# United States Department of the Interior

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

In Reply Refer To:
01EPIF00-2018-TA-0435

October 23, 2018

Mr. Ronald A. Sato, AICP, Senior Associate
HHF Planners
733 Bishop Street, Suite 2590
Honolulu, Hawai'i 96813

Subject: Technical Assistance for the Draft Environmental Impact Statement for the proposed Hawaiian Memorial Park Cemetery Expansion Project, Kāne'ohe, O'ahu

Dear Mr. Sato:

The U.S. Fish and Wildlife Service (Service) received your letter on September 6, 2018, requesting our comments on the Draft Environmental Impact Statement (DEIS) for the proposed Hawaiian Memorial Park Cemetery Expansion Project, located in Kāne'ohe, on the island of O'ahu [TMK: (1) 4-5-033: por. 001]. This letter has been prepared under the authority of and in accordance with the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), and other authorities mandating Service concern for environmental values.

**Project Description**

Hawaiian Memorial Life Plan, Ltd. (Petitioner) owns and manages the Hawaiian Memorial Park (HMP), a full service cemetery that provides the community with burial plots and a variety of interment options. The Petitioner is proposing to expand HMP because of growth in O'ahu's aging population and demand for ground interment and inurnment spaces. Currently, less than 6% of individual plots at HMP are available for families. Therefore, the Petitioner is asking the State of Hawai'i (State), Land Use Commission (LUC) to reclassify a portion (53.45 acres) of their larger 164.4 acre property from the State Conservation District to the Urban District, allowing for the expansion of the cemetery to meet future burial plot needs. This expansion project is referred to as the Hawaiian Memorial Park Cemetery Expansion Project ("Project" or "Proposed Action"). The property the Petitioner intends to reclassify is referred to as the "Petition Area."

The Proposed Action consists of two components: 1) expansion of the HMP cemetery to include 28.2 acres of new cemetery space; and 2) creation of a 14.5-acre cultural preserve immediately northeast of the cemetery expansion area. Remaining portions of the larger 164.4 acre property surrounding the Petition Area would remain undeveloped. A conservation easement with the Hawaiian Islands Land Trust would be placed on 156.5 acres of the larger parcel (less HMP's 7.9-acre Ocean View Garden section), restricting future development of the property except for

execution of the Proposed Action.

**Service Comments**

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawai'i Biodiversity and Mapping Program as it pertains to listed species and designated critical habitat. The federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur and also be impacted by components of the Proposed Action. Therefore, we appreciate your proposed avoidance and minimization measures for the Hawaiian hoary bat. Please note our comment letter dated February 5, 2018 for specific dates to avoid disturbance during the bat breeding and pupping season. Additionally, the federally endangered blackline Hawaiian damselfly (*Megalagrion nigrohamatum nigrolineatrum*) has been documented on the HMP property and may be impacted by components of the Proposed Action. We offer the following comments to assist you in your proposed project.

Blackline Hawaiian damselfly

The blackline Hawaiian damselfly occurs in the slow sections or pools along mid-reach and headwater sections of perennial upland streams and in seep-fed pools along overflow channels bordering such streams. All colonies of the blackline Hawaiian damselfly are constrained to portions of streams not occupied by nonnative predatory fish—that is, stream portions above geologic or manmade barriers (e.g., waterfalls, steep gradients, dry stream midreaches, or constructed diversions).

Blackline Hawaiian damselfly adults are predacious and feed on small flying insects, such as midges; immatures require pools until their adult in upland streams, as well as seepage-fed pools that border them, and some degree of riparian tree cover. Threats to the current existence of this species include severe alteration and degradation of freshwater habitats due to past and present land use and water management practices, including agriculture, urban development, and development of ground water, perched aquifer and surface water resources, as well as accidental and deliberate introduction of alien species, such as fish, backswimmers, California grass and fire ants.

The habitat where the blackline Hawaiian damselflies are found within your proposed project area consists of a spring head contained in a damaged concrete box structure, with an interior water-filled well approximately 9 feet deep. Water seeping out of the hillside to either side of this structure accumulates as shallow pools 1-3 inches deep in a small, muddy gully that gently descends for a distance of approximately 250 linear feet until being captured in a vertical concrete shaft that connects to the City and County of Honolulu storm sewer system. The blackline Hawaiian damselflies appear to be breeding along the length of this outflow between the spring head and the storm sewer intake. Changes to the hydrology within this site or upstream have the potential to threaten the habitat currently used by the blackline Hawaiian damselfly.

In general, the Service finds that the DEIS underestimates or fails to adequately analyze certain risks to the habitat supporting a local population of the blackline Hawaiian damselfly inherent in the development of the Petition Area for a cemetery expansion. In particular, the Service's concerns center on impacts to hydrology and spring discharge, and on water-borne or wind-borne

transport of environmental contaminants, in the form of landscaping chemicals or their residues, into the damselfly habitat. The Service also notes that additional discussion is encouraged in regard to potential coordination with its Partners for Fish and Wildlife Program. We recommend a revised EIS be prepared that addresses these deficiencies.

*Hydrology*

On Page 2-24, the DEIS states that "The majority of the approximately 53.45-acre Petition Area would be used for expansion of the cemetery by 28.2 acres (53% of total Petition Area). The cemetery expansion would involve the construction of landscaped areas for burial space. Small private structures could also be placed throughout the cemetery grounds with special features, garden walls, walkways, and monuments similar to that present within other areas of HMP. After grading to establish appropriate slopes, the majority of the land would be landscaped with turf and would match the appearance of the existing cemetery. An internal roadway system encompassing about 3 acres would be constructed to provide access to various areas..."

To reconfigure the site into topography suitable for a cemetery, the existing steep slopes within the Petition Area would need to be extensively altered. As explained on Page 2-25 of the DEIS "In order to achieve the desired finish grades, the lower flank slopes of the Oneawa hillside on the western end of the site would need to be cut...The majority of the hillside on the western end of the expansion site would be excavated reducing it up to 40 feet in height; however, the areas near the top of the hillside would reduce it up to 100 feet in height. A smaller ridge line below this hillside in the area generally between Lipalu Street and Ohaha Place would also be excavated. Excavations would extend up to 60 feet for this smaller ridge."

The DEIS further states that "The excess soil from excavation activities would be used to fill the lower portions of the basin areas within the cemetery expansion site... these areas proposed for fill generally include areas below the current hillside, and the majority of the eastern half of the cemetery expansion site. The majority of fill activities would increase the existing height of the basin less than 20 feet; however, a section would fill up to 40 feet in height."

In addition to grading and filling, construction of large retaining walls are also proposed. On Page 2-25 the DEIS notes that "The roadways alignment and earthwork balance requirements under the preliminary grading plan necessitate the need for constructed retaining walls at various locations within the cemetery site. A total of seven retaining walls (labelled Walls A to G) are planned... These retaining walls would be utilized within the central and western areas of the Petition Area, and most are associated with the excavation of the hillside. The keystone designed retaining walls would average about 10 feet in height, with some sections having a maximum height of 25 feet due to terrain. The use of walls taller than 10 feet tall is planned to be kept to a minimum. However, where taller wall sections are required, the keystone would be terraced to provide for a more aesthetic view complete with landscaping."

The Service notes that much of the proposed terrain reconfiguration would occur at the western end of the Petition Area, which lies immediately upslope of the habitat supporting the population of the ESA-listed blackline Hawaiian damselfly. As such, any impacts of such activities to the local hydrology feeding the spring at the site would be immediately detrimental to the integrity and potential long-term survival of this population. On Page 3-64 of the DEIS, it is explained

that a consultant was hired to assess the nature of groundwater flows in this area. It states "Two types of field investigation were undertaken to assess whether the well and seep are from a shallow perched water source. This investigation consisted of: 1) drilling four boreholes directly upslope of the well and seep; and 2) conducting a siphon and pump test of the well to determine if subsurface leakage from the well is creating the seep that emerges just four feet downslope." The studies concluded that "the seep is maintained by the natural discharge of groundwater moving downslope through the poorly permeable residual soils overlying the unweathered Kailua volcanics. In the vicinity of the well and four test boreholes upslope from the well, the groundwater is actually semi-confined. The groundwater movement is through underlying soils at depths of 10 feet or more rather than through the surface soils."

On subsequent pages, the DEIS does not seem to be internally consistent in its conclusions regarding potential construction impacts to this groundwater flow supporting the blackline Hawaiian damselfly habitat. On page 3-66 the DEIS states that "Based on these tests, it was determined that grading improvements should not have a significant impact on the Petition Area's underlying groundwater conditions or the well and seep." However, on page 3-67 the DEIS states that "The weight of the fill material has the potential to compress existing soils and interrupt or redirect groundwater migration that is moving downslope. This could reduce the permeability of these already poorly permeable soils, impeding or re-routing the downslope direction of groundwater flow." These two statements appear to be at odds with each other, one asserting no impacts, the other admitting that impacts might well occur. We believe that impacts have a reasonable likelihood of occurring, due to both excavation into slopes above the spring habitat that may penetrate bedrock, and soil compaction impacts, as described above.

Furthermore, on Page 2-30, it is observed that, "Excavation work may encounter stiff to hard residual and saprolitic soils and the underlying basalt rock formation. In addition, some of the excavations may encounter boulders, clusters of cobbles, and hard basalt rock formation. It is anticipated that most of the materials may be excavated using normal heavy excavation equipment. However, deep excavations, boulder excavations, and excavations into the underlying basalt rock formation may require the use of hoe rams." This seems to be a direct acknowledgement that excavation activities associated with terrain reconfiguration could indeed penetrate the entire overlying soil horizon and into the underlying basalt bedrock, which would have to potential to impact the groundwater flow at levels below the surface soils. As discussed previously, the DEIS indicates that the most extensive excavation of this type will occur at the western end of the Petition Area, directly above the damselfly habitat. No mention is made of how such excavation impacts might be mitigated.

The proposed solution to the soil compaction issue presented in the DEIS is to install deeper subsurface drains to route groundwater flow, but it is not specified how far below the existing surface such drains would need to be. If they were deep enough to penetrate whatever underlying aquifer is feeding the present spring (10 feet or deeper, according to the information in the DEIS) and served to change the direction of subsurface groundwater flow, then they themselves could represent potential impacts to the damselfly population.

The Service also has concerns about the proposed mitigation measures related to the spring habitat. On Page 3-56, one of the measures proposed to minimize potential effects on the

damselfly population is to "Conduct regular inspection of the seep to ensure the present low trickle flow of water is continued." However, the DEIS does not also describe what the response would be if the water flow is observed to be declining, or ceases. This possible scenario could result in significant habitat modification or degradation that results in death or injury to the blackline Hawaiian damselfly by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.

In summary, the DEIS fails to document how groundwater inputs are currently arriving at the current spring head, fails to analyze how the proposed grading, filling and road or retaining wall construction may alter the flow, or how an interruption in such flow would be addressed. If the flow is interrupted, this could have significant impacts to the listed damselfly by leading to partial or complete loss of spring-fed habitat. The Service therefore recommends that a revised EIS also evaluate an alternative under which no significant grading, excavation or construction would occur on any of the slopes above the spring along the plausible flow path of the source groundwater, this area being roughly equivalent to that lying southwest of the line labelled "Site Section A" in the DEIS Figure 2.4. Under such an alternative, significant development and ground disruption would be limited to the areas east of the spring, with access obtained by using existing road grades left over from the former dairy farming operation in the area to the best extent possible.

*Environmental contaminants*
On Page 3-87, the DEIS states that "Herbicide, and to a lesser extent pesticide, usage may occur as a result of landscaping maintenance activities associated with cemetery expansion area."
It is further stated that "With the extensive grading improvement planned at the site, the trace concentrations of pesticides such as Diuron detected that may be potentially located in alluvial deposits adjacent to drainage ways may become buried within fill material or removed as part of excess material from cutting activities. These pesticides may still be present within the Petition Area from its prior historic use for agriculture and ranching activities."

Cemeteries are intensively managed landscapes, and as such make use of a wide array of landscape maintenance chemicals including herbicides, pesticides, and fertilizers. The DEIS acknowledges that such chemicals will be used in the future within the proposed project footprint, and that some residues are already present in or adjacent to the proposed project area. Although the DEIS takes into account the potential delivery of such chemicals into the main Kāwā Stream channel in the context of a Clean Water Act Section 303(d) assessment of Total Maximum Daily Load (TMDL), it does not assess the potential for more local transport of such chemicals downslope from the proposed new cemetery development into the spring head and outflow area at levels below TMDL via shallow groundwater percolation or sheet flow during heavy rainstorms. It would seem likely that at least some level of contamination would inevitably be transported immediately downhill into the habitat currently occupied by the damselfly. Peer-reviewed research has demonstrated that aquatic insects such as damselflies are particularly vulnerable to lethal and sub-lethal effects when exposed to pollutants, such as pyrethrin-based pesticides and other chemicals that may be used in landscaping maintenance. The revised EIS should therefore analyze this possibility in greater detail. Consistent with the hydrology concerns stated above, the Service recommends that the revised EIS also evaluate an alternative under which no landscaped areas of any sort would be created on any of the slopes draining into the

damselfly habitat; this area again being roughly equivalent to the portion of the parcel lying southwest of the line labelled "Site Section A" in the DEIS Figure 2.4.

The Service also notes that the majority of the area proposed for cemetery development lies east of the damselfly habitat. As such, it does not present the same risks from direct runoff of landscaping chemicals or residues, but it is directly upwind of the spring habitat under normally prevailing tradewind conditions, and the potential thus exists for airborne drift of pesticides into the spring area, which could affect damselfly adults, as well as settle into the spring water, thus exposing earlier life stages to toxic effects. The revised EIS should therefore assess this risk also and indicate how it might best be mitigated.

*Partnership*
On Page ES-7, the DEIS states that in regard to the damselfly habitat "Coordination would be conducted with the U.S. Fish and Wildlife Service to establish a habitat restoration and conservation program for this damselfly's habitat under the Partners for Fish and Wildlife program." The Service acknowledges that some initial conceptual discussions have occurred, and the DEIS does mention certain mitigating measures, including construction of fencing around the damselfly habitat, monitoring for invasive aquatic species, and providing molting perches in aquatic areas away from introduced ants, all of which would be useful and beneficial components of such a habitat restoration and conservation plan. However, we still have concerns for the potential impacts resulting from the proposed changes in hydrology upslope and the environmental contaminants on the damselfly and its habitat. Lastly, no substantive progress towards a Partners for Fish and Wildlife conservation project has been made to date in regard to an actual proposal detailing specific activities, timeline or budget. Therefore, we recommend that a timeline should be provided in the revised EIS in regard to how coordination on this matter will proceed.

Although we encourage continued coordination with the Partners for Fish and Wildlife program in order to establish a habitat restoration and conservation program for the damselfly's habitat, please note that the successful development of a habitat restoration plan may not necessarily relieve the project proponent from the need to comply with the ESA. If the final proposed action still includes potential changes in the hydrology or use of landscaping chemicals that may result in take of the endangered blackline Hawaiian damselfly, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If no Federal agency is involved with the proposed project, we recommend the Petitioner request an incidental take permit under section 10(a)(1)(B) of the ESA. The section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

**Summary**

In summary, we recommend that the revised EIS address in more detail the potential threats to the local population of blackline Hawaiian damselfly specifically in regard to hydrology and environmental contaminants, and also analyze an alternative under which no cemetery development or major land disturbance would occur on any slopes directly above or draining into the damselfly habitat. The Service also encourages the Petitioner to engage at their earliest

opportunity with the Partners for Fish and Wildlife Program, and for the revised EIS to provide a timeline for implementation of such a partnership and its associated mitigation activities. If incidental take of the blackline Hawaiian damselfly cannot be avoided, we also recommend the Petitioner request an incidental take permit under section 10(a)(1)(B) of the ESA.

We appreciate your efforts to conserve Hawai'i's native species. If you have any questions or concerns regarding our letter, please contact Jiny Kim, Fish and Wildlife Biologist (email: Jiny_Kim@fws.gov) and Dr. Dan A. Polhemus, Aquatic Ecosystem Conservation Program Manager (email: Dan_Polhemus@fws.gov). When referring to this project, please include this reference number: 01EPIF00-2018-TA-0435.

Sincerely,

Kristi Young
Deputy Field Supervisor, Programmatic Operations

cc:
Mr. Scott Derrickson – State of Hawai'i, Land Use Commission
Ms. Cynthia King – State of Hawai'i, Department of Land and Natural Resources – Division of Forestry & Wildlife