

Potential Project Impact

The project would not directly impact Kāwā Stream's bed or banks, or directional flow because the site is located away from the stream. However, storm water runoff from the project would discharge toward lower lying areas that eventually flow into this stream. Petition Area improvements are planned to include detention and/or retention basins that would detain storm water runoff and allow sediments and nutrients to settle and infiltrate into the ground before discharging into the stream. These drainage improvements should have a beneficial effect in addressing storm water runoff and water quality. A water quality study will be conducted that evaluates and assesses discharges from the project into Kāwā Stream. This study will also include information addressing TMDL guidelines for Kāwā Stream in relation to proposed improvements. The results of this study would be used to identify mitigative measures and BMPs that are addressed in the Draft EIS in greater detail.

3.8 SCENIC RESOURCES

Visual resources within and around the project area have been addressed in two City planning documents, the *Ko'olau Poko Sustainable Communities Plan* (Ko'olau Poko SCP) (DPP, 2017) and *Coastal View Study* (Chu and Jones, 1987). These planning documents identify visual resources associated with the project area. The *Coastal View Study* did not identify any important scenic resources or viewing corridors in the vicinity of HMP.

The Ko'olau Poko SCP identifies the orientation and vantage points of major panoramic views within the Ko'olau Poko ahupua'a, which includes the project area. HMP is identified as a cemetery under the Open Space Map of the Ko'olau Poko SCP. There are no significant views from stationary points in the area of HMP. The Ko'olau Poko SCP identified the following scenic views from major roadways identified below.

1. Continuous views of the distant Kāne'ohe district and coastline from the H-3 Freeway generally from the Tetsuo Harano Tunnels down to its intersection with Kamehameha Highway.
2. Intermittent views of the natural landscape along the H-3 Freeway between Kamehameha Highway and the entrance to Marine Corps Air Station Kāne'ohe Bay.

Development in the vicinity of HMP is low-rise in nature and characterized by single-family residences and businesses. The primary exception to the low-rise built environment in the vicinity is the Pohai Nani Retirement Community, which is north of the Petition Area. The centerpiece of the retirement community is a large 14-story building, which is prominently visible throughout the region. HMP cemetery contributes to the open space of the region by virtue of its size and open landscape character. Driving along Kamehameha Highway in either direction, motorists can view across the landscaped cemetery lawns through to the foothills.

Potential Project Impact

Project improvements are not expected to have a significant impact on scenic resources for views from major roadways. HMP is not visible from the H-3 freeway between Kamehameha Highway and the entrance to Marine Corps Air Station Kāneʻohe Bay. Views of HMP along the H-3 Freeway from the Tetsuo Harano Tunnels are not easily recognizable because the site blends into the larger Kāneʻohe Town landscape from that distance. The Petition Area is also located behind the existing HMP making it less visible from major roadways. Therefore, project improvements would have minimal effect on views of Kāneʻohe Town from the H-3 Freeway. The Draft EIS will evaluate visual impacts from the project in further detail from Kamehameha Highway and other locations from immediate surrounding neighborhoods.

3.9 HISTORIC AND CULTURAL RESOURCES

3.9.1 Historical Background

In pre-contact times, the ahupuaʻa of Kāneʻohe offered fresh water from inland springs that supported extensive agricultural fields and a well-developed fishpond system, making it both an agricultural and aquacultural center on Oʻahu. Pre-contact land uses would have consisted mainly of kalo (wetland taro) and kula (dryland) cultivation of hala pandanus (used for making household furnishings such as mats), wauke (paper mulberry used for making tapa/kapa cloth), bananas, and sweet potatoes.

In the 1860s, both commercial sugar cane and rice cultivation began in Kāneʻohe. The Kaneohe Sugar Plantation Company was established around 1865, but the plantation eventually shut down in 1891 when the yield was not enough to support the operation. The lands were then converted to stock farming under Kaneohe Ranch. By the mid-1880s, grazing animals (cattle, sheep, and goats) were having an impact on the land and water of Kāneʻohe. Alien grasses and other species, such as pigeon peas, were introduced to the area as cattle fodder. Much of the land modification in the upland and hilly portions of Kāneʻohe may be the result of heavy cattle grazing over a long period of time.

The commercial cultivation of pineapple in the region began in the 1890s. From approximately 1910 to 1925, pineapple cultivation was a major industry in Windward Oʻahu stretching from Kāneʻohe to Kahaluʻu. The pineapple fields were later abandoned when Molokaʻi and Lānaʻi pineapple cultivation began to boom. Most of the former pineapple land went to grass, and some of it was used to graze cattle.

By the end of World War II, ranching was no longer economically viable, and residential developments changed the face of Kāneʻohe. The opening of the Wilson Tunnel and the expansion of the Pali Highway in the 1950s and 60s led the way to a development boom on the windward side. The dairy industry rose to prominence in the post-war years due to shortage of available land from urban expansion forcing dairy districts near Honolulu to relocate to more remote areas of Oʻahu. In the 1950s, Kailua-Kāneʻohe was an important dairy district of Windward Oʻahu. The land presently occupied by HMP adjacent to Kamehameha Highway was formerly a dairy farm.

3.9.2 Previously Recorded Sites

Two archaeological inventory surveys have been undertaken that cover the Petition Area; one completed in 1989 by Szabian, Landrun & Cleghorn (SLC); the other in 2007 by Cultural Surveys Hawai'i (CSH). These two efforts identified several archaeological sites within and in the vicinity of the Petition Area.

One previously recorded site by SLC was identified as State Inventory of Historic Places (SIHP) 50-80-10-4682, and was located outside of the Petition Area. This site was described as a series of natural "terraces" formed by lava rocks by SLC. This site was later determined to be non-cultural, and is not considered a historic property anymore.

A total of 11 historic properties have been recorded within a large study area that includes both the current Petition Area and areas outside of it. Figure 3.4 identifies these sites in relation to the Petition Area. Table 3.1 provides a summary of these sites. Overall, there are eight historic sites identified within the Petition Area, and three sites located outside of the Petition Area. The most significant historic site is Kawa'ewa'e Heiau. Other sites consist of pit features, habitation sites, and stone enclosures.

Kawa'ewa'e Heiau (Site -354) is located in the northwest corner of the Petition Area, and will be included as part of the cultural preserve established and managed by the Ko'olaupoko Hawaiian Civic Club. Built at the beginning of the 12th century, the heiau was a ceremonial site used for worship. Because of its prehistoric religious significance, the site was designated as a historic site (#50-80-10-354, "Kawa'ewa'e Heiau") and placed on the Hawai'i Register of Historic Places in 1971. The Register describes the site as a "large Heiau; probably the most massive on the windward side; in excellent condition." It was also placed on the National Register of Historic Places in 1972.

Potential Project Impact

The project would have a beneficial effect on historic properties because almost all of the historic sites, except Site -4680, within the Petition Area will be included within a proposed Cultural Preserve. No other historic sites have been identified within the proposed cemetery expansion area. Site -4680 would be left undisturbed, and no further work was required for this site. This Cultural Preserve would allow for the restoration, management, and preservation of historic sites present within the preserve. This would ensure Kawa'ewa'e Heiau can be preserved and maintained, supporting its historic and cultural features, and consistent with its listing on both the state and federal registers. Within the preserve, an area is proposed for potential native Hawaiian burials separate from the HMP. This supports traditional cultural practices and the use would be compatible with other historic sites present within the preserve.

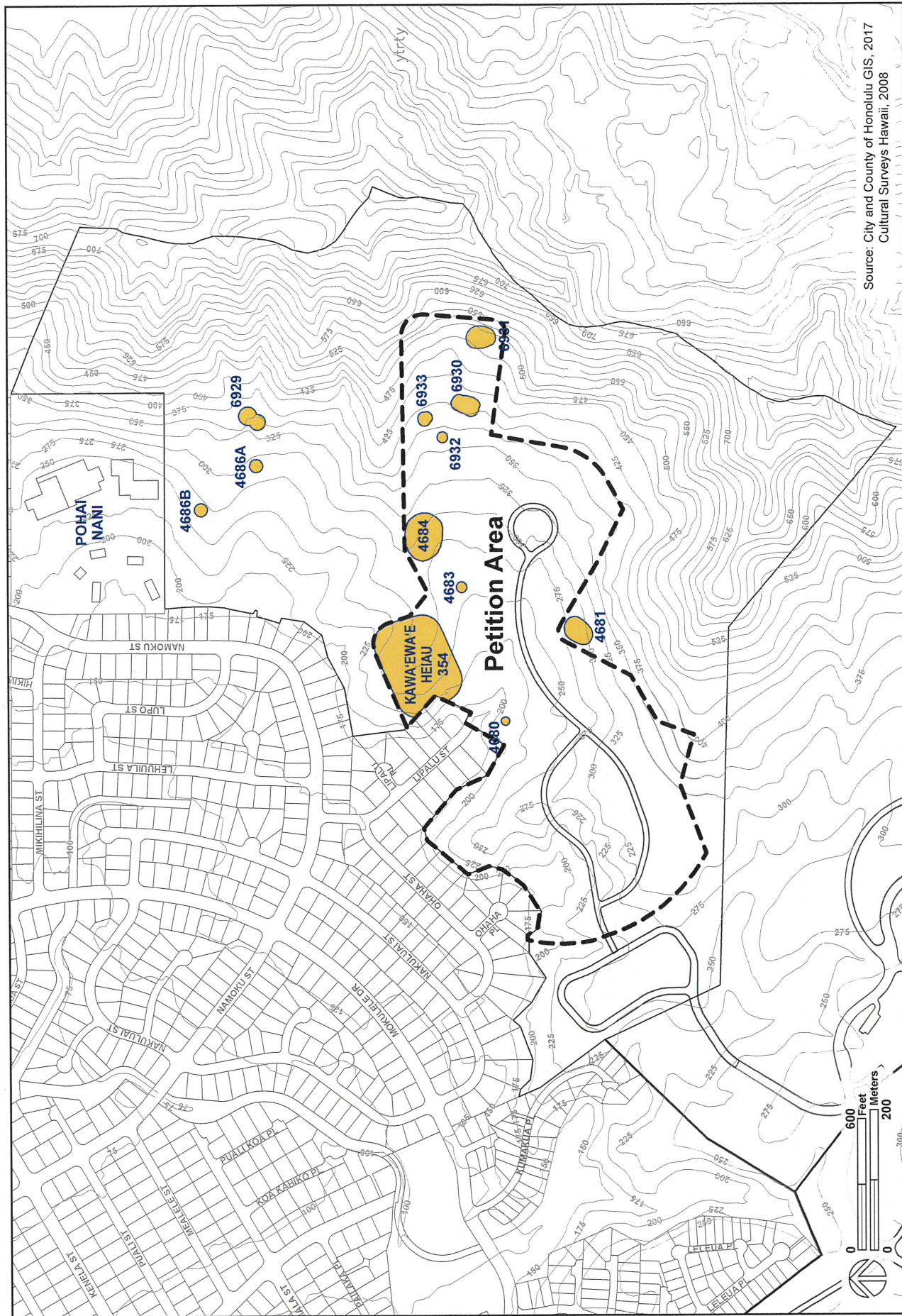


Figure 3.4

Existing Historic Sites Map

Hawaiian Memorial Park Cemetery Expansion Project
Kāne'ohe, O'ahu, Hawai'i

Table 3.1 Identification of Previously Identified Historic Sites					
SIHP No. 50-80-10	Formal Site Type	Associated Features	Probable Function	Approx. Age	Description
Historic Sites Within Petition Area					
-354	Enclosure, platforms, terraces	2+	Ceremonial	Pre-contact	Kawa'ewa'e Heiau consists of one large enclosure with a small terrace on the north side that follows the contours of the land.
-4680	Terrace	1	Agricultural/ water control	Historic	Historic erosion control and water diversion terrace.
-4683	Pit feature	1	Charcoal kiln	Historic	A rectangular pit and natural terracing.
-4684	Complex-enclosure & terracing	7	Habitation	Pre-contact	Habitation site with several c-shaped structures, a terrace wall, a circular rock feature, and several house terraces.
-6930	Stone enclosure	1	Ceremonial	Pre-contact	A rectangular shaped stone enclosure with an irregular notch.
-6931	Stone alignments	2+	Ceremonial	Pre-contact	Possible ceremonial area on a natural knoll between two intermittent drainages with a series of stone alignments.
-6932	Stone storage	1	Storage	Historic	A storage area dug out beneath a basalt boulder and lined with smaller stones.
-6933	Pit feature w/ stone wall	2	Charcoal kiln	Historic	Large circular pit with burned walls. Cut into a natural rise, it includes a faced, course stone wall on the northeast side.
Historic Sites in Vicinity of Petition Area					
-4681	Complex-enclosures & terracing	5	Agricultural/ habitation	Pre-contact	Habitation site with of several c-shaped structures, a terrace wall, and a circular rock feature.
-4686	Stone alignment	2	Boundary marker	Historic	Feature A is a rock boulder alignment parallel to a large stream cut. Feature B is badly disturbed.
-6929	Quarry	2	Raw material procurement	Pre-contact	Located along an intermittent drainage, has two concentrations of lithic debitage amid basalt cobbles.

The previous Final EIS for the HMP project recommended preservation in the form of avoidance for sites -354, -4684, and -6930 that are within the Petition Area. No further work was recommended for sites -4680, -4683, -6932, and -6933. The project would not impact these sites or recommendations because they will be included within the Cultural Preserve. Site -4680 within the Petition Area would be left undisturbed.

A supplemental archaeological inventory survey will be conducted to: 1) field truth previously identified sites; 2) update their condition; 3) re-assess the description of the heiau; and 4) conduct additional test excavations. The results from this supplemental study will provide further documentation of existing historic sites so that potential impacts can be addressed, and necessary mitigative measures identified, if warranted.

A Cultural Impact Assessment will also be prepared to assess potential impacts to traditional cultural practices as a result of the project. The study will include interviews with lineal and cultural descendants along with other groups or individuals with ties to the property.

3.10 AIR QUALITY

Federal ambient air quality standards (AAQS) have been established by the U.S. Environmental Protection Agency (EPA) for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), ozone (O₃), and concentrations of particulate matter less than 10 microns (PM₁₀) and 2.5 microns (PM_{2.5}). The State of Hawai'i has established ambient air quality standards for these pollutants that are somewhat more stringent than Federal standards under Title 11, Chapter 60.1 HAR.

Air quality in the project area is primarily affected by vehicular carbon monoxide (CO) emissions, and to a lesser extent by nearby residential, commercial, and industrial uses. Carbon monoxide (CO) emissions in the HMP project vicinity are generated predominantly by vehicles travelling along Kamehameha Highway, Mokulele Drive, and the H-3 Freeway interchange with Kamehameha Highway. The H-3 Freeway is routed further away from HMP, and the hillside separates any CO effects from HMP. Minor streets in the project vicinity serving nearby residences should have minimal effect on CO emissions due to the low volume of daily traffic on those roads.

Dominant northeasterly tradewinds likely push vehicular emissions along the major roadways away from the HMP area and Petition Area. This also applies to commercial uses that are already predominantly located north and northeast of HMP. Some industrial emissions are generated from activities occurring at Kapa'a Quarry.

Potential Project Impacts

The project should not have significant long-term impacts on air quality in the project area because it only consists of expansion of the existing HMP cemetery. Activities occurring within project area would not generate concentrations of pollutants that may exceed state or federal standards. Vehicles of family members and guests visiting burial sites would be low on a daily basis and will not generate concerns with CO emissions.

Construction activities would cause some short-term effects such as emissions of particulate matter and CO from grading activities and equipment. However, these emissions are not expected to be significant or cause exceedances of state or federal standards. The Draft EIS will address best management practices that could be implemented to minimize these short-term effects.

3.11 NOISE

A variety of activities and land uses surrounding the project area are currently sources of ambient noise. Minimal noise is generated on the eastern half of the Petition Area and HMP because areas are undeveloped associated with the adjacent ridge and hillside. Vehicular traffic along Kamehameha Highway and Mokulele Drive are currently the primary generator of noise in the area. Other noise generators would be activities occurring at residences (e.g. voices, television, sound systems, etc.) in the vicinity of the Petition Area. Present noise generated from activities occurring within HMP would primarily be attributable to activities associated with excavation of grave sites and voices of individuals visiting the site.

Potential Project Impacts

The project should not have significant long-term impacts on noise in the project area. Activities occurring within the expanded cemetery would not generate significant noise impacts. Noise sources would continue to be attributable to gravesite excavations and human voices from visitors.

Construction activities would cause some short-term noise effects from grading activities, roadway construction, etc. along with equipment being used. Noise from construction activities is regulated under Title 11, Chapter 46 (Community Noise Control) of the State DOH's Administrative Rules (State of Hawai'i, 1996). Construction activities are expected to be limited to regular workday hours (7:30 a.m. to 4:30 p.m., Monday through Friday). If necessary, a community noise permit for construction activities would be obtained from the State DOH. The Draft EIS will address existing and probable noise impacts from the project in greater detail.

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CHAPTER 4 SOCIAL AND ECONOMIC CHARACTERISTICS

4.1 POPULATION AND HOUSING

Information from the U.S. Census American Community Survey (ACS) 2015 data was examined to understand the social characteristics of the project area. This ACS data also includes information on employment and income. The HMP site is located within the Kāneʻohe census designated place (CDP). This CDP generally includes several individual census tracts consisting of 105, 106, and 107.

The Kāneʻohe CDP represents the entire Kāneʻohe district extending from the H-3 Freeway northwest to the Haiku Road area near Windward Mall. This CDP is a diverse, urbanized, predominantly residential community. The CDP serves as a baseline of comparison for project area demographic characteristics. Demographic characteristics of the Kāneʻohe CDP compared to the City and County of Honolulu (Honolulu County) CDP as a whole are shown in Table 3.2.

ACS data indicates that the Kāneʻohe CDP had a population of about 33,650 persons comprising about 3.4% of Honolulu's population. The median age of individuals living in Kāneʻohe is 41.9 years which is comparatively higher than Honolulu's median age of 36.9 years. This pattern is also reflected in the slightly higher percentage of persons 65 years and older living in Kāneʻohe (19.3% compared to 15.4%).

The largest ethnic composition for Kāneʻohe's population are Asian (36.2%), then two or more races (31.7%), and then White (23.1%). Native Hawaiian or other Pacific Islander residents comprise about 6.8% of the population. Compared to the island totals, Kāneʻohe has a lower percentage of Asians (6.4% less) and native Hawaiian (2.4% less), but notably higher percentage of persons with ancestry of two or more races (9% higher).

The Kāneʻohe CDP contains about 10,700 households, and has a high percentage (78.2%) of family households (with children under 18 years of age). The percentage of family households is notably higher than Honolulu County (7.8% higher) reflecting Kāneʻohe's residential community character. The percentage of owner-occupied (owned) housing units in Kāneʻohe (69%) is also significantly higher than the island's average of 54.4%.

Table 3.2 Comparison of Kāneʻohe with Honolulu County Community Demographic Data (2015)				
Description of Demographic Data	Kaneohe CDPs 2015		Honolulu County 2015	
	Number	Percent	Number	Percent
POPULATION	33,654		984,178	
AGE				
Under 5 Years	1,904	5.7	64,478	6.6
5 To 17 Years	4,294	12.7	149,282	15.2
18 To 64 Years	20,958	62.3	618,088	62.8
65 Years And Older	6,498	19.3	152,330	15.4
Median Age	41.9		36.9	
RACE				
White	7,778	23.1	213,878	21.7
Black or African American	329	1.0	25,901	2.6
American Indian and Alaska Native	49	0.1	1,685	0.2
Asian	12,187	36.2	419,451	42.6
Native Hawaiian or Other Pacific Islander	2,284	6.8	90,740	9.2
Some Other Race	361	1.1	9,009	0.9
Two or More Races	10,666	31.7	223,514	22.7
HOUSEHOLDS	10,698		309,602	
Family Households	8,370	78.2	217,945	70.4
Non-Family Households	2,328	21.8	91,657	29.6
Average Owner Household Size	3.24		3.25	
Average Renter Household Size	2.73		2.83	
HOUSING OCCUPANCY AND TENURE				
Total Housing Units	11,199		341,239	
Occupied Housing Units	10,698	95.5	309,602	90.7
Occupied Housing Units	10,698		309,602	
Owner-Occupied Housing Units	7,384	69.0	168,551	54.4
Renter-Occupied Housing Units	3,314	31.0	141,051	45.6
EMPLOYMENT STATUS				
Population 16 Years And Older	28,180		792,760	
In Labor Force	18,502	65.7	523,197	66.0
Not In Labor Force	9,678	34.3	269,563	34.0
INCOME				
Total Households	10,698		309,602	
Less than \$10,000	265	2.5	15,354	5.0
\$10,000 to \$49,999	2,297	21.4	83,758	27.0
\$50,000 to \$99,999	3,879	36.3	101,207	32.7
\$100,000 or More	4,257	39.8	109,283	35.3
Median Household Income	\$84,626		\$74,460	
Source: U.S. Census Bureau, ACS 2014				

Potential Project Impact

The project should not have a significant impact on the residential population, housing conditions, or demographic character of Kāneʻohe. The project does not include additional housing or visitor units, and would not change the current or future residential population of the district.

Expansion of the cemetery should also not change the character of Kāneʻohe's community. Surrounding residential areas should not experience a significant change in their character. The expanded cemetery would create a different landscape from one that is currently undeveloped and overgrown with vegetation to one that is landscaped with grass and maintained. However, the activities occurring at the Petition Area would continue to be passive use of the area as a cemetery. This project has generated concerns from the community when initially proposed in 2008. Current project plans have changed significantly, including the elimination of residential lots previously proposed, but may continue to generate concerns from some residents. The Draft EIS will address probable effects in greater detail.

4.2 EMPLOYMENT AND HOUSEHOLD INCOME

The 2015 U.S. Census ACS data indicates that the Kāneʻohe district has a similar percentage of the population employed in the island's labor force with both being about 66%. Kāneʻohe's median household income of \$84,626 is also notably higher (about 14%) than Honolulu County's average of \$74,460 reflecting a more affluent community. This is also reflected in the higher percentages of households with incomes of \$50,000 and up compared to Honolulu County.

Potential Project Impact

The project would generate some short-term construction related jobs as site preparation and infrastructure improvements are implemented and phased over time. A few additional new full-time jobs may be created at HMP by the expansion of the cemetery to support operations and maintenance. Therefore, the project should have minimal impact on employment and household income within the Kāneʻohe district. Fiscal impacts from the project would also be minimal. The Draft EIS would address the probable effects in greater detail.

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