will be evaluated. Additionally, the EIS will discuss the cumulative impacts of the project in relation to past, present, and reasonably foreseeable future actions, as well as any mitigation measures proposed. Technical studies currently being undertaken include archaeology and historic resources, cultural resources, flora, fauna, water resources, and engineering.

C. Compliance with Federal Requirements

In compliance with the following Federal laws, correspondence has been initiated and consultation will occur with the following agencies:

Clean Water Act of 1977, Section 401 Water Quality Certification

Hawai‘i State Department of Health – Environmental Management Division

Clean Water Act of 1977, Section 404(b)(1) Coordination

U.S. Army Corps of Engineers

Coastal Zone Management Act of 1972 Consistency Determination

Hawai‘i Department of Business, Economic Development and Tourism - State

Office of Planning

Endangered Species Act of 1973, Section 7

U.S. Fish and Wildlife Service (USFWS)

National Marine Fisheries Services

Fish and Wildlife Coordination Act of 1958, Section 2(b)

USFWS

National Environmental Policy Act of 1969

U.S. Environmental Protection Agency

National Historic Preservation Act of 1966, Section 106

Department of Land and Natural Resources (DLNR) - State Historic Preservation

Division

D. Necessary State and Local Permits and Approvals

The following additional permits and approvals are anticipated for the completion of this project. This list may be amended as the project develops.

Bridge and Causeway Permits

Fourteenth Coast Guard District

Conservation District Use Application

DLNR – Office of Conservation and Coastal Lands

Hawai‘i State Environmental Impact Statement

Office of Environmental Quality Control

DLNR

Special Management Area Permit

City and County of Honolulu Department of Planning and Permitting

Stream Channel Alteration Permit

DLNR – Commission on Water Resources Management

E. Draft EIS Availability

The Draft EIS is expected to be published in early 2005. Interested parties are encouraged to provide contact information if they wish to be notified when the Draft EIS becomes available for review. Public comments will be accepted for 45 days after the publication date.