

BEFORE THE LAND USE COMMISSION LAND USE COMMISSION  
STATE OF HAWAII

OF THE STATE OF HAWAII

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In the Matter of the Petition of	)	DOCKET NO. A17-804
	)	
HAWAIIAN MEMORIAL LIFE PLAN, LTD.	)	HAWAIIAN MEMORIAL LIFE
	)	PLAN, LTD.
To Amend The Conservation Land Use	)	
District Boundary Into The Urban Land Use	)	
District For Approximately 53.449 Acres Of	)	
Land At Kāneʻohe, Island of Oahu, State of	)	
Hawaiʻi, Tax Map Key: (1) 4-5-033: por. 001	)	
_____	)	

**PETITIONER'S PROPOSED FINDINGS OF FACT,  
CONCLUSIONS OF LAW, AND DECISION AND ORDER  
FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT**

**AND**

**CERTIFICATE OF SERVICE**

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HAWAIIAN MEMORIAL LIFE  
PLAN, LTD.

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FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT**

Comes now, Petitioner HAWAIIAN MEMORIAL LIFE PLAN, LTD.

("Petitioner"), by and through its attorneys, MATSUBARA, KOTAKE & TABATA, and hereby submits Petitioner's Proposed Findings of Fact, Conclusions of Law, and Decision and Order for a State Land Use District Boundary Amendment ("Petitioner's Proposed Decision and Order").

Petitioner's Proposed Decision and Order is as follows:

**FINDINGS OF FACT, CONCLUSIONS OF LAW,  
AND DECISION AND ORDER FOR A STATE  
LAND USE DISTRICT BOUNDARY AMENDMENT**

Petitioner HAWAIIAN MEMORIAL LIFE PLAN, LTD. filed a Petition for Land Use District Boundary Amendment on November 13, 2017 (the Petition as so amended is referred to as "Petition"), pursuant to Hawai'i Revised Statutes ("HRS") Section 205-

4, and Hawai'i Administrative Rules ("HAR") Chapter 15-15, to amend the land use district boundary to reclassify approximately 53.449 acres of land, situated at Kāne'ohe, Island of O'ahu, State of Hawai'i, Tax Map Key No. (1) 4-5-033: portion of 001 ("Property" or "Petition Area"), from the State Land Use Conservation District to the Urban District. The reclassification is necessary to allow for the expansion of the existing Hawaiian Memorial Park ("HMP") cemetery, the creation of a 14.5-acre cultural preserve, and the accommodation of internal roadways and open space ("Project").

The Land Use Commission ("Commission"), having heard and examined the testimony, evidence, and argument of counsel presented during the hearings, along with the pleadings filed herein, hereby makes the following Findings of Fact, Conclusions of Law, and Decision and Order.

## **I. PROCEDURAL MATTERS**

1. On November 13, 2017, the Commission received Petitioner's Petition for a Land Use District Boundary Amendment ("Petition"), Exhibits "1" through "5" of the Petition, including an Environmental Impact Statement Preparation Notice identified as Exhibit "5."

2. On November 13, 2017, the Commission also received Petitioner's Motion to designate the Land Use Commission as the Approving Agency for the Environmental Impact Statement ("EIS") prepared under Chapter 343, HRS and for authority to prepare an Environmental Impact Statement Preparation Notice ("EISPN").

3. On November 21, 2017, the Commission held its meeting to: 1) determine whether it would be the Accepting Authority under Chapter 343, HRS; 2) whether an EIS is likely to be required because the action may have a significant impact; and 3) authorize Petitioner to prepare an EISPN.

4. On November 30, 2017, the Commission issued its order determining that: 1) the Commission agrees to be the Accepting Authority pursuant to Chapter 343, HRS; and 2) that the proposed action may have a significant effect upon the environment warranting the preparation of an EISPN.

5. On August 30, 2018, the Petitioner simultaneously filed its Draft EIS ("DEIS") with the State Office of Environmental Quality Control ("OEQC") and the Commission for publication in the September 8, 2018 issue of *The Environmental Notice*. This publication began a 45-day public comment period that ended on October 23, 2018.

6. On April 1, 2019, the Petitioner simultaneously filed its Final EIS ("FEIS") with the State OEQC and the Commission for publication in the next issue of *The Environmental Notice*. This began a 30-day period for public review and LUC action.

7. On April 23, 2019, the Commission held its meeting to consider acceptance of the Petitioner's FEIS. The Commission accepted the FEIS pursuant to Chapter 343, HRS and Chapter 11-200, HAR. On April 26, 2019, the LUC entered its Findings of Fact, Conclusions of Law, and Decision and Order Accepting Petitioner's Final Environmental Impact Statement.

8. On May 10, 2019, the Petitioner filed a first amendment to Petition.
9. On June 19, 2019, the Petitioner filed a second amendment to the Petition.
10. On July 16, 2019, the Commission deemed the Petition to be a proper filing pursuant to HAR Section 15-15-50.
11. On October 10, 2019, the Commission received a Petition to Intervene by the Hui O Pikoiloa.
12. On November 21, 2019, the Commission held its meeting and granted the Petition to Intervene, and later issued their order on December 13, 2019. A site visit of the Petition Area was also conducted by the Commission after their meeting.
13. On December 3, 2019, the Commission issued its Pre-Hearing Order.
14. On December 9, 2019, the Commission received Petitioner's List of Witnesses and Exhibits.
15. On December 9, 2019, the Commission received the State Office of Planning's ("OP") List of Witnesses and List of Exhibits.
16. On December 9, 2019, the Commission received the Department of Planning and Permitting, City and County of Honolulu's ("DPP") Position Statement and Witness List.
17. On December 9, 2019, the Commission received the Intervenor's Position Statement, Witness List, Exhibit List, and Exhibits.

18. On December 23, 2019, the Commission received Petitioner's First Amended List of Exhibits and Exhibits.
19. On December 23, 2019, the Commission received the OP's Testimony in Support of Petition with Conditions, First Amended Exhibit List and Exhibits.
20. On December 23, 2019, the Commission received the DPP's Written Testimony of Kathy Sokugawa and Exhibit.
21. On December 23, 2019, the Commission received the Intervenor's Witness List and Written Direct Testimony.
22. On January 6, 2020, the Commission received Petitioner's List of Rebuttal Witnesses and Exhibits.
23. On January 6, 2020, the Commission received the Intervenor's Rebuttal Revised Witness Testimony.
24. On January 22, 2020, the Commission received the OP's First Amended List of Exhibits.
25. On January 22, 2020, the Commission held its meeting in Kāne'ohe, O'ahu on the Petition and received public testimony. Public testimony was closed during this meeting and the Commission started holding the evidentiary hearing.
26. On May 6, 2020, the Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic, approving an extension of time for decision-making on this Petition for 90 days to October 14, 2020.

27. On May 6, 2020, the Commission received the Petitioner's Supplemental List of Exhibits and Exhibits.

28. On June 3, 2020, the Commission received the State OP's Second Amended List of Exhibits and Exhibits.

29. On June 8, 2020, the Commission received Petitioner's Second Supplemental List of Exhibits and Exhibit.

30. On June 9, 2020, Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic and continued the evidentiary hearing.

31. On June 10, 2020, Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic and continued the evidentiary hearing.

32. On June 19, 2020, the Commission received Petitioner's First Amended List of Witnesses and Third Supplemental List of Exhibits.

33. On June 24, 2020, Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic and continued the evidentiary hearing.

34. On July 22, 2020, Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic and continued the evidentiary hearing.

35. On August 12, 2020, Commission held an online meeting using interactive conference technology due to the COVID-19 pandemic and continued the evidentiary hearing. The evidentiary hearing was closed on August 12, 2020.

## **II. FINDINGS OF FACT**

### **A. Description of the Petition Area**

36. The Petition Area is approximately 53.449 acres in size and is within a portion of a larger 164.4-acre parcel owned by the Petitioner. The Petition Area includes a portion of a bluff that is presently undeveloped but was previous used within the last 50 to 75 years for grazing, dairy farming activities, and possibly agriculture (pineapple cultivation). [Pet. Ex. 6, p. 1-8]

37. The entire 164.4-acre property is comprised of: 1) Petition Area; 2) existing Ocean View Garden portion of the Hawaiian Memorial Park cemetery; and 3) undeveloped open space. HMP's existing Ocean View Garden cemetery site of 7.9 acres is located adjacent to the Petition Area on the northwest end. The third area consists of undeveloped land east of (mauka of) the Petition Area, south of (makai of) the cemetery expansion serving as a buffer to residences, and undeveloped area northeast of the Petition Area. [Pet. Ex. 6, Fig. 1.2, p. 1-8]

38. The Petition Area, along with most of the 164.4-acre property is located within the State Land Use Conservation District. The 7.9-acre Ocean View Garden portion of this property is within the State Urban District. [Pet. Ex. 6, Fig. 6.1, p. 6-2] Of



the five subzones within the Conservation District, the Petition Area is within both the General (76%) and Limited (24%) Subzones. [Pet. Ex. 6, Fig. 6.2, p. 6-3]

39. The Petition Area is generally located on the western flank of the Oneawa Hills, consisting of an elongated landform (northeast to southwest) that forms the geographic boundary between Kāne'ohe and Kailua. The Petition Area is situated on the lower elevation of the Oneawa Hills, and generally encompasses a topographic knoll and adjacent lowland basin area at the foot of the hillside. At its core, Oneawa Hills is composed of massive basaltic caldera-filling lava rock containing some basaltic breccia rock. Rock material comprising Oneawa Hills belongs to the Kailua member of the Ko'olau Volcanic Series and are generally highly to completely weathered at the ground surface. This rock material may also contain buried zones of deeply decomposed rock. [Pet. Ex. 6, p. 3-2]

40. The Petition Area generally slopes in a northwest direction from the hillside toward the Pikoilua subdivision. Site elevations range from 180 feet above mean sea level (AMSL) to 420 feet AMSL. The basin area in the eastern portion of the site has an average slope of 25% to 30% with various smaller ridgelines and valleys found throughout this area. Slope conditions at upland areas in the western portion of the site have steeper slopes with some areas of 90%. [Pet. Ex. 6, p. 3-3]

41. The Petition Area is identified Tax Map Key (1) 4-5-033: por. 001 and is owned by the Petitioner in fee simple. [Pet. Ex. 3 and 4]

42. South of the Petition Area is the existing HMP area and the Hawai'i State Veterans Cemetery. [Pet. Ex. 1]

43. The surrounding area to the east includes undeveloped areas associated with the adjacent Oneawa hillside. Immediately northwest and west of the Petition Area are the Pikoiloa subdivision and Pohai Nani Retirement Community. [Pet. Ex. 6, Fig. 1.2, p. 1-8]

44. Major highways providing vehicular access in the vicinity are the H-3 Freeway to the east and Kamehameha Highway (State Route 83) bordering the southern side of HMP. Kamehameha Highway is a four-lane divided State highway generally running in a north-south direction in the vicinity of HMP connecting the communities of Kailua and Kāne'ohe. This highway provides vehicular access into and out of the existing HMP at two unsignalized driveways, and later intersects with the H-3 Freeway to the southeast. The two HMP driveways are located across from Kamehameha Highway's intersections with Halekou Road and Mahinui Road. [Pet. Ex. 6, p. 1-9]

45. Kāne'ohe Bay Drive (State Route 65) is located about 0.7 miles north of HMP, and generally runs in an east-west direction providing access within the Kāne'ohe community. Kāne'ohe Bay Drive is a four-lane thoroughfare at its intersection with Kamehameha Highway, and later changes to a two-lane roadway northeast of Castle High School. Mokulele Drive is a City street located further north of HMP that generally runs in a northeast to southwest direction. This two-lane minor street serves

the surrounding residences of the Pikoiloa subdivision and other subdivisions west of HMP. [Pet. Ex. 6, p. 1-9]

**B. Proposal for Reclassification**

46. The Project includes: 1) the 27.5-acre expansion of the existing HMP cemetery; 2) creation of a 14.5-acre cultural preserve; 3) 11.45 acres of buffer, open space and internal roadways; and 4) a proposed 156.5 acre conservation easement. [Pet. Ex. 6, Fig. 2.2, p. 2-23 and Pet. Ex. 54]

47. The 27.5 acres of cemetery expansion reflects a reduction of 0.7 acres from the 28.2 acres initially proposed for the cemetery expansion. This 0.7-acre reduction in cemetery space will serve as an additional buffer from the seep and habitat for the Hawaiian Blackline damselfly, which is situated in the northwest corner of the Petition Area. [Pet. Ex. 54, Updated Project Site Plan (May 2020)]

48. Cemetery expansion would involve construction of landscaped areas for burial space. 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. There are no mausoleum buildings proposed within this expansion area. After grading to establish appropriate slopes, most of the land would be landscaped with turf and match the appearance of the existing cemetery. [Pet. Ex. 6, Fig. 2.2, p. 2-23]

49. Construction of a new road system with a cul-de-sac at the end would provide access within the future cemetery expansion. A new roadway connection from the Ocean View Garden would provide vehicle access to the expansion area. The access roads would be designed to be similar in appearance to existing roadways throughout HMP. Roadway slopes would vary throughout the site but are not intended to exceed a grade of 20%. [Pet. Ex. 6, p. 2-32]

50. The 14.5-acre Cultural Preserve would allow for cultural practices along with the restoration, preservation, management, and maintenance of cultural sites present within this area. The proposed preserve, which is the site of wahi pana (storied places or landscapes), contains a range of significant resources within its boundaries, including, but not limited to Kawa'ewa'e Heiau, other historic sites, plants used for cultural practices. [Pet. Ex. 6, p. 2-47]

51. Cultural practitioners would have vehicular access to an entrance to the Cultural Preserve via the main entrance through HMP, and pedestrian access from a grassed or other designated pedestrian path planned to extend from the expanded cemetery's internal roads. [Pet. Ex. 6, p. 2-48]

52. A preservation plan would be developed by the Petitioner in partnership with the Ko'olaupoko Hawaiian Civic Club, or other Native Hawaiian Organization operating in Ko'olaupoko, addressing stewardship and management of the Cultural Preserve. The preservation plan would determine the best treatment strategies for

resources within the Cultural Preserve, the preserve's management, its operation, and would ensure the long-term maintenance and security of Kawa'ewa'e Heiau. [Pet. Ex. 6, p. 2-48] [Transcript June 24, 2020 page 66:line 1-page 67:line 3 ("Tr. 6/24/20 66:1-67:3")]

53. Consideration of native Hawaiian burials is also planned to be incorporated into the Cultural Preserve as part of the preservation or management plan. An area within the Cultural Preserve is intended for use for new burials following traditional native Hawaiian protocols. [Pet. Ex. 6, p. 2-48]

54. The proposed conservation easement will encompass 156.5 acres of the 164.4-acre parcel (less 7.9-acre Ocean View Garden). The conservation easement would be a legal agreement between the Petitioner and an accredited land trust which permanently limits uses of the undeveloped land in order to protect conservation values and ensure that no future development would occur except for the cemetery expansion and cultural preserve. The process of negotiating and establishing the conservation easement would commence after the Project is fully entitled. [Pet. Ex. 6, p. 2-49] [Tr. 8/12/20 126:15-126:24]

55. Preliminary grading plans provide for retaining walls, cut/fill slopes, and subdrains. 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 and filling would occur within the eastern end. A preliminary grading plan shows general areas of

proposed cut and fill activities. Refinements to this grading plan would be determined during the project's design phase. [Pet. Ex. 6, Fig. 2.3, p. 2-27] [Pet. Ex. 32]

56. The majority of the hillside on the western end of the expansion site would be excavated up to 40 feet in height; however, the areas near the top of the hillside would be reduced by up to 100 feet in height. A smaller ridge line below this hillside in the area generally between Līpalu Street and 'Ōhāhā Place would also be excavated. Excavations would extend up to 60 feet for this smaller ridge. Excess soil from excavation activities would be used to fill the lower portions of the basin areas within the cemetery expansion site. Areas proposed for fill are generally below the current hillside and include most of the eastern half of the cemetery expansion site. Most fill activities would increase the existing height of the topography less than 20 feet; however, one section would fill up to 40 feet in height. [Pet. Ex. 6, Fig. 2.4, p. 2-29] [Pet. Ex. 32]

57. The estimated area of disturbance for earth moving activities is about 33.6 acres. Estimated excavation and embankment quantities are: 1) 470,960 cubic yards of excavation; 2) 413,673 cubic yards of embankment; and 3) 57,287 cubic yards of cut. [Pet. Ex. 6, p. 2-31]

58. Excess soil material not used as fill within the cemetery expansion will be reused and recycled as much as possible and as practicable as it is in the projects best interest from a cost, quality and schedule perspective to do so. This is achievable

because excess soil generated by the project is a resource for other construction projects which desire fill material as well as for landfill management. [Pet. Ex. 64]

59. Portions of the areas above (mauka) and outside of the cemetery expansion and within the upper reaches of the Cultural Preserve may be exposed to potential rockfall hazard from the adjacent steep mountain slopes. The presence of rock deposits and their depositional characteristics suggest evidence of significant older rockfall events that deposited the rocks within these areas. [Pet. Ex. 34, p. 2]

60. The central area of the cemetery expansion has low to moderate potential for rockfall encroachment as shown on Exhibit 1. [Pet. Ex. 34, Exhibit 1, p. 5] Lower rockfall encroachment risk is anticipated due to the reduced number and size of existing rock outcroppings encountered within the "PRSA-2" area located upslope. The potential rockfall source area also appears to have a lower density of rock outcroppings and less extensive reach in terms of elevation span on the hillside. There is no area of potential rockfall encroachment identified for the western end of the cemetery expansion. [Pet. Ex. 34, p. 2]

61. The greater risk for potential rockfall encroachment involves the upslope area of the Cultural Preserve. This risk is due to the large quantity and size of existing boulder deposits encountered on lower elevation slopes within the Cultural Preserve. There also appears to be a more frequent occurrence of widely scattered large-block, high relief, massive rock outcroppings within an area above the Cultural Preserve that

could represent potential rockfall source material identified as "PRSA-1". [Pet. Ex. 34, Exhibit 1, p. 5] However, the Cultural Preserve's boundary alignment with respect to topographic conditions aids the natural containment of rockfall within the area boundaries. [Pet. Ex. 34, p. 2-3]

62. The Colorado Rockfall Simulation Program (CRSP) was used to evaluate potential rockfall activity in the Petition Area. Slope profiles developed evaluate the statistical probability of potential encroachment from upslope areas. If the statistical probability of rockfall encroachment is 10% or less, a hazardous rockfall condition is considered a remote risk and protective measures may not be warranted. Rockfall protection is recommended for locations where the probability of encroachment exceeds 10% of total simulated rockfall. [Pet. Ex. 34, p. 2]

63. Model results indicate the center portion of the cemetery expansion area would have low to moderate risk for potential rockfall encroachment. Within the eastern portion of the cemetery expansion area, limited potential for rockfall encroachment is estimated. [Pet. Ex. 34]

64. A moderate risk of potential rockfall encroachment is estimated for a portion of the Cultural Preserve's mid to upper elevation basin and adjacent upper steep mountain slopes. However, no simulated rockfall was indicated to pass the area's mid-elevation analysis point. The Preserve is intended for cultural landscape restoration, maintenance of historic sites, and accommodation of some burials following



traditional native Hawaiian protocols within the lower areas. Therefore, site disturbance potentially contributing to increased rockfall hazards would not be significant and not occur where the rockfall disposition and source are located. [Pet. Ex. 34, p. 2]

65. No record or documentation of previous debris flow or landslide activity within the Petition Area is known, and no overt visible evidence of significant debris flow deposits or evidence of recent ground scour were observed. However, the potential for debris transmission via stormwater runoff should be considered due to the large area of steep forested slopes possessing appreciable forest litter debris on the ground surfaces. A rapid increase in discharge during storm conditions should be anticipated in the normally dry drainage channels. However, it appears that the existing natural flatter ground topography at the foot of steeper terrain combined with the existing dense vegetation growth could provide some natural buffering and reduced risk for debris laden runoff. [Pet. Ex. 34, p. 3-4]

66. Grading activities would result in removal of existing landslide and debris flow hazards in the cemetery expansion area. Landscaped grass areas created for burial spaces would be a significant improvement, removing existing vegetation litter debris and exposed soil and gravel/cobble talus. The modified topography would reduce steeper slopes and create gentler topographic conditions that would eliminate potential

landslide hazards. Therefore, the remaining potential for impacts on the cemetery from debris flow would be from upslope areas outside of the Petition Area. [Pet. Ex. 34, p. 4]

67. To minimize and mitigate effects from rockfall and landside debris, the following measures will occur.

1. Cultural Preserve. Rockfall hazard warning signage would be posted at appropriate entry locations to alert permitted visitors of the potential for falling rock hazards in the mauka portion of the area.
2. Cultural Preserve. Management would identify areas that are restricted or limited from general access (e.g. upper areas above 350-foot elevation) unless access is justified and can be included in a Preservation Plan developed.
3. Cemetery Expansion. Construct an approximately 1,000-linear foot concrete lined rockfall catchment ditch along the Petition Area boundary upslope of the central area of the cemetery expansion as generally shown on Exhibit 1. [Pet. Ex. 34, p. 5] A 5-foot deep "V" shaped catchment ditch would effectively contain and reduce rockfall encroachment to an acceptable level. This interceptor ditch with appropriate debris barriers (fence) and discharge outlets would also reduce the potential for runoff encroachment and landside debris along the upper boundary of the Petition Area.

4. Cemetery Expansion. Install chain link fencing along and upslope from the catchment ditch to reduce potential introduction of large quantities of organic debris into the ditch. If feasible, provide a 10-foot-wide vegetation free clear zone upslope from the ditch and encompassing the chain link fence.
5. Cemetery Expansion. Inspect periodically the rock catchment ditch with possible periodic clearing of accumulated debris to maintain the intended rock catchment capacity. [Pet. Ex. 34, p. 3-4]

68. During interviews for the Cultural Impact Assessment, none of the cultural practitioners identified any current use, known use, or desire to access the eastern portion of the Cultural Preserve, and management measures would make this area safer, and that the management measures would be sufficient to mitigate any potential injury that takes place in that area. [Tr. 6/24/20 61:9-63:3]

**C. Development Timetable**

69. Development of the Petition Area will be substantially completed within 10 years after the date of the Commission's approval. [Pet. Ex. 11 p. 37]

**D. HRS Chapter 343**

70. The Final EIS for the Project was approved and accepted by State LUC at their public hearing held on April 23, 2019. The Final EIS acceptance was published in

*The Environmental Notice* on May 8, 2019. The 45-day challenge period ended on June 23, 2019.

**E. Petitioner's Financial Capability to Undertake the Project**

71. The financial statements from Service Corporation International (SCI) for the Petitioner for the quarterly period ending March 31, 2019 reflected total assets of \$13,079,061,000, total liabilities of \$11,378,656,000 and total equity of \$1,700,405,000.

[Pet. Ex. 7]

72. The project would be financed by the cash flow of the Petitioner's parent company. Debt or financing would not be required to implement the project.

Development costs for the cemetery construction are estimated at \$29.3 million (in 2018 dollars). [Pet. Ex. 6, Table 2.9, p. 2-50]

**F. Need for the Proposed Development**

73. There is demand for an additional approximately 103,442 to 137,840 burial spaces (also referred to as "burial plots") needed on O'ahu through 2040. [Pet. Ex. 59]

74. There is a growing demand for more burial spaces on O'ahu through the year 2040 due to: 1) the island's growing population; 2) an increasing aging population; and 3) subsequent increasing mortality rate. The resident population of O'ahu has grown by nearly 60 percent over the past five decades, reaching over 995,500 persons in 2017. The population has also "aged" over the same period, with some 18 percent now being over age 65; up from 14 percent at the turn of the century. In the future, O'ahu's

population is projected to continue increasing annually to between approximately 1,086,700 to 1,142,400 persons by the year 2040. [Pet. Ex. 31, p. 3 - 4]

75. Hawai'i's resident population reflects an aging demographic characteristic with increasing numbers of persons over the age of 55; a trend reflecting the baby boomer generation moving into their 60s. The total of Hawai'i residents that are 55+ years of age is projected to increase from 19.8% of the population in 1990 to 33.8% by the year 2040. The population cohorts for ages 70+ are even more dramatic, projected to grow from 7.2% of the population in 1990 to 18.9% by 2040. [Pet. Ex. 6, p. 2-3] The historic number of deaths on O'ahu has steadily increased over the years corresponding to the growing population and increasing aging demographic. The mortality rate has escalated (a death rate of 0.8 percent annually), and the number of annual deaths on island has increased to about 8,000 persons in 2017. [Pet. Ex. 31, p. 3]

76. The future death rates through 2040 are forecast under a minimum and maximum scenario. The minimum forecast is there would be a cumulative total of about 225,700 deaths among O'ahu residents between 2018 and 2040 while the maximum forecasts about 245,130 deaths (8.6% increase). Therefore, between about 11,700 and 12,860 annual deaths are projected on O'ahu by 2040. This would be over twice as many deaths that occurred in the year 2000 (5,700 deaths), and over 46% greater than that occurring in 2017 (8,000 deaths). [Pet. Ex. 31, p. 4]

77. Disposition of Deaths. There are five standard statistical classifications of “methods of disposition” for a body following death:

- a. Burial – The action or practice of interring a body in a grave.
- b. Cremation – The final disposition of a body by burning it to ashes (Cremated Remains). Cremated Remains can be placed in a burial space/plot.
- c. Removal – The body is shipped out of the State of Hawai’i.
- d. Medical Science – The body is donated for medical research.
- e. All Others – Entombment and alternative disposition methods.

Burial requires a casket, as typically does an entombment, while cremated remains are placed in urns. Interment is the act of memorializing a person following death and placing their remains in a permanent “resting place.” Interment can be via:

- a. Burial Plots. Contains one or more caskets and/or several urns.
- b. Niches. Above-ground spaces for urns within a “columbarium” or other specially built structure.
- c. Crypts. Specially built mausoleum structures that are generally above ground in Hawai’i with spaces for bodies/caskets.

The total number of potential individuals that can be interred in a cemetery plot can vary in accordance with the wishes of the family, and the size, scope and rules of the facility. The number of caskets and/or urns permitted in a plot differs between

cemeteries, as does the number and size of columbarium or niche structures. Generally, most cemeteries on O'ahu, including the existing HMP, can create about 1,000 to 1,100 burial spaces per developed acre. [Pet. Ex. 6, p. 2-6]

78. HMP currently serves as the final resting place for over 41,000 persons, and accommodates an average of about 700 interments a year from families throughout Hawai'i. HMP is responsible for about 25% of all burials occurring in the state. In the past, HMP has met the demand for additional burial space by increasing the land area available for burials within its owned property. However, HMP only has a limited number of burial sites remaining (4,500 plots), and there is a significant need for additional cemetery space to accommodate the State's aging population. [Pet. Ex. 31] [Tr. 6/9/20 121:9-121:25] Even with other cemeteries on O'ahu being available, projections indicate a future shortfall of demand for about 40,000 to 60,800 burial plots by 2040. The 30,000 additional burial plots that could be developed as part of HMP's proposed project are needed to address the anticipated burial space shortage. [Pet. Ex. 6, p. 2-11]

79. There is a need for a Cultural Preserve to support traditional native Hawaiian cultural practices within the Petition Area and larger Parcel 1 property largely due to the presence of Kawa'ewa'e Heiau that is a significant historic site listed in the National Register of Historic Places. Kawa'ewa'e Heiau currently requires extensive clearing given the widespread growth of invasive flora, along with other

landscape restoration and maintenance. [Pet. Ex. 6, p. 2-19] Members of the Ko'olaupoko Hawaiian Civic Club and other community members have served as caretakers of this heiau and the surrounding area to the extent possible. Improving access to and within this area is needed to support these efforts, which requires clearing trees, etc. Other historic sites in the vicinity would also be included as part of cultural landscape restoration efforts. Other cultural practices also occur in the vicinity, such as collecting plants for hula-related activities and other plants with traditional medicinal value. [Pet. Ex. 43, p. 3] The Cultural Preserve's 14.5-acre site would include a preservation plan to guide and regulate cultural activities, access, management responsibilities, and coordination responsibilities with the Petitioner. [Pet. Ex. 6, p. 2-20]

80. Cultural organizations and practitioners have also expressed a desire to conduct traditional native Hawaiian burials in the Cultural Preserve. [Pet. Ex. 43, p. 3] The adoption of the "clean burial" law by the Hawai'i legislature in 2015 (Act 171) recognized and allows for the preparation of a deceased person for burial in a manner consistent with traditional native Hawaiian cultural customs and such burials are intended within the Cultural Preserve. [Pet. Ex. 6, p. 2-19]

81. The boundary amendment is necessary for the Cultural Preserve because cemeteries are not allowed within the State Conservation District. Disposition and Burial Permits would be applied for with the Department of Health and then recorded with the Petitioner as part of applicable state law and cemetery regulations. The



Cultural Preserve would further define boundaries where activities could occur supporting management efforts. [Pet. Ex. 6, p. 2-20]

82. There is a need to establish long-term stewardship responsibilities for the 156.5-acre property (excluding HMP's 7.9-acre existing Ocean View Garden site). Areas of the property outside of the Petition Area would remain undeveloped, but management and stewardship of this area is necessary for the future. Efforts are needed to prevent unauthorized use of the remaining areas because they can be accessed from surrounding properties. A conservation easement is proposed for the remaining 156.5 acres of this property to address long-term management and stewardship of the area. [Pet. Ex. 6, p. 2-20]

#### **G. Social and Economic Impacts**

##### **1. Social Impacts**

83. The project should have negligible, if any, effect on Kāne'ohe's existing or future projected demographic characteristics because it does not propose new residences or visitor units. The project would not change the City's long-term demographic projections for the Kāne'ohe community and the larger Windward district that reflect a low rate of growth. Similarly, the future demographic composition and characteristics (e.g. ethnicity, age) of residents would not be affected by the project. [Pet. Ex. 6, p. 4-58] There is not expected to be any in-migration to O'ahu as a direct result of the project. [Pet. Ex. 31, p. 8]

84. The project would not significantly change nor adversely impact the character of this Petition Area or the larger Kāne'ohe community. The visual characteristic of the Petition Area would change from an undeveloped and overgrown introduced forested area into a graded landscaped area for cemetery visitation. The expanded passive cemetery land use is identical and complementary to activities already occurring at HMP and the adjacent Hawai'i State Veterans Cemetery and thus compatible with the area. Cemetery expansion would provide a significant community benefit supporting continued heritage considerations for families with loved ones interred at HMP and the Veterans Cemetery. [Pet. Ex. 6, p. 4-58]

85. The proposed project would have no effect on military activities, operations or jobs occurring within the Marine Corps Base Hawaii Kaneohe Bay. The proposed project would have no effect on the visitor industry or businesses in Kāne'ohe associated with those activities. HMP is not a visitor attraction (as compared to the National Memorial Cemetery of the Pacific (Punchbowl), which is a site with national interest). Visitors to HMP would consist mainly of residents visiting gravesites of family members and relatives. [Pet. Ex. 6, p. 4-58] The proposed project would have minimal effect on commercial retail and industrial uses, or activities associated with those businesses. Improvements do not involve new industrial land uses or any new commercial retail uses (e.g. restaurants, coffee shops, etc.) that would compete with or negatively impact existing businesses in Kāne'ohe. [Pet. Ex. 6, p. 4-58]

86. Additional burial plots created by the proposed project would generate slightly more daily visits by family members which would take place over many years as it is developed, and more interments occur. This would indirectly have a small but beneficial effect for businesses in the area that support cemetery related activities, such as flower shops or restaurants and other eateries (e.g. fast food businesses). Cultural and restoration activities occurring at the Cultural Preserve would similarly involve participants that could visit and have a small but beneficial effect supporting businesses in Kāneʻohe. [Pet. Ex. 6, p. 4-59]

87. The project will have nominal to minor impacts on the socio-economic aspects of the surrounding community that relate to real estate issues. There are no neighboring uses on three sides of the HMP Expansion acreage property. The project will not meaningfully impact property values or real estate taxes of the northerly-abutting single-family homes that will have a buffer area from the cemetery expansion. Property values throughout Windward Oahu are largely driven by external, cyclical, economic factors within an existing (and expanding) cumulative mass, not by the expansion of a cemetery which has been in-place for decades. [Pet. Ex. 31, p. 8]

## **2. Economic and Fiscal Impacts**

88. The cemetery expansion of HMP will result in significant expenditures that would favorably impact Oʻahuʻs economy on both a direct and indirect basis. The project will allow current HMP employment levels and activities to continue at current

levels rather than winding-down as the remaining existing plots were sold and filled.

[Pet. Ex. 31, p. 7] The project will increase the level of capital investment and capital flow in the region, which would in turn contribute to and extend employment opportunities and the tax base as summarized below. [Pet. Ex. 18, p. 190-191]

1. The proposed project would create numerous construction, equipment operator, and specialty trade jobs, directly and indirectly.
2. Existing employment (administrative and service positions) at the HMP would be extended and marginally enhanced for several additional decades.
3. Cemetery expansion would proportionately increase the need for maintenance workers over time.
4. Short-term construction jobs, wages, and benefits would be generated for both on-site construction workers along with off-site worker servicing the construction effort.
5. Numerous local businesses would see significant profit opportunities arising for contracting companies involved in the project's construction, and for local businesses that supply a substantial portion of the materials needed in the effort.
6. The general island economy would benefit from the proposed project, as HMP's current and new employees would spend their discretionary

income in shops, restaurants, and service establishments throughout the island.

7. Indirectly, these wages, profits, and expenditures from the project moving through the regional economy would have a multiplier effect increasing the amount of capital flowing to the entire community.
8. Much of the direct and indirect spending would be re-directed to other island industries and would in turn be put back through the region's economic and tax structure. [Pet. Ex. 18, p. 190-191]

89. The project will bring in an estimated \$29.3 million of new, direct capital investment with significant unquantified indirect expenditures into the island's real estate market and generate \$141.7 million in total economic activity islandwide. It will contribute some \$5.9 million in annual economic activity on a stabilized basis thereafter. Construction work will directly create an estimated 73 "worker-years" of employment in the trades and supply businesses, with an estimated \$5.9 million in wages. [Pet. Ex. 31, p. 7]

90. Operational activities, through administration, sales/servicing, maintenance and landscaping, will create 625 worker-years of employment and wages and benefits of \$43.8 million. Once stabilized the project will create demand for 45 full-time employment (FTE) positions and annual wages of \$3.2 million. Secondary/off-site employment will total 233 worker-years with wages of \$13.1 million and a stabilized

FTE job-count of 15 with total wages of \$842,000 per year. [Pet. Ex. 31, p. 7] The ongoing management and maintenance economic activity will total \$115.9 million and average \$8.5 million per year on a stabilized basis. The base impact to O'ahu will be \$141 million and average \$9.3 million annually thereafter. Further, application of the State Department of Business and Economic Development and Tourism (DBEDT) Inter-County Input-Output Model results in significantly higher economic out-flow indicators from the project than those from CBRE's micro model. [Pet. Ex. 31, p. 8]

91. Public fiscal impacts are estimated on a per capita basis founded on a conservative assumption that each new person added to the O'ahu community is "responsible for" a similar tax cost/obligation as every other person on the island. There will be no new per capita costs from the project because it will not result in any new residents. [Pet. Ex. 31, p. 8]

92. The City presently receives about \$530 per year of real property taxes on the Petitioner's 164-acre property (Parcel 1), and this would not meaningfully change with the implementation of the proposed project. The City will receive an estimated \$500,000 in permit, license and other fees at the commencement of the project. The State will receive Gross Excise and Income taxes, secondary revenues, and impact fees of \$8.7 million and about \$402,380 per year thereafter. There will be no "new" or additional per capita costs incurred to either the State or City resulting from the project making their added revenues all marginal profits. [Pet. Ex. 31, p. 9]

## **H. Impacts Upon Resources of the Area**

### **1. Agricultural Resources**

93. The University of Hawai'i Land Study Bureau's (LSB) Detailed Land Classification-Island of Oahu, classifies soil by land type in which classifications are provided for an overall crop productivity rating, with and without irrigation. Overall LSB ratings range from A to E, with A representing the class of highest productivity and E the lowest. Petition Area lands are rated "D" and "E" indicating area lands are poorly suited for agricultural use. [Pet. Ex. 6, p. 4-69]

94. The State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH), established a classification system for identification of agriculturally important lands to the State of Hawai'i. Three classes of lands are established which are: 1) Prime, 2) Unique, and 3) Other. Lands not included under this system are "unclassified." A small corner of the northwest corner of the Petition Area is classified as "Prime Land." This area bordering existing residences is associated with the small basin where a well and seep are located. However, no improvements are planned for this corner site. These lands are best suited for production of a variety of crops. A section of the northeast portion of the Petition Area is classified as "Other Lands." This area includes the eastern end of the cemetery expansion and a large portion of the Cultural Preserve. Areas classified as Other Lands are important to Hawai'i agriculture, but exhibit properties such as seasonal wetness or a limited rooting

zone that render the Prime and Unique designation inapplicable. These lands can be farmed satisfactorily through proper management such as application of fertilizer inputs and soil amendments. The majority of the Petition Area was excluded from the ALISH classification process. These lands include the western and central portions of the Petition Area, and sections of the northern portion at low and high elevations, and the higher elevation lands of the Cultural Preserve. Lands were excluded from the ALISH classification process based on specific criteria for exclusion that were established. For example, lands with slopes in excess of 35% were not considered for classification. [Pet. Ex. 6, p. 4-69]

95. An outcome of Hawai'i's post-statehood shift from a plantation-based economy to one driven by tourism and Federal spending prompted concerns about how to best protect the state's agricultural lands and promote the viability of agriculture. These concerns led to the proposal and subsequent amendment of the Hawai'i State Constitution in 1978 to identify and designate Important Agricultural Lands (IAL). As a result, the State has the legal responsibility to promote agriculture and the conservation of Hawai'i's productive agricultural lands. The IAL designation is intended to identify a select class of farmland that would be used for long-term active agricultural production. This designation is a supplemental land use classification for a sub-set of high-quality farmland within the State Agricultural District. The IAL designation seeks to promote the economic viability of farming, and to make it possible for landowners to keep



agricultural lands active by granting landowners access to incentives and supportive measures that reduce the cost of farming. This ultimately leads to the long-term preservation and protection of productive agricultural lands. In 2005 and 2008, the State Legislature passed two bills that provided the framework for counties to identify IAL by establishing eight criteria to be used when reviewing land for IAL consideration and outlined the process used to evaluate agricultural land. The City DPP has identified land on O'ahu where the IAL designation is recommended. Once adopted, recommendations will be submitted to the State LUC for final approval and adoption. The Petition Area is not located in the State Agricultural District and is located within the State Conservation District. Therefore, the Petition Area is ineligible for consideration as IAL. [Pet. Ex. 6, p. 4-72]

## **2. Botanical Resources**

96. The Petition Area can be characterized as a Lowland Alien Wet Forest dominated by introduced plant species. Alteration of native plant habitat has been in place for some time with few native plant elements remaining. The area has been historically disturbed, being previously used for pineapple cultivation and dairy farming activities. None of the plant species observed in the Petition Area are threatened, endangered or a species of concern. A total of 109 plant species were observed within the survey area. Of this total, 91 (84%) are alien (introduced), seven (6%) are Polynesian introductions, eight (7%) are indigenous (native to the Hawaiian

Islands and elsewhere), and three (3%) are endemic (native to the Hawaiian Islands). A total of 10% are native species. [Pet. Ex. 39, p. 1-2]

97. Cemetery Expansion Area. This area is primarily populated by alien tree, vine, shrub, and grass species. Within open areas, groundcover consists mainly of fern species including Pala'ā (*Sphenomeris chinensis*) and introduced Laua'e (*Phymatosorus grossus*). The shallow well and seep downslope from the northwestern portion of the cemetery expansion area is dominated by introduced Laua'e and some vestiges of Kalo (*Colocasia esculenta*) plants scattered along seep banks or in pools. [Pet. Ex. 39, p. 2]

98. Eight indigenous species were observed infrequently in the area; 'Uhaloa (*Waltheria indica*), Hala (*Pandanus tectorius*), Pala'ā, Moa (*Psilotum nudum*), Palapalai (*Microlepia strigosa*), 'Ēkaha (*Asplenium nidus*), Pōpolo (*Solanum americanum*), and Kā'e'e or Sea Bean (*Mucuna gigantea*). Kā'e'e has robust populations, but are being smothered by other vine species, and several of the seed pods were observed to have insect damage. Endemic species identified include 'Ākia (*Wikstroemia oahuensis* var. *oahuensis*) and 'Ōhi'a Lehua (*Metrosideros polymorpha*) trees that were observed infrequently near the Ocean View Garden boundary and upper elevations on the ridgeline in the southwestern section of the Petition Area. [Pet. Ex. 39, p. 2]

99. Cultural Preserve Area. The area is overgrown, and Kawa'ewa'e Heiau itself mostly obscured with vegetation. Some plants growing within the heiau structure include Ti or Kī (*Cordyline terminalis*), Papaya (*Carica papaya*), and Spanish Needle

(*Bidens pilosa*). Two juvenile Koa (*Acacia koa*) trees were observed that appear to have been planted. The remainder of the Cultural Preserve area to the east is dominated by thickets of Christmas Berry, Java Plum, Guava, Basket Grass and an expansive and thick understory of introduced Laua'e fern. [Pet. Ex. 39, p. 2-3]

100. The project would alter the existing botanical characteristics within the cemetery expansion area as result of extensive grading activities. However, improvements would not impact Federal or State-listed threatened or endangered plant species or species of concern because none were observed within the Petition Area. The current Lowland Alien Wet Forest character dominated by introduced plant species would change to an open landscaped character consisting mainly of grass and landscaping plantings. The introduced fern Laua'e would be impacted by grading activities within the cemetery expansion area, but not within the Cultural Preserve. Native plant populations, including the Ōhi'a Lehua and Kā'e'e, would also be displaced due to grading activities. [Pet. Ex. 39, p. 3]

101. Fringe areas surrounding landscaped burial areas would likely become dominated by other existing surrounding vegetation and trees that are mainly introduced plant species. This would result in a similar condition to the buffer area surrounding Ocean View Garden. This would include areas that are left undeveloped or serve as vegetative buffers between residences or upslope areas. [Pet. Ex. 39, p. 3]

102. The Cultural Preserve is an appropriate location where native and Polynesian introduced plants displaced by cemetery expansion activities could be replanted, particularly in the area surrounding Kawa'ewa'e Heiau. Native plants used in cemetery expansion area landscaping would aid perpetuation of these extant taxa in the immediate area. The presence of plants, such as 'Ōhi'a Lehua, 'Ākia, and Laua'e, within the Cultural Preserve or cemetery area would support its use for cultural practices. Seeds and cuttings from these plants found on site could be collected and grown for these efforts. Laua'e could also be used to landscape the cemetery expansion area. [Pet. Ex. 39, p. 4] Mitigation measures are:

1. Seeds or cuttings from extant indigenous and endemic plants would be collected and grown to use in replanting efforts in and around the cemetery expansion area or within the Cultural Preserve.
2. The preservation plan to be developed for the Cultural Preserve would include landscaping guidance related to the preservation of the Petition Area's indigenous and endemic plant species.  
  
Landscaping guidance would use information resulting from the botanical survey to establish proper collection and replanting procedures. [Pet. Ex. 39, p. 4]

3. Prior to the issuance of a grading permit, the Petitioner shall submit a landscape plan and schedule of planting to the City Department of Planning and Permitting (DPP).

- a. Within the Petition Area, the loss of mature trees, defined as having a trunk diameter of six inches or greater, shall be replaced on a one-for-one basis, at a minimum, with preferably field stock trees that will have approximately similar size canopy coverage within a reasonable period of time.
- b. The locations of replacement trees are not limited to the Petition Area. [DPP Written Testimony of Kathy Sokugawa]

103. Wetland Determination. AECOS, Inc. conducted a wetland determination for the seep area located within the western portion of the Petition Area. A wetland data determination form was used to characterize the area just upslope of the incised channel near the seep. It is a location within the area selected as most likely to be a wetland based on topography. Hydrophytic vegetation, hydric soils, and wetland hydrology (the three criteria required to be considered a wetland) were absent in this area investigated for the presence of a wetland; therefore, it is not a wetland. [Pet. Ex. 37, p. 3]

104. There is a shallow well feature with a water level consistently above the sloped ground level on the downstream side of the well. The seep emerges from the

ground just downslope from the well. Flow from the seep has eroded a shallow and somewhat braided channel ("seep channel") extending downslope. Although wetland plants are rooted in a few short segments of the seep channel, the channel is best classified as a tributary rather than a wetland because: 1) plants cover less than 5% of the area; and 2) the channel has been carved by flowing water and physical indicators of flow are apparent in the channel. The seep channel has physical indicators of flow (i.e., bed and banks and ordinary high-water marks). [Pet. Ex. 37, p. 3]

### **3. Avian and Mammalian Resources**

105. A biological survey of the Petition Area was conducted by Rana Biological Consulting to evaluate impacts to avian and mammalian species. In summary, no avian or mammalian species currently proposed for listing or listed as threatened or endangered under either Federal or State endangered species statutes were identified within the Petition Area. There is no federally delineated Critical Habitat for any species within, or close to the Petition Area. [Pet. Ex. 38, p. 2]

106. Avian Survey Results. All avian species detected (227 individual birds of 19 species recorded) are alien to the Hawaiian Islands. Avian survey findings are consistent with habitats that are currently present within the Petition Area, which is dominated by alien plant species. The avian survey is consistent with a prior faunal survey conducted on the property in September 2006. [Pet. Ex. 38, p. 2]

107. The Pacific Golden-Plover (*Pluvialis fulva*) was detected as an incidental observation in the existing HMP cemetery area while transiting to the Petition Area. The Pacific Golden-Plover is a native, indigenous migratory species. This species is present in Hawai'i and the Tropical Pacific during fall and winter months and is widely distributed in the Hawaiian Islands. [Pet. Ex. 38, p. 2]

108. Although seabirds were not detected during this survey, several seabird species potentially overfly the site on occasion. These species include the Wedge-tailed Shearwater or 'Ua'u Kani (*Ardenna pacifica*), and the "threatened" Newell's Shearwater (*Puffinus newelli*). The state listed "endangered" White Tern (*Gygis alba*) is not listed under federal statute. This ephemeral species was not recorded during this survey, nor was it expected since the current resident population are found on the leeward side of the island concentrated in the Waikiki area. [Pet. Ex. 38, p. 3]

109. Pueo. No owl species were recorded during this survey. Two resident owl species on O'ahu are the introduced Barn Owl (*Tyto alba*) and the indigenous endemic sub-species of the Short-eared Owl (*Asio flammeus sandwichesis*), or Pueo. While both species are found on all the main Hawaiian Islands, Pueo have become increasingly scarce on O'ahu. The island's Pueo population is listed as an endangered species by the State of Hawai'i, but it is not listed under federal statute. [Pet. Ex. 38, p. 2]

110. Pueo forage in grasslands, agricultural fields and pastures, as well as upland forested areas. The majority of the Pueo population is found on the leeward side

of the island and on the North Shore. They are a ground nesting diurnal species and prefer to nest in tall grass (e.g. pastures and grasslands). The Petition Area's thick alien forest canopy does not provide suitable habitat for this species to forage or nest in. The numbers and density of mammalian predators on O'ahu makes it difficult for this species to successfully nest, except within protected areas with a strong mammalian predator control program in place. [Pet. Ex. 38, p. 2]

111. Mammalian Survey Results. All mammalian species detected are alien and deleterious to native ecosystems and their dependent organisms. These findings are consistent with the current habitat present with the Petition Area and existing land use. Three terrestrial mammalian species detected on site; Indian mongoose (*Herpestes auropunctatus*); feral pig (*Sus scrofa*) (rooting detected in the lower section of the cemetery expansion area); and dogs (*Canis familiaris*) heard barking from outside the Petition Area. It is likely that one or more of the four established alien Muridae species (rodents) found on O'ahu occur within the Petition Area. No endangered Hawaiian hoary bats were detected on site, but it is possible that this species may use resources within the Petition Area. [Pet. Ex. 38, p. 3]

112. The project should not significantly impact avian or mammalian species within the Petition Area as none of the species identified were listed or proposed for listing as endangered or threatened under federal or state endangered species statutes. Grading improvements for the cemetery expansion area would change the existing



forested landscape to an open grassed landscape. This landscape would have minimal impact to the alien avian species detected and would not be an attractive habitat for alien mammalian species identified. The grass landscape established could provide additional loafing and wintering habitat for Pacific Golden-Plover. [Pet. Ex. 38, p. 3] The project would not have outdoor lights that may impact protected seabird species that may occasionally overfly the Petition Area because: 1) no night-time construction is planned, and 2) no exterior lighting is planned as part of the cemetery expansion and Cultural Preserve. The cemetery would be closed at night. [Pet. Ex. 38, p. 4]

113. Although Hawaiian hoary bats were not detected, clearing large trees and shrubs and grubbing activities during the birthing and rearing season (June 1 through September 15) may impact these bats. To avoid and minimize potential impacts to Hawaiian hoary bats, the following measure would be implemented:

1. Avoid disturbance of woody vegetation taller than 15 feet (4.6 meters) during bat birthing and rearing season, which is between June 1st and September 15th. [Pet. Ex. 38, p. 4]

#### **4. Invertebrate Resources**

114. An invertebrate survey of the Petition Area was conducted by Dr. Steven Montgomery to evaluate impacts to endemic or indigenous terrestrial invertebrates. Field surveys were conducted on 12 separate days over a period of several months to

include dry and wet conditions and to ensure observation and collections during the day and night. [Pet. Ex. 35, p. 2]

115. Plant and invertebrate populations are interdependent, with the presence and condition of host plants and habitats serving as a means of measuring invertebrate health. The Petition Area has historically been used by humans for agriculture and ranching. Feral pigs are present and continue to degrade vegetation and understory plants by rooting, resulting in soil disturbance. These factors likely contribute to the limited number of native plants identified on site. The scarcity of native plants capable of serving as arthropod host sites explains why so few Hawaiian arthropods were found. [Pet. Ex. 35, p. 2]

116. The only federally listed endangered species observed was the pinapinao or Blackline Hawaiian Damselfly (*Megalagrion nigrohamatum nigrolineatum*). The remaining native and endemic Hawaiian invertebrates sighted are very widespread in distribution. Invertebrates endemic to Hawai'i identified in this survey, along with the 2008 survey, were outlined in Table 1 of Dr. Montgomery's written testimony. [Pet. Ex. 35, p. 3]

117. The Blackline Damselfly on O'ahu is a species that has been historically noted as common from sea level up to 2,400 feet in elevation. However, by 1996 this species appeared to be extirpated from the Waianae streams. It is now present in the Ko'olau Range only as scattered colonies. Within the Petition Area, they are seen along

a seep located in the northwestern corner that is fed from a man-made well likely created during the area's use as a dairy farm. [Pet. Ex. 35, p. 3] The brown, inch-long damselfly nymphs have a concealed existence clinging under stones or hiding in algae masses, both in moving and quiet waters. The Hawaiian Damselfly's diet includes bloodworms, which are the larvae of midges and other fly immatures plus sowbugs, and oribatid mites. Kalo is one of the few emergent water plants available as a host site in the native damselfly habitat. [Pet. Ex. 35, p. 4]

118. On sunny days, up to eight males were sighted spaced out along the seep's waters. With thick cloud cover and decreased sunlight, none to two were present at mid-day, likely because damselflies had dispersed from the breeding waters and risen into nearby trees and shrubs to rest and sleep. This species is also present in widely dispersed streams on both the windward and leeward sides of the Ko'olau mountains in the headwater and mid-reach sections, and the seeps that border them in 17 streams. The critical habitat for this species is mapped in six sections of the Ko'olau mountain streams and seeps totaling 25,203 acres. The 17 stream colonies are estimated to total 800 to 1,000 individuals, and some of these remaining populations may be considered robust. [Pet. Ex. 35, p. 4]

119. Key invertebrates present in the Hawaiian Damselfly habitat and detrimental to the species include mosquitoes and ants. The Southern House Mosquito (*Culex quinquefasciatus*) are breeding in small numbers in the flowing seep and well

feeding it. Larvae of the Southern House Mosquito were found only in a few 1- to 2-inch deep pools associated with this seep and serve as one food source for damselfly young. The Cannibal Mosquito (*Toxorhynchites amboinensis*) also lives in the well, and feed as predators on larvae of all other mosquitoes, and each other. [Pet. Ex. 35, p. 4]

120. Alien ants are known to prey on other insects and are documented as a factor in the limited presence of native arthropods. Ants are noted as a primary threat factor for the Blackline Hawaiian Damselfly in the 2011 Listing of Endangered Species. Alien ants observed in the Petition Area include the Long-legged ant (*Anoplolepis gracilipes*), Big-headed ant (*Pheidole megacephala*), and the Glaber ant (*Ochetellus glaber*). The Big-headed ant is a general predator on most native arthropods and is a threat to emerging damselflies. [Pet. Ex. 35, p. 4]

121. The color and narrow shape of the Damselflies make them difficult to see, creating risk that they could be stepped on by humans. Persons trespassing on the property can be a threat, since walking in or near the seep could inadvertently disturb damselfly molting, breeding and resting sites. Trespassers also risk disturbing and harming Damselflies directly while they are resting and molting on foliage or small sticks in water margins or muddy areas. [Pet. Ex. 35, p. 5]

122. The major threat to this species is predation on immature damselflies by alien fish, especially the Western Mosquitofish, Sailfin molly, and the Guppy. The placement of nonnative fish species into new aquatic habitats poses the major threat to

this relatively accessible population and may continue into the future by uninformed persons without increased public awareness. Feral pigs are another threat because their destructive wallowing and rooting for worms cause major disruptions of damselfly breeding and resting places. [Pet. Ex. 35, p. 5]

123. A report studying the similar, small endangered damselfly *Coenagrion mercuriale*, in the same family found the species to be extremely sedentary, with dispersal limited to an area of contiguous habitat. The median, net lifetime movement was 32 meters (105 feet) and 75% moved less than 50 meters (164 feet) in their lifetime. The boundaries of the damselfly habitat area along the seep were determined based upon this study and many site visits. Damselfly young (naiads) do not extend from the water's edge, but the foraging and roosting home range of adults do extend into the surrounding vegetation. Undisturbed emergent wetland plants (like sedges) can serve as ant-free perches for immatures. However, the present seep habitat lacks much foliage and ground cover, primarily due to the repeated rooting of feral pigs. [Pet. Ex. 35, p. 5]

124. Topographic and sunlight conditions influence the movement patterns of the adult damselfly in the surrounding area along the seep. Based upon site visits and available topographic data, the boundaries will respond to these needs, with the high points along and surrounding the ravine and above the seep channel establishing the habitat boundary. The boundary does not include an erosion incised, ephemeral drainageway located east of the seep. This drainage feature is normally dry except for

brief flows after heavy rainfall events and does not serve as a habitat for damselfly young. [Pet. Ex. 35, p. 5] The cemetery expansion was reduced by approximately 0.7 acre from 28.2 acres to 27.5 acres to provide for a 164-foot (50 meter) buffer area around the well and seep. [Pet. Ex. 55]

125. The project would not adversely impact native invertebrate species populations, which are widespread in distribution, except for a single listed endangered species. Use of native vegetation in the cemetery expansion area's landscaping and portions of the Cultural Preserve would provide additional habitat for native invertebrates. Design measures planned as part of grading plans (e.g. subsurface drainage system, irrigation line, etc.) would minimize fill effects on groundwater serving the well and seep. The additional buffer area (164 feet) proposed and grading improvements would thus not impact the Damselfly or alter its seep habitat due to avoidance and proposed minimization measures. [Pet. Ex. 35, p. 7]

126. Damselfly populations and human developments can co-exist. A population of the Orange-black Hawaiian Damselfly (*M. xanthomelas*) at a stream course at Tripler Army Hospital has been sustained by managing piped water for 20 years. On Lāna'i, this endangered species (*M. xanthomelas*) was found breeding in a large, ornamental pond behind the Lodge at Kō'ele. [Pet. Ex. 35, p. 7]

127. Proposed minimization measures would ensure continued water flow to the well and seep that would not alter this habitat. The State Department of Land and

Natural Resources, Division of Forestry and Wildlife (DOFAW) has determined the seep and Damselfly habitat would not be negatively impacted with proposed minimization measures in their July 9, 2019 letter to HHF Planners. [Pet. Ex. 24, p. 1] This was further confirmed in DOFAW's September 12, 2019 letter to the State Office of Planning. [OP Ex. 3, p. 2] DOFAW also determined an Incidental Take Permit under Section 10 of the Endangered Species Act would not be required because the cemetery expansion would avoid the damselfly and its habitat and include minimization measures. [Pet. Ex. 24, p. 1] Minimization measures proposed consist of the following:

1. Schedule a regular inspection of the seep to ensure the present low trickle flow of water is continued through a monitoring plan during the project design phase. Inspection of the seep should be conducted before the start of construction to establish baseline water flow conditions. Monitoring would occur during construction with the seep area inspected on a weekly basis to evaluate water flow in coordination with BMP measures. Once construction concludes, monitoring would continue for an additional six months to ensure continued seep water flow. Inspections would occur weekly for the first three months and every two weeks thereafter if conditions are satisfactory. After the six-month period elapses, HMP staff would conduct monthly water flow inspections.

2. A well monitoring gauge or other appropriate device would be installed inside the well, upslope from the seep to monitor water levels prior to, during, and after project construction. A permanent water line extending from the proposed cemetery expansion area's irrigation system to the well would be installed to serve as a long-term means of ensuring continued water flows to the seep. During construction, a temporary water line would also be extended to the well to support water levels, as necessary.
3. Monitor as part of seep inspections to ensure fish, such as the Western Mosquito fish, are not present within this habitat area.
4. Review the habitat boundaries currently shown based upon more accurate data collected from a topographic survey during project final design and revise the habitat boundary as appropriate.
5. Construct fencing around the damselfly habitat boundary to protect native damselfly from disturbance by feral pigs.
6. Place small sticks upright and away from the edges of waterlogged areas to serve as molting safe zones to prevent predation. These sticks would protect naiads because ants would not cross water barriers.



7. A subsurface drainage system designed in a herringbone pattern would be installed in area above the well and seep. This system would ensure water flow is maintained to the well and seep. [Pet. Ex. 35, p. 8]

128. The population of damselfly could succumb to some invasive species. Potential species that could threaten the population include fire ants brought over from a neighboring island or the introduction of something unintentional into an area. Because of the current trajectory of the declines across the state of so many native damselflies, it's not farfetched to say that that population, if not monitored, and if active management isn't ongoing, it could succumb to the impact of invasive species. [Tr. 7/22/20 63:14-64:7]

129. The avoidance and minimization mitigation measures proposed by the Petitioner provides the species a very solid chance of persisting with ongoing monitoring, and the placement of the temporary and permanent waterline. [Tr. 7/22/20 67:5-67:19]

## 5. Groundwater Resources

130. The Petition Area is located within the former caldera of the Ko'olau Mountain, and the caldera filling lavas beneath are part of the Kailua Member of the Ko'olau volcanics. These caldera filling lavas are relatively impermeable due to almost complete filling of interstices with secondary minerals from hydrothermal alteration.

Clinker beds, where they occur, have been cemented into hard and essentially impermeable breccia. Joints of intruded dikes are also filled with secondary minerals. Given the virtual impermeability of Kailua volcanics, the project does not have the potential to impact ongoing or possible future uses of groundwater drawn from the permeable Ko'olau volcanics of the Ko'olaupoko Aquifer System. [Pet. Ex. 33, p.1]

131. The existing well-located directly upslope of the seep is 11.5 feet deep below the top of its concrete rim. The concrete top opening is 2.65 feet by 2.9 feet in dimension, and the dug borehole below is substantially larger than this opening. Several measurements taken determined that the well's water level was consistently above ground level on the downstream side of the well. The well is not registered with the State Commission on Water Resource Management (CWRM) and no information about its installation or past use could be found. An old pipe laying nearby indicates it may at one time have been a modest source of supply for some prior use (e.g. former dairy). [Pet. Ex. 33, p.2]

132. The small perennial seep emerges about four feet downslope from the well. Further down the waterway, the flowrate in the waterway continuously increases along the route to its ultimate discharge into a City drain inlet at the end of 'Ōhāhā Place. Given the additions to the flowrate en route downslope, it is more accurate to describe the seep as a linear area of discharge rather than a discharge from a single point. [Pet. Ex. 33, p.2]

133. Well Testing Results. Two types of field investigation were conducted to assess the well and seep: 1) drilling four boreholes directly upslope the well and seep; and 2) conducting a siphon and pump test of the well. Water was not encountered in the boreholes until each borehole had been drilled down to between 15 to 20 feet below ground. At that depth, the water level in each borehole rose very slowly establishing that the groundwater in the well and emerging in the seep is semi-confined. The tabulation of approximate water levels in the boreholes and the well showed that the semi-confined groundwater residing in the poorly permeable residual soil has a relatively steep downslope gradient. [Pet. Ex. 33, p.2]

134. Well siphon testing was conducted for two basic objectives: 1) to confirm that the semi-confined groundwater occurrence found at the four boreholes directly upslope also exists at the well; and 2) to determine if the seep emerging four feet downslope of the well is a result of subsurface leakage from the well. Both aspects of the groundwater occurrence were confirmed by the test. [Pet. Ex. 33, p.3] The results can be summarized as follows:

1. When well water level was drawn about halfway down the well head, the seep emerging about four feet downslope stopped flowing. Clearly, flow from the upper end of the seep is maintained by subsurface well leakage.

2. Over the period of intermittent siphoning and then pumping, a total of 1,615 gallons was removed from the well. About 950 gallons was estimated to be removed from well storage itself, and the remaining 665 gallons flowed into the well during the test. That inflow was at an average of about 4.3 gallons per minute (gpm).
3. Based on measurements of the recovering water level at the end of pumping, inflow to the well averaged approximately 3.1 gpm.
4. The water level in the well was checked the following day. The water level had fully recovered (actually to a level 0.1-foot higher than at the start of the test the day before). Flow in the seep below the well was fully restored at that time. [Pet. Ex. 33, p.3]

135. Field investigations demonstrated 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 the four test boreholes upslope, 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. The upper end of the seep begins about four feet downslope of the well, and water flow in the upper one third to one half of the linear seep is maintained by subsurface leakage from the well. Further downslope, flow in the

seep increases continuously to its ultimate discharge into the City's drainage system.

[Pet. Ex. 33, p.3]

136. Based on the groundwater occurrence established, the footings of proposed retaining walls would be too shallow to directly intercept groundwater moving downslope. However, the weight of fill material behind retaining walls has the potential to compress existing soils, potentially impeding or redirecting groundwater moving downslope. [Pet. Ex. 33, p.3] To minimize this potential impact, the following measures would be implemented:

- A subsurface drainage system designed in a herringbone configuration consisting of three subsurface drains in the area planned for fill activities above the seep will be implemented. This would ensure the quantity and direction of groundwater flow is maintained. Subsurface drains would likely be installed between 10 to 15 feet below the existing surface. The exact location, alignment, and depth of this drainage system would be determined as part of project design. [Pet. Ex. 33, p.4]
- 2. A water level recording device would be installed within the dug well prior to construction. Monitored levels during and following construction would be a good indicator of the effectiveness of the subsurface drainage system. If the subsurface groundwater flow is not sufficiently maintained by this system, the flow would be

augmented by a water line extended from the cemetery expansion area to the well. [Pet. Ex. 33, p.4]

3. The Petitioner will register the shallow well with the State Commission on Water Resource Management to address their comments. [Pet. Ex. 6, Appendix A-2]

**6. Surface Waters and Water Quality**

137. Kāwā Stream is a perennial stream located outside the Petition Area and has a total run of about 2.8 miles of main and tributary stream courses associated with a larger watershed (Kāwā watershed). The stream's main course originates within the Hawai'i State Veterans Cemetery and discharges into the southern portion of Kāne'ohe Bay. Ephemeral drainage ways within the Petition Area carry site storm water runoff toward the City's drainage system serving the lower residential subdivision that eventually feeds into Kāwā Stream. [Pet. Ex. 36, p. 1] This stream receives perched groundwater input and storm runoff that originates from both forested and urbanized areas that include the Hawai'i State Veterans Cemetery, HMP, residential and commercial developments, schools and parks, a golf course, and a municipal sewer pumping station. [Pet. Ex. 36, p. 2]

138. During dry periods of the year, groundwater baseflow enters the stream course from the basin located below HMP situated near the cemetery's baseyard, referred to as Cascade Spring (outside the Petition Area). Another small volume of

perched groundwater seeps into a subsurface drain that daylights adjacent to the Cascade Spring that is connected to a curbside storm drain that collects rainfall runoff from the cemetery grounds above. This upper section of the stream and other nearby branches receive runoff from the surrounding forested lands. These tributaries of Kāwā Stream converge and flow downslope toward the Parkway Subdivision. [Pet. Ex. 36, p. 2]

139. The average volume of groundwater input to the Kāwā Stream above the USGS monitoring station site is estimated to be around 600 gallons per minute (GPM). [Pet. Ex. 36, Exhibit 1] The stream flow measured at the Parkway Subdivision site reflects the approximate volume of baseflow (25 GPM) that originates from the basin located below the current HMP. [Pet. Ex. 36, p. 2]

140. Kāwā Stream is listed on the State Department of Health's (DOH) 2016 303(d) list indicating a surface waterbody is in violation of State water quality standards. [Pet. Ex. 36, p.4] Kāwā Stream is a Class 2 inland water body. The objective of Class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. A Stream Bioassessment report prepared for Kāwā Stream found that it generally does not provide good habitat for native aquatic organisms and does not support any substantial populations of native fish and crustaceans. [Pet. Ex. 36, p. 3]

141. Līpalu Drainageway. A flume (Līpalu Flume) was installed within the ephemeral drainageway serving the area identified as the Līpalu watershed about 200 feet mauka of the City's Līpalu Street catchment basin to allow continuous stormwater flow monitoring. It should be noted that monitoring at the flume was terminated on February 18, 2018 due to a large storm event that partially destroyed the flume. The highest one-hour rainfall total associated with this event was 2.51 inches, and the likely peak flow volume during this intense storm was on the order of 200 cubic feet per second (cfs). [Pet. Ex. 36, p. 2-3]

142. An average of 40% of the rainfall that fell within the Kāwā watershed during nine storm events recorded ended up as runoff discharged within Kāwā Stream at the USGS gaging station. Within the smaller Līpalu watershed, an average of 5.4% of rainfall within this area discharged as runoff during these storm events. During the three-month monitoring period, only about 1.2% of the total runoff discharged from the Kāwā watershed originated from the Līpalu watershed area. [Pet. Ex. 36, p. 3-4]

143. Water Quality. The impact of pollutant loads including Total Nitrogen (TN), Total Phosphorous (TP), Nitrate plus Nitrate (N+N), and Total Suspended Solids (TSS) from the watershed on Kāwā Stream was estimated using stream flow and water quality data retrieved from the Kāwā Stream USGS station. An estimated 590.5 tons of TSS, 5.7 tons of TN, and 2.9 tons of TP were entrained in water passing the gauging station during the study's sampling period. The majority of sediment and nutrient loads



were carried in the stream during the nine storm events. While 82% of stream flow occurred during these storm events, 99.2% of TSS and phosphorous loads and 91.6% of the TN load occurred during the events. The USGS observed that a single storm may deliver the equivalent of years and even decades of pollutant load received by coastal waters. This phenomenon is observed in the Kāwā watershed. Based on this data, the majority of sediment and nutrient loads entering Kāneʻohe Bay from Kāwā Stream occur during significant storm events. [Pet. Ex. 36, p. 4]

144. Līpalu watershed streamflow and pollutant loads data similarly indicate these large storm events can contribute massive amounts of pollutants, overwhelming totals from smaller rainfall events and impacting Kāwā Stream and its water quality. Runoff volume from this forested watershed represents approximately 0.74% of total water flow measured at the Kāwā Stream gauging station. However, the TSS load leaving the area represents about 31.3% of the TSS load, indicating the undeveloped forested portion of the Petition Area experiences high levels of erosion and sediment runoff. This watershed also contributed 4.0% and 1.9%, respectively, of TN and TP. The high level of erosion and sediment runoff from the undeveloped portion of the Petition Area thus contributes a significant amount of TSS into Kāwā Stream. The data further confirms that large single storm events can contribute massive amounts of TSS and nutrients overwhelming totals resulting from other smaller rainfalls. [Pet. Ex. 36, p. 5]

145. Water Quality Sampling Results. Stream and spring water samples were collected from within the Petition and surrounding areas (e.g. USGS Kāwā Stream gaging station, tributary behind the Parkway Subdivision recreation center). Water quality characteristics of Kāwā Stream were also determined via analysis of data from previous water quality studies. Sampling data suggests groundwater dominant baseflow in Kāwā Stream is characterized by relatively low concentrations of TP and TSS, with intermediate concentrations of TN and somewhat elevated concentrations of N+N. Stormwater dominant samples tend to have somewhat elevated concentrations of TP, elevated concentrations of TSS, elevated concentrations of TN, and comparatively lower concentrations of N+N. [Pet. Ex. 36, p. 5-6]

146. The analysis indicates TN concentrations generally increase as TSS concentrations rise. This pattern suggests groundwater dominant samples, possessing lower TSS concentrations, also have comparatively lower nitrogen concentrations. Elevated nitrogen concentrations result from the presence of stormwater runoff. A positive relationship between TP and TSS concentrations was also observed, with phosphorous concentrations increasing as the presence of suspended solids rise. This relationship suggests phosphorous may be present in solids transmitted to the stream during runoff events. A negative relationship between N+N and TSS was observed, with N+N concentrations generally declining as TSS increases. This suggests

groundwater, which generally has lower TSS concentrations, is the primary source of nitrates to Kāwā Stream. [Pet. Ex. 36, p. 6]

147. TP, TN, and TSS concentrations from the Līpalu Flume are significantly higher than samples from elsewhere in the watershed, including the Parkway site that receives runoff from the existing HMP cemetery. TSS concentrations in runoff from the undeveloped Līpalu watershed are elevated compared to concentrations measured elsewhere. Elevated concentrations may in part reflect the higher amounts of rainfall and rainfall intensity required to initiate flow in the forested watershed. [Pet. Ex. 36, p. 4-6]

148. The data indicates that samples from the USGS Kāwā Stream station and the Parkway site follow similar variation trends. This suggests nutrient and TSS contributions to Kāwā Stream from the existing HMP cemetery area are not elevated compared to contributions from the lower urbanized portions of the watershed. The pattern further suggests existing developed cemetery areas of HMP do not contribute high nutrient concentrations to Kāwā Stream that would affect its water quality. [Pet. Ex. 36, p. 6]

149. Pesticide Analysis Results. A total of 42 stream and groundwater samples were collected and analyzed for Glyphosate, Diuron, and 2,4-D. Glyphosate was analyzed due to its widespread use and general ubiquity in the environment. Diuron and 2,4-D were analyzed due to the detection of these pesticides in a

stormwater sample collected at the USGS Kāwā Stream station. These pesticides have been also detected in other streams on O'ahu and Kaua'i at trace concentrations, typically in the low to mid-part per trillion levels. Glyphosate was the most commonly detected pesticide with concentrations detected in 15 of 42 samples gathered. Diuron was detected in 7 of the 42 samples, while 2,4-D was only detected in a single sample. [Pet. Ex. 36, Table 1, p. 7]

150. Pesticides were most commonly detected in turbid, runoff dominated samples where TSS concentrations tended to be elevated. This suggests the source is from pesticide contaminated sediments that may be transported to Kāwā Stream during rainfall events. Pesticides may also be present in alluvial deposits located adjacent to the stream and become resuspended in stream waters through the scouring of deposits during periods of high stream flow. [Pet. Ex. 36, p. 7]

151. Concentration levels of glyphosate at the USGS Kāwā Stream gage site are generally similar at the Parkway monitoring site that receives runoff from the existing cemetery. This suggests input of glyphosate into the stream from HMP's cemetery is similar to glyphosate input from lower residential communities providing runoff to the stream. The trace concentrations of Diuron detected at the Līpalu flume may reflect residual pesticide input from prior agricultural usage of the area (e.g. pineapple cultivation). [Pet. Ex. 36, p. 7]

152. Although variation was observed, stream samples containing over 0.5 parts per billion glyphosate are generally moderately to highly turbid. This observed pattern aligns with findings of other studies on O'ahu and Kaua'i indicating that glyphosate is commonly detected in stream bed sediments. This supports the conclusion that glyphosate may be found in Kāwā Stream from runoff related resuspension of contaminated sediments. The estimated total mass of glyphosate from the large February 5, 2018 storm event producing roughly 17.6 million gallons of runoff is estimated to be only 12.9 grams (less than a tablespoon) of glyphosate. Therefore, it can be concluded that glyphosate concentrations detected in Kāwā Stream are minimal. [Pet. Ex. 36, p. 8]

153. Formaldehyde Analysis Results. Formaldehyde is a chemical used as part of the modern burial embalming process to temporarily prevent decomposition. Water samples were collected and analyzed to detect the presence of this chemical to address potential concerns with its leaching into perched groundwater from the existing Veterans and HMP cemeteries. Formaldehyde was not detected in any of the samples at an analytical detection limit of 5 parts per billion. This is consistent with scientific studies that have found that formaldehyde will biodegrade to low levels in a few days if released to water. In addition, the predominant degradation product of formaldehyde in the environment, formic acid, rapidly biodegrades in soils. [Pet. Ex. 36, p. 8]

154. Project Effects on Water Quality. Project improvements are expected to have an overall beneficial impact on the currently impaired water quality of Kāwā Stream and the eventual discharge point at Kāneʻohe Bay. Cemetery expansion would overall reduce existing site slopes, lowering the velocity of runoff and improving runoff infiltration within the newly developed grassed areas and retention basins. Improvements should improve TMDL by reducing stormwater discharge, TSS, and nutrients exiting this watershed area. As shown by water quality data collected, the area below the present HMP cemetery site (Parkway Site samples) has far lower TSS and nutrients being discharged into Kāwā Stream due to the cemetery's landscaped infiltration effects. In comparison, the undeveloped Līpalu watershed area currently experiences significant erosion during large rainfall events. [Pet. Ex. 36, p. 8-9]

155. Cemeteries are not intensively managed landscapes compared to golf courses. Thus, fertilizer use is not necessary at the existing HMP cemetery due to generally fertile conditions, supportive weather conditions, and lower maintenance needed for turf grass. Pesticides are also not routinely used by maintenance staff for HMP's cemetery except for occasional use of the herbicide Roundup (glyphosate) to address spot areas needing treatment. However, use is infrequent due to Kāneʻohe's generally wet weather and the characteristics of the cemetery lawn. [Pet. Ex. 36, p. 9]

156. Glyphosate concentrations generated by the project should not have a significant water quality impact. Detected concentration levels from the larger

watershed serving the existing Veterans and HMP cemeteries are broadly similar to glyphosate input from lower residential communities. Glyphosate use would be minimal within the cemetery expansion, and any discharge should be relatively small and minimally impact water quality. Cemetery expansion will also not lead to formaldehyde entering the stream based on the sampling results obtained. The Cultural Preserve would have minimal effect on existing runoff volumes and water quality because no major site improvements would occur within the Preserve area. [Pet. Ex. 36, p. 9]

157. The project would have beneficial long-term water quality effects by reducing the velocity of runoff and the corresponding amount of TSS and nutrients discharged into drainageways and Kāwā Stream. Thus, no long-term mitigative measures are necessary. The following mitigative measures are proposed for short-term construction activities. [Pet. Ex. 36, p. 9]

1. Design plans will include BMPs to address mitigating these effects and plans would be coordinated with the City and County of Honolulu during review and approval of grading plans, as required by County rules.
2. Required permits (and review) include grading, grubbing, stockpiling, and a National Pollution Discharge Elimination System

(NPDES) permit. These permits all require agency review and approval and would address applicable BMPs.

3. An Erosion and Sediment Control Plan (ESCP) would also be prepared that includes BMPs as part of permit review and approval.

[Pet. Ex. 36, p. 10]

## 7. Historic and Archaeological Resources

158. Honua Consulting completed an Archaeological Inventory Survey (AIS) for the Petition Area that has been finalized and accepted by the State Historic Preservation Division (SHPD). [Pet. Ex. 42, p. 1] The area of potential effect (APE) for the AIS study consisted of the entire 53.45-acre Petition Area. The AIS involved background research on pertinent historic and archaeological information; a 100% pedestrian surface survey of the Petition Area; site documentation of all historic properties encountered; and excavation of one site area. [Pet. Ex. 42, p. 1] Consultation with interested community members has been on-going since 2016. Several lineal and cultural descendants, recognized cultural experts, and other knowledgeable individuals interviewed as part of a Cultural Impact Assessment (CIA) conducted by Honua Consulting supported background research during the AIS preparation. [Pet. Ex. 42, p. 2]

159. Summary of Fieldwork Results. Archaeological fieldwork identified a total of 24 sites that were documented. Ten of the sites documented were identified in



prior archaeological studies of the Petition Area. The remaining 14 sites documented during this investigation were newly identified. All previously identified sites from prior studies were relocated by Honua Consulting, previous plan maps and descriptions were amended to account for current conditions and observations. [Pet. Ex. 42, p. 2] A summary of the location of all sites relative to the Petition Area and Cultural Preserve is provided.

1. Twenty-two (22) of the 24 total sites identified are located within the Petition Area. Two sites identified as State Inventory of Historic Places (SIHP) -4681 (habitation complex) and SIHP -8235 (habitation site) are located outside of the Petition Area.
2. A total of 11 sites are within, or partially within, the Cultural Preserve. Eight of the ten previously identified sites are located within the Cultural Preserve: (SIHP # -354 [heiau], -4683 [charcoal kiln], -4684 [habitation complex], -6930 [enclosure], -6931 [alignments], -6932 [storage feature], -6933 [charcoal kiln], and -7079 [ag complex]). Some features associated with SIHP # -7079 (agricultural complex) are located outside the Cultural Preserve area (Feature D, mound). Three newly identified sites are located within the Cultural Preserve (SIHP # - 8231 (terraced 'auwai), -8240 (terraces), and -8241 (walled pit). [Pet. Ex. 42, p. 2]

160. Sites Outside the Petition Area (Preserved). Two sites are located outside the Petition Area and would not be affected by the proposed project. These sites include the following: 1) SIHP # 50-80-10-4681 is a traditional habitation complex located upslope (mauka) from the cemetery expansion area that would be preserved in place; and 2) SIHP -8235 is a habitation site located further upslope and east of SIHP -4681 and is recommended for data recovery and to be preserved in place. [Pet. Ex. 42, p. 2]

161. Sites Preserved Within the Cultural Preserve. Eleven sites within the Cultural Preserve would be preserved. A portion of SIHP # -7079 (remnant ag complex) site's boundary is located outside the Cultural Preserve and would result in a portion of site features being impacted by grading activities. Data recovery is recommended for SIHP # -7079, Feature D (mound). SIHP # -7079, Feature A (grinding stone) should either be preserved in place or relocated to an appropriate location within the Cultural Preserve. No further work is recommended for SIHP # -8241 (charcoal kiln) due to data collected via excavation during this AIS. These sites would benefit from the project, because they would be preserved, protected, and maintained. The cultural landscape and historic sites would be restored, and cultural use and practices could occur. A preservation plan will be developed for the Cultural Preserve that would ensure appropriate long-term management and maintenance of these sites occurs. [Pet. Ex. 42, p. 8]

162. Sites Outside the Cultural Preserve. A total of 11 sites are situated outside the Cultural Preserve. Two sites would not be impacted by the cemetery expansion, but the remaining nine sites would be affected by grading activities. The two sites are not affected because they are being preserved or located within a buffer separating the expanded cemetery from nearby residences. These sites include a water retention terrace (SIHP # 50-80- 10-4680) and an 'auwai (SIHP # 50-80-10-8230). [Pet. Ex. 42, p. 9]

163. SIHP # -4680 is located in the northern end of the Petition Area boundary mauka of the end of Līpalu Street and would be part of a buffer area between the cemetery and residential subdivision. Site # -4680 is a terrace in fair condition previously used for water retention. This site is considered historically significant under Federal and State Register Criterion D with No Further Work recommended for the site given its historic function and remnant condition. [Pet. Ex. 42, p. 9]

164. SIHP # -8230 is also located in the northwest corner of the Petition Area within an area that would be preserved. The 'auwai system associated with this feature provides habitat for the endangered Blackline Hawaiian Damselfly. This site is considered historically significant under State Register Criterion D with preservation recommended. [Pet. Ex. 42, p. 9]

165. Sites Affected by Cemetery Expansion. The nine sites affected by grading activities are considered historically significant under Federal and State Register

Criterion D. Data Recovery is recommended for four sites, and No Further Work is recommended for the remaining five sites, given their historic function and remnant condition. [Pet. Ex. 42, p. 10] A summary of these sites is provided.

1. SIHP # -8228 Historic Dairy Roads. This site consists of four road features that are identified as Roads 1, 2A, 2B, and 3. [Pet. Ex. 42]  
These roadways are located in the western corner of the Petition Area generally mauka of 'Ōhāhā Place and are in poor condition. The sites include several historic dairy roads that are relatively level but damaged by natural tree growth and soil erosion. No Further Work is necessary for these roads. [Pet. Ex. 42, p. 10]
2. SIHP # -8229 Historic Road. This site consists of a short segment of an old dirt road that is in poor condition. The road segment is about ten feet wide and runs in a north-south direction for about 33 feet. The ends of this roadway have been removed, likely bulldozed, leaving only this short segment remaining. No Further Work is necessary for this road. [Pet. Ex. 42, p. 10]
3. SIHP # -8232 Traditional Terrace Remnants. This site consists of the remnants of a traditional terrace that is in poor condition. It is comprised of five features, consisting of a series of basalt cobble-lined terraces situated on a moderate to steeply sloped hillside. The

condition of these features has been affected by natural water erosion and rockfall. No Further Work is necessary for these terrace remnants. [Pet. Ex. 42, p. 10]

4. SIHP # -8233 Traditional Terrace Remnants (6A) and Modified Outcrop (6B). This site is comprised of two feature areas identified as Features 6A and 6B that are in poor to fair condition. The terraces have been heavily disturbed by natural erosion and rockfall. No Further Work is necessary for Feature 6A and Data Recovery would be implemented for Feature 6B. [Pet. Ex. 42, p. 10]
5. SIHP # -8234 Traditional Terrace. Site features include a low stone terrace and two features that are likely natural terraces located near the convergence of two drainage ditches. This site was determined to be in fair condition. Data Recovery would be implemented for this site. [Pet. Ex. 42, p. 11]
6. SIHP # -8236 (Honua 9) Historic Water Retention. This site is in good condition, and site features include a basalt boulder and cobble concentration located on the steep slope of a drainage ditch. The construction style appears to be historic-era and may have been used for water retention. Data Recovery would be implemented for this site. [Pet. Ex. 42, p. 11]

7. SIHP # -8237 Traditional Terrace Remnants. This site includes remnants of a traditional terrace located on a moderately sloping, north-tending hillside. It is watered by a natural streambed created by intermittent runoff. The site is in poor condition due to natural erosion and thick vegetation growth. No Further Work is necessary for this site. [Pet. Ex. 42, p. 11]
8. SIHP # -8238 Habitation and Agricultural Terraces. The site served as agricultural terraces with possible habitation and was determined to be in poor to fair condition. The shape of the site indicates the top portion may have served as a habitation site with six associated agricultural terraces below. Data Recovery would be implemented for this site. [Pet. Ex. 42, p. 11]
9. SIHP # -8239 Earthen Pit. This site is comprised of an earthen pit located at the top of a steep hillside that is in good condition. The interior southern pit wall has a flat, large basalt boulder and black, hardened soil. The darkened, cemented soil indicates fires were burned within the site. Data Recovery would be implemented for this site. [Pet. Ex. 42, p. 11]

166. Based upon the SHPD-accepted AIS, data recovery would be conducted followed by development of a Preservation Plan. An archaeological monitoring

program would be implemented during ground disturbing activities. [Pet. Ex. 42, p. 11, Ex. 1 SHPD letter p. 2]

167. Data Recovery. The Data Recovery program would begin with completion of a Data Recovery Plan that would outline the proposed testing strategy and research objectives. The plan must be reviewed and accepted by SHPD prior to controlled excavation of select sites. Data Recovery would be conducted for four sites affected by grading activities, one site located outside of the Petition Area, and one additional site located on the boundary of the Cultural Preserve (SIHP # -7079). Data recovery efforts would attempt to establish function, usage, and the age of these sites, how they relate to each other, and aid determination of any further mitigation measures that may be needed. [Pet. Ex. 42, p. 14]

168. If all or portions of SIHP # -7079 are impacted by grading plans, it is recommended that Data Recovery be conducted on one or more of the features, particularly Feature D (mound), and that Feature A (grinding stone) either be preserved in place or relocated to an appropriate location within the Cultural Preserve. Data recovery for SIHP # -8235 is recommended in order to see if data can be obtained to understand how the site relates with others in the project area and also to find evidence regarding what types of activities were being conducted (what resources were being utilized, etc.). [Pet. Ex. 42, p. 14]

169. Preservation Plan. All features within the Cultural Preserve would be preserved and protected through creation of a Preservation Plan. If Feature A (grinding stone) of SIHP # -7079 is impacted by grading activities, it would either be preserved in place or relocated to an appropriate location within the Cultural Preserve in accordance with the Preservation Plan. Two sites not located within the Petition Area (SIHP # -4681 and # -8235) would be avoided and thus protected. SIHP # -8230 ('Auwai) would be avoided and consequently preserved due to its function as a habitat for the endangered Blackline Hawaiian Damselfly. [Pet. Ex. 42, p. 15]

1709. The Preservation Plan would include a management component that establishes guidelines for managing activities occurring within the Preserve, which continues to allow cultural practitioners to access the site for cultural practices and gathering. [Pet. Ex. 42, p. 15] The Preservation Plan for the Cultural Preserve would address:

1. Establishment of the proposed Cultural Preserve and support development of a preservation and management plan that includes participation by cultural advisory groups, including the Ko'olaupoko Hawaiian Civic Club, and the Petitioner to foster appropriate cultural management.



2. Allowing community members and organizations to engage in regular maintenance of Kawa'ewa'e Heiau and the surrounding cultural landscape and historic sites.
3. Determining buffer areas for the Heiau and other sites.
4. Working with the community to develop educational and interpretive programs.
5. Working with practitioners to protect culturally significant hula and medicinal plants.
6. Allowing for restoration of the cultural landscape, including but not limited to the 'auwai and historic terraces. The 'auwai associated with the well and seep (SIHP # -8230) could be included as part of these restoration and management activities.
7. Addressing new burials within the Preserve following traditional native Hawaiian protocols.
8. Following recommendations for all historic sites presented in the Final AIS. [Pet. Ex. 42, p. 15]

171. Archaeological Monitoring. An archaeological monitoring program would be designed in coordination with SHPD. The monitoring plan must be approved by SHPD prior to the start of ground-disturbing activities. [Pet. Ex. 42, p. 15, Ex. 1 SHPD letter p. 2]

## 8. Cultural Resources

172. Honua Consulting completed a Cultural Impact Assessment (CIA) for the Petition Area. The CIA involved gathering historic cultural information from archival sources and conducting interviews with cultural descendants, lineal descendants, or other knowledgeable cultural practitioners. [Pet. Ex. 43, p. 1] The CIA methodology follows the analytical framework established in *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 2000 (*Ka Pa'akai*). The CIA broadly covers the Kāne'ohe ahupua'a and focuses on areas near or adjacent to the Petition Area and identified tangible and intangible cultural resources of this area. [Pet. Ex. 43, p. 2]

173. Interviews occurred with lineal and cultural descendants, recognized cultural experts with ties to the Kāne'ohe ahupua'a and to the Petition Area. In particular, the interview process focused on identifying and speaking with cultural practitioners, specifically Kumu Hula, who accessed or have knowledge about area resources. Individuals were identified through community member recommendations and expertise along with individuals consulted as part of a CIA prepared in 2008. Efforts were taken to interview individuals that were unable to be consulted for the prior 2008 CIA, with a focus on Native Hawaiian cultural masters. An advertisement was placed in the State Office of Hawaiian Affairs (OHA) *Ka Wai Ola* February 2018 newspaper requesting information about possible resources in the Petition Area. Eleven individuals were interviewed for this current CIA. [Pet. Ex. 43, p. 2]

174. Intangible resources associated with the Petition Area include mo'olelo (legends), 'ōlelo no'oeau (wise sayings), and mele (chants). Mo'olelo associated with the Petition Area include those associated with the demigod Kamapua'a, who is connected to the Windward O'ahu. Three 'ōlelo no'oeau were identified that were related to the broader Kāne'ohe area and place names within the ahupua'a. Three mele were also identified that were associated with broader Kāne'ohe and Ko'olau regions. [Pet. Ex. 43, p. 2-3]

175. Many historic sites identified in the Petition Area have been destroyed or degraded by prior agricultural activities, development initiatives, or invasive plant growth. Kawa'ewa'e Heiau is considered the most prominent of these sites and is in degraded condition with few features recognizable based upon the AIS. The site was a luakini heiau, which were heiau dedicated to human sacrifice and prayers by ruling chiefs. A hōlua slide was reported to be located near Kawa'ewa'e Heiau. Later archaeological research noted the slide was destroyed by attempts to cultivate pineapple in the Petition Area. [Pet. Ex. 43, p. 3]

176. Culturally significant flora and fauna are associated with the Petition Area. Vegetation in the Petition Area is a mixture of invasive, endemic, indigenous, and Polynesian introduced plant species. Of the 95 plant species identified, 13 were culturally significant to native Hawaiians. Of these species, laua'e, pala'ā, tī, kukui, and palapalai are important to highlight given their usage by cultural practitioners for hula

practices. In particular, laua'e fern are used in the process of perfuming kapa and are commonly included in lei. The majority of faunal species identified in the Petition Area are not culturally significant. The only native faunal species identified was the Pacific Golden-Plover (*Pluvialis fulva*), known as the Kōlea. This indigenous migratory shorebird plays an important role in many native Hawaiian myths and was believed to be messengers of the gods and divine chiefs. [Pet. Ex. 43, p. 3]

177. Traditional and customary native Hawaiian practices currently occurring in the Petition Area include maintenance of Kawa'ewa'e Heiau and the surrounding area along with gathering of culturally significant plants associated with hula practices. Community members would be interested in assisting with heiau maintenance if the site was cleared of invasive trees and brush. Ko'olaupoko Hawaiian Civic Club members also expressed concerns about accessibility to the heiau for kūpuna. Various cultural practitioners noted the Petition Area is a valued source of hula related plants including Laua'e and the Pala'a fern as well as plants with traditional medicinal value. Other cultural practitioners mentioned accessing the Petition Area to gather culturally significant plants from Līpalu Street. [Pet. Ex. 43, p. 3-4]

178. Overall, culturally significant resources and practices within the Petition Area would be enhanced by the project due to the establishment of the Cultural Preserve supporting cultural practices, cultural landscape restoration, and maintenance and management of resources and historic sites. The Cultural Preserve would be

managed under a Preservation Plan developed jointly by the Ko'olaupoko Hawaiian Civic Club and the Petitioner that would provide for the long-term maintenance and preservation of resources, which is a beneficial effect. [Pet. Ex. 43, p. 4]

179. Some practitioners were concerned that cemetery expansion grading plans would impact flora such as Laua'e and Pala'a. However, the Cultural Preserve has similar flora and would provide significant opportunities to improve Laua'e and Pala'a habitat, by providing an area where such resources can be grown and managed in a more accessible and effective manner. Leaving conditions as they are now may result in a greater threat to the existing flora due to unrestricted growth of invasive vegetation, erosion, along with threats posed from unauthorized recreational activities and trespassers. Landscaping plans can also allow seeds or cuttings from extant endemic plants to be collected and grown or replanted within the Cultural Preserve as part of cultural landscape restoration. [Pet. Ex. 43, p. 4]

180. Interviews with practitioners identified no traditional and customary practices associated with fauna in the Petition Area that would be impacted by the project. Numerous native Hawai'ians expressed concerns about the potential impact to Kawa'ewa'e Heiau and surrounding historic sites. The final AIS determined the project would have an overall positive and beneficial impact on previous and newly identified sites in the Petition Area through establishment of the Cultural Preserve. The sites, including Kawa'ewa'e Heiau, would benefit from cultural landscape restoration,

historic site restoration, and cultural practices. Several sites impacted by grading activities were determined under the final AIS to: 1) require no further work; or 2) be included in a data recovery program to mitigate project impacts. As a result, adverse impacts to these sites are not anticipated. [Pet. Ex. 43, p. 4-5]

181. The Preservation Plan developed would ensure proper management and maintenance of associated sites. The area designated for the Cultural Preserve has been used for generations by Kumu Hula. Laua'e, Pala'ā, Tī, Kūkui, Palapalai, and other hula plants grow in this area for which Kumu Hula access the area, care for the area and its resources, and use the resources for cultural practices. Establishing the Preserve is also important for perpetuating cultural practices through student teachings and allows continuation of cultural practices positively impacting these practices. Hawaiian practitioners would be able to conduct traditional practices, including burial practices, in the Cultural Preserve. This is an expressed wish by Hawaiian practitioners, who testified during the City Council Planning Committee hearings on the amendment to the Ko'olaupoko Sustainable Communities Plan. [Pet. Ex. 43, p. 5]

182. Thee *Ka Pa'akai* analysis conducted as part of the CIA concluded that the project would not adversely impact traditional and customary native Hawaiian rights. The rights of native Hawaiian cultural practitioners would be preserved and protected by avoiding development in any areas identified as being utilized for traditional or customary practices. The Petitioner is also placing lands and resources used for

traditional or customary practices into a Cultural Preserve and conservation easement that would ensure the protection of these resources in perpetuity. The Petitioner has further agreed to continue to work with practitioners to ensure safe, regular access to the lands and resources for cultural practice. [Pet. Ex. 43, p. 5]

183. The following measures are related to the Cultural Preserve and would minimize impacts to associated historic sites, cultural resources, and traditional and customary practices:

1. Establish the Cultural Preserve and support development of a preservation and management plan that includes participation by cultural advisory groups, including the Ko'olaupoko Hawaiian Civic Club or other Native Hawaiian Organization, and the Petitioner to foster cultural management of the preserve.
2. Follow recommendations for historic sites presented in the final AIS.
3. Continue allowing cultural practitioners access to the Cultural Preserve under the Preservation Plan management guidelines. Create safe access for kūpuna and practitioners to the heiau while limiting access from trespassers. A managed (gated and restricted) access can continue from Līpalu Street. However, a proposed new pathway through the expanded cemetery can be evaluated to determine if it would be a better and more convenient alternative.

4. The Preservation Plan should address: 1) allowing community members and organizations to engage in regular maintenance of Kawa'ewa'e Heiau and the surrounding cultural landscape and historic sites; 2) working with the community to develop educational and interpretive programs; and 3) working with practitioners to protect culturally significant hula and medicinal plants.
5. Allow for restoration of the cultural landscape including but not limited to 'auwai and historic terraces. The 'auwai associated with the well and seep (Honua 3 site) could be included in restoration and management activities. [Pet. Ex. 43, p. 6]

9. **Visual Resources**

184. The project's impact on the visual character of the landscape surrounding the Petition Area was assessed by first identifying prominent public views oriented toward the Petition Area from public vantage points where the Petition Area may be visible. Two City planning documents, the *Coastal View Study* and *Ko'olau Poko Sustainable Communities Plan* were referenced to identify relevant established views and visual resources that should be evaluated in this analysis. [Pet. Ex. 6, p. 4-87]

185. The visual character of the Kāne'ohe ahupua'a is defined by the region's natural features and land uses. These natural features include the Ko'olau mountain range, vegetated inland hills, and Kāne'ohe Bay. Residential land uses dominate the



area immediately north of the Petition Area. This area is generally comprised of single and two-story single-family homes. The area generally south and east of the Petition Area is natural in character due to the presence of the Oneawa hillside, which is undeveloped and densely vegetated. The area generally west of the Petition Area is largely open space in character due to the presence of landscaped areas of HMP and the nearby Pali Golf Course. The Petition Area encompasses a portion of Oneawa Hills. These areas include the hillside slopes and parts of the summit ridgeline. These areas are undeveloped and natural in character given the presence of a non-native forest on the hillside slopes and basins. [Pet. Ex. 6, p. 4-87-88]

186. The *Coastal View Study* subdivides the island into viewsheds, which are entire surface areas visible to an observer from a viewing point. The study's He'eia section of the Kāne'ohe Bay Viewshed applicable to the Petition Area did not identify any important coastal views, scenic lookouts, or pertinent resources. Coastal views identified occur along sections of Kāne'ohe Bay Drive and Kamehameha Highway located north and away from the Petition Area (past Castle High School). The H-3 Freeway leading into the MCBH Kāne'ohe has a section providing lateral views across the bay, however, this section of the freeway is makai (northeast) of HMP and the Petition Area and no significant views from H-3 occur within the vicinity of the Petition Area. [Pet. Ex. 6, p. 4-88]

187. The *Ko'olau Poko Sustainable Communities Plan*, adopted in August 2017, provides general policy guidance for land use actions by the City. This plan identifies the general orientation and vantage points of prominent views within the Ko'olaupoko district. Two views were identified that are applicable to the Petition Area and consist of the Pali Lookout and makai views from the H-3 Freeway. [Pet. Ex. 6, p. 4-88]

188. The Pali Lookout viewing point consists of a panoramic makai-oriented view of the broad Kāne'ohe community. Expansive views are of concentrated urbanized areas combined with large open space areas of the Ko'olau Golf Club, City's Pali Golf Course, Oneawa Hill, other undeveloped areas, and Kāne'ohe Bay in the background. HMP's existing landscaped cemetery lawns are visible as well as a small portion of the Hawai'i Veterans Cemetery. Existing portions of the Petition Area including the heavily vegetated western lower flank slopes of Oneawa Hills are not prominent but are visible from this view. [Pet. Ex. 6, p. 4-89]

189. Continuous makai views from the H-3 Freeway of the broader Kāne'ohe community is available. Makai of the Tetsuo Harano Tunnels, views of the Kāne'ohe viewshed are similar to that from the Pali Lookout, particularly for drivers heading towards Kāne'ohe. Expansive views are mainly of Kāne'ohe Bay due to the highway's concrete guardrails blocking portions of the view from a vehicle. Oneawa Hill and the ridgeline extending toward the MCBH Kaneohe are also landforms prominent in the view. The Petition Area is visible for a very short period (about 10 seconds) for

Kāne'ohe bound vehicles. Views of the Petition Area then disappear for motorists due to the presence of dense vegetation and tall trees along the highway obscuring views.

[Pet. Ex. 6, p. 4-89]

190. Other public views of the Petition Area were identified from surrounding public vantage points. Kamehameha Highway near HMP provides existing views of the Oneawa hillside and the Petition Area. Motorists traveling northbound on Kamehameha Highway (Kāne'ohe bound) toward HMP can see existing portions of HMP as they pass beneath the overpass of the H-3 Interchange. However, a high, vegetated berm on the makai side of the highway present obscures views of HMP and the Petition Area until one nears the cemetery's main entrance. Vehicles travelling in the southbound direction would similarly have views of HMP and the Petition Area blocked. [Pet. Ex. 6, p. 4-91]

191. The first public view along Kamehameha Highway identified is oriented makai toward the Petition Area at HMP's main entrance across of Halekou Road. Existing HMP facilities and landscaped areas are visible from this view. However, the dense vegetation and tall trees associated with the undeveloped portions of the Hawai'i State Veterans Cemetery property block most views of the Petition Area. Traveling further north from this main entrance, tall trees and vegetation present along the highway obscure all views of HMP and the Petition Area until vehicles reach the second HMP entrance across of Mahinui Road. At this second entrance, dense vegetation and

tall trees associated with the undeveloped portions of the Hawai'i State Veterans Cemetery similarly block most views. [Pet. Ex. 6, p. 4-91]

192. Four views of the Petition Area from vantage points located within the Pikoiloa Subdivision were identified. Views are at the intersection of 'Ōhāhā Place and 'Ōhāhā Street, a stationary spot further east on 'Ōhāhā Street, and a stationary spot on Lupo Street. The fourth vantage point is located further north from these views at the intersection of Namoku Street and Mokulele Drive. As a whole, the densely vegetated hillside with tall trees currently separating nearby residences from the Petition Area are prominent features within these views. Mature trees populating Oneawa Hills are also visible and are the only aspects of the Petition Area visible. [Pet. Ex. 6, p. 4-93]

193. Three views oriented toward the Petition Area were identified along Kāne'ohe Bay Drive. Looking toward the Petition Area from this roadway, existing commercial buildings associated with the Windward City Shopping Center block views. Castle High School facilities, including the school's classroom buildings, street fencing, and tennis courts, are the dominant features along this road. Only a small portion of the Petition Area's upper elevations that consists of heavily vegetated portions of Oneawa hillside are visible from this view. Residential homes and existing trees also dominate and block views of the Petition Area along this roadway. [Pet. Ex. 6, p. 4-93] A view of the Petition Area and Oneawa hillside from Kāne'ohe Bay Drive's

intersection with the Bay View Golf Course entrance is blocked by residential homes and trees. [Pet. Ex. 6, p. 4-97]

194. Grading activities for cemetery expansion would substantially alter existing landforms and vegetation within the Petition Area. The Cultural Preserve would have minor landscaping improvements that should not significantly alter current conditions or views of this densely vegetated area. Grading would result in extensive cut and fill activities for the cemetery expansion to achieve a more balanced topography having slopes no greater than 20% to allow for pedestrian access among gravesites. The western section of the cemetery expansion is where the most significant changes to existing topographic conditions would occur. Areas graded would be landscaped with turf grass, altering the view of the existing canopy forest character within the Petition Area. [Pet. Ex. 6, p. 4-97 to 98]

195. Although the project would alter the Petition Area's present visual appearance and forest character, this change would not have an adverse effect on existing views and viewing locations identified. The landscaped and open space character of the expanded cemetery would complement the existing HMP and Hawai'i State Veterans Cemetery already present within the backdrop of the larger Oneawa hillside. The alteration of the Petition Area's view is one of many elements comprising the visual quality of the visible landscape. In comparison, other potential urban

developments, such as residences or commercial uses, would create a greater visual change and contrast in character. [Pet. Ex. 6, p. 4-98]

196. Within the larger viewshed, the landscaped open space view and character of the expanded cemetery is similar to several other existing surrounding uses such as the Pali Golf Course, Ko'olau Golf Club, HMP, and State Veterans cemetery. The Petition Area would not be visible at several public viewing sites along roadways. Existing dense vegetation and tall trees, particularly within the State's Veterans cemetery's property along the hillside, would screen views of the expanded cemetery particularly from upland areas looking toward Kāne'ohe Bay. [Pet. Ex. 6, p. 4-98]

197. More importantly, elevations within the cemetery expansion would generally be lower or the same elevation as existing surrounding uses making its view difficult to see from many areas and along roadways. The grading plan for the cemetery expansion would predominantly result in elevations ranging from about 230 to 350 feet AMSL. Only a very small area of the cemetery expansion near the Cultural Preserve would have grading improvements extending up to the 400-foot elevation. In comparison, the Hawai'i State Veteran Cemetery ranges in elevation from 280 to 370 feet AMSL. HMP's existing cemetery ranges in elevation from 270 to 340 feet AMSL. [Pet. Ex. 6, p. 4-98]

198. From the Pali Lookout and H-3 Freeway, only a portion of the 27.5-acre cemetery expansion area would be visible from the view of the Kāne'ohe region

viewshed because most of the area would be blocked by existing dense vegetation and trees associated with the State cemetery. Although the Petition Area would change visually, the overall character of the larger Kāneʻohe region viewshed from this vantage point would not be significantly impacted. The distance of the Petition Area from this lookout view diminishes its effect as compared to the Koʻolau Golf Club and Pali Golf Course in the immediate distance. The landscaped turf of the cemetery expansion would also be generally compatible with views of the existing landscaped open space character of HMP, Veterans cemetery, and golf courses. [Pet. Ex. 6, p. 4-98 and 99]

199. The project's impact on the view from Kamehameha Highway would not be significant. A small portion of this graded and landscaped area of the expanded cemetery would be visible, resulting in a slight and relatively minor change to the character of this view. Existing dense vegetation and tall trees from the State's Veterans cemetery's property screens views of the expanded cemetery. In addition, the lower elevation of the cemetery expansion relative to the existing HMP cemetery further blocks views. [Pet. Ex. 6, p. 4-100] Prominent views identified along Kāneʻohe Bay Drive would similarly not be significantly impacted. As previously discussed, the Petition Area is predominantly not visible from this road due to existing residences, vegetation, Castle High School, and commercial uses obscuring views. [Pet. Ex. 6, p. 4-101]

200. The project would not significantly impact views of the landscape seen from vantage points directly downslope of the Petition Area in the Pikoilua subdivision.

Existing views from these locations would essentially be unchanged. The Petition Area would continue to be obscured by mature trees on the vegetated hillside separating nearby residences from the Petition Area. Although a small number of mature trees seen in the background of the view would be removed through cemetery expansion improvements, the majority of trees visible are located on the nearby hillside that would remain. Therefore, the landscape visible from these views would remain largely unchanged after project implementation. [Pet. Ex. 6, p. 4-101]

## **I. Environmental Quality**

### **1. Noise**

201. CENSEO AV+Acoustics (CENSEO) conducted an environmental noise assessment and prediction report to identify noise impacts to the area surrounding the Petition Area due to project construction, increase in vehicular traffic on the nearby roads, and long-term operation of the future cemetery expansion area. Mr. Todd Beiler is the owner of CENSEO and provided written testimony on the study results. [Pet. Ex. 40, p. 1] Ambient noise level measurements, which included both long-term and short-term noise measurements, were conducted to document the existing ambient noise environment in the Petition Area vicinity. Noise measurements were taken at one long-term noise measurement location and four short-term noise measurement locations. Three of the short-term noise measurement locations were near existing residences. [Pet. Ex. 40, p. 1]



202. Long-Term Measurement Results. Dominant ambient sound sources included park maintenance activities and vehicles with the highest measured sound levels due to trucks or construction vehicles on the cemetery grounds. Dogs, roosters, air traffic (MCBH Kāneʻohe Bay), and vehicular road traffic from Kamehameha Highway also contributed to ambient noise levels. Overall, the average day sound noise level was 54 dBA and the average night sound level was 47 dBA. [Pet. Ex. 40, p. 2]

203. Short-Term Measurement Results. Traffic noise was the dominant noise source at the measurement site located near the northern entrance of HMP along Kamehameha Highway (70 dBA average sound level). Noise from HMP maintenance vehicles, although intermittent, resulted in an average sound level of 48 dBA at the measurement site in the northwest corner of Ocean View Garden. Ambient noises within HMP typically originated from traffic along Kamehameha Highway or from animals (e.g. roosters). Ambient noise levels measured along the adjacent neighborhood (sites at the end of ʻŌhāhā Place and Līpalu Place) were primarily due to dogs or roosters in the surrounding area. Proximity to nearby roads and associated vehicular traffic had less of an influence on sound levels because neighborhood vehicular traffic was minimal. [Pet. Ex. 40, p. 2]

204. The main noise effects from the project would be from short-term construction activities as compared to the long-term operation of the cemetery expansion. [Pet. Ex. 40, p. 2]

205. Long-Term Impacts. The primary long-term noise sources during normal daytime operations in the cemetery expansion area would be maintenance vehicles and equipment. This includes lawn mowers and grass trimmers. Maintenance equipment, while likely audible if used near residences, are mobile and temporary noise sources. This equipment is not regulated for noise at the federal, state, or local levels. Maintenance equipment would only be used daytime during normal business hours, which is consistent with current cemetery operations. [Pet. Ex. 40, p. 2]

206. Backhoes used to create burial spaces occur only daytime during normal business hours. Typical backhoe operations at 25 feet or further from the property line are expected to be less than the 90 dBA construction noise limit identified under the Federal Transit Authority's (FTA) criteria for residential land use areas. The State DOH does not specifically quantify allowable construction noise levels. Instead, the State DOH specifies the times at which construction activities may occur. [Pet. Ex. 40, p. 3]

207. Cultural practices and restoration activities occurring within the Cultural Preserve are not expected to generate significant noise, and noises generated would likely not occur on a daily basis. Traffic noise within the cemetery as a whole is expected to increase by only one decibel due to the proposed project. Although noise from internal cemetery traffic may be audible at nearby homes, noise events should be intermittent. HMP closes its gates to traffic at night, so nighttime traffic noise from within the cemetery would not occur. [Pet. Ex. 40, p. 3]

208. Short-Term Impacts. Predictions assume the earthwork phase of project construction would be the main noise concern, and equipment incorporated into noise level predictions were the loudest types expected to be used for this project. The lowest worst-case predicted noise level during the project's earthwork phase was 74 dBA for noise sensitive receivers located 470 feet from the project earthwork boundary. The highest worst-case predicted noise level was 91 dBA for noise sensitive receivers located 85 feet from the earthwork boundary. Both of these noise sensitive receiver locations are residential uses located generally downslope from the Petition Area's northern boundary. [Pet. Ex. 40, p. 3]

209. With the exception of receptors located 85 feet from the project earthwork boundary, construction noise levels are not expected to exceed the FTA's noise impact threshold of 90 dBA for residential land uses. Actual noise levels experienced would vary greatly and are primarily based on a function of the distance of the receiver from the noise source, sound attenuation between the noise source and the receptor, and the quantity of noise sources (construction equipment) used. The duration of the construction activities does not have an impact on the noise level. A common simplified method of predicting approximate sound level reductions due to increasing distance is that the sound level is reduced by 6 dB when the distance (between source and receiver) is doubled. Subjectively, a 6 dB reduction is considered to be a "significant difference." [Pet. Ex. 40, p. 4]

210. Given the analysis results, construction activities would inevitably result in short-term, minor to moderate noise impacts. The extent of impacts would vary depending on the stage of construction, wind direction, equipment used, distance to the receptor, and activity duration. Therefore, the ability to control construction noise levels relates primarily to the duration and time of construction activities. [Pet. Ex. 40, p. 4]

211. Construction noise levels should not be high enough to cause hearing loss for nearby residents. The Federal Occupational Safety and Health Administration (OSHA) sets the Permissible Exposure Limit at 90 dBA of noise exposure over an 8-hour time period, while an exposure of 85 dBA (for an 8-hour period) is commonly used as threshold to begin monitoring noise levels. Hearing risk exposure of 85 dBA, or less, for eight hours per day, followed by 10 hours of recovery time generally results in negligible risk to hearing. In comparison, average noise from a gas-powered lawnmower is about 90 dBA, measured at 4 feet from the lawnmower. Additionally, construction equipment usage would likely not occur continuously over a full eight-hour period. [Pet. Ex. 40, p. 5]

212. It is best practice for pile drivers and hydraulic breakers to not be used within 50 feet of normal residential buildings. Care should be taken when using pile drivers and hydraulic breakers within 100 feet of structures. Therefore, the 150-foot buffer away from residences would minimize such construction vibration issues. [Pet. Ex. 40, p. 5]

213. In situations where construction noise exceeds, or is expected to exceed, the State's "maximum permissible" property line noise levels, a construction noise permit must be obtained from the State DOH. This state-issued permit is typical for construction activities. The DOH noise permit does not limit the noise level generated at the construction site. Rather, the permit limits the times noisy construction can occur.

[Pet. Ex. 40, p. 5] Specific permit restrictions for construction activities are:

1. No permit shall allow construction activities emitting noise in excess of the maximum permissible sound levels before 7:00 AM and after 6:00 PM of the same day, Monday through Friday.
2. No permit shall allow construction activities emitting noise in excess of the maximum permissible sound levels before 9:00 AM and after 6:00 PM on Saturday.
3. No permit shall allow construction activities emitting noise in excess of the maximum permissible sound levels on Sundays and holidays.

[Pet. Ex. 40, p. 5]

214. Measures proposed to mitigate noise impacts during the construction phase consist of the following:

1. A construction noise permit should be obtained from the State DOH for construction equipment operation.

2. The contractor should use reasonable and standard practices to mitigate noise, such as using mufflers on diesel and gasoline engines and using properly tuned and balanced machines. Unavoidable noise impacts may be reduced by using equipment intermittently or by blocking the line-of-sight from noise sources to noise-sensitive receptors with barriers or other designed noise mitigation measures. Conducting noise and/or vibration monitoring during construction can also help quantify any potential exposures to noise and vibration.
3. Possible source control methods including substitution of quieter construction methods or equipment when possible should be considered during the design phase. These methods can be applied to most construction equipment.
4. Possible source control methods would be considered during the design phase as part of contractor requirements, and such methods can be applied to most construction equipment. [Pet. Ex. 40, p. 6]
5. If vibration from a hydraulic breaker is disturbing to nearby residents and generating neighborhood complaints, the vibration inducing activities should be scheduled for the middle of the day when many residents are least likely to be home. [Pet. Ex. 40, p. 6]

2. **Air Quality**

215. Air quality in the State can generally be characterized as relatively clean and low in pollution. Excluding exceedances due to volcanic emissions, the Island of O'ahu was in attainment of all National and State AAQS in 2015. Tradewinds are predominant throughout the year, typically carrying emissions and other air pollutants from inland areas toward the ocean. [Pet. Ex. 6, p. 4-82]

216. Air quality in the region surrounding the Petition Area is primarily affected by vehicular carbon monoxide (CO) emissions occurring along major roadways or highways that include Kamehameha Highway, Kāne'ohe Bay Drive, Mokulele Drive, and the H-3 Freeway. Air quality is affected to a lesser extent by commercial and industrial uses, such as the quarry on the other side of Oneawa hillside. Residential uses also surround HMP and the Petition Area and are not significant sources of airborne pollutant regulated under National and State ambient air quality standards (AAQS). [Pet. Ex. 6, p. 4-82]

217. The main project effects on air quality would be from short-term construction activities as compared to the long-term activities occurring within the cemetery expansion. The only source of potential long-term effects on regional air quality would be carbon dioxide from localized traffic congestion at the HMP driveway intersections. Activities at burial sites within the expanded cemetery would not generate long-term impacts potentially affecting air quality. [Pet. Ex. 6, p. 4-85]

218. Two types of air pollution that could result in short-term air quality impacts are: 1) fugitive dust emission from project construction activities and vehicle movement; and 2) exhaust emission from on-site construction equipment. Fugitive dust emissions could result from earth moving activities associated with cemetery grubbing and grading activities, construction of related retaining walls, and development of site improvements such as roadways and drains. [Pet. Ex. 6, p. 4-85]

219. Construction activities would comply with State of Hawaii's air pollution controls prescribed under State DOH's rules (Chapter 11-59, HAR "Ambient Air Quality Standards" and Chapter 11-60.1, HAR "Air Pollution Control"). These rules prohibit visible emission of fugitive dust from construction activities at the property line. A dust control plan would be prepared if adverse air quality impacts are anticipated for implementation by the contractor. [Pet. Ex. 6, p. 4-82] To mitigate short-term construction effects on air quality within the Petition Area from emissions of fugitive dust, the following mitigative measures are proposed.

1. A dust control plan would be prepared during the project's design phase for implementation by the contractor in compliance with State regulations. Dust control measures may involve implementation of BMPs potentially consisting of a watering program, use of windcreens, and use of temporary rock pavers for heavily traveled areas with exposed soils.



2. Construction vehicles would be properly operated, and all equipment properly maintained to minimize exhaust emissions.
3. The movement of heavy construction equipment and workers would occur outside peak traffic periods. Design plans would be coordinated with the project contractor to ensure movement of equipment and workers does not occur during commuter peak traffic hours. [Pet. Ex. 6, p. 4-86]

**J. Adequacy of Public Services and Facilities**

**1. Water Service**

220. The Petition Area is an undeveloped site that is not currently serviced by on-site potable water infrastructure. The City Board of Water Supply (BWS) provides potable water service to existing sections of HMP, the Hawai'i State Veterans Cemetery, and surrounding uses via a network of water transmission mains. [Pet. Ex. 32, p. 17]

Water provided to HMP is by the City's potable water system from two separate connections. The main connection point is located at the entrance to HMP in the vicinity of Mahinui Road and Kamehameha Highway. A 6-inch meter on Kamehameha Highway services HMP and has a capacity of 1,000 gallons per minute (gpm). Ocean View Garden's irrigation system is serviced via a separate 1-inch lateral coming off a 5/8-inch meter from Kumakua Place. [Pet. Ex. 32, p. 18]

221. The majority of existing water demand is primarily related to irrigation of the cemetery's landscape, with a smaller portion of water used for cemetery water features and visitor needs (i.e. filling individual containers for burial plots). An average of 10,000 gallons of water a day is used by HMP for irrigation of their existing 80-acre cemetery. Irrigation water use varies depending upon weather conditions, and HMP's irrigation demand has generally been fairly low to moderate due to the wetter climate conditions in Windward O'ahu. [Pet. Ex. 32, p. 18]

222. Site improvements propose to connect the cemetery expansion area's irrigation system to the City's existing waterline at the end of Kumakua Place. The existing 5/8-inch meter serving Ocean View Garden will need to be upgraded to a 2-inch water meter to accommodate the additional water flow needed. This additional demand will not have a significant impact on the City's potable water system. Irrigation will only be needed during drier periods, such as during summer months, or during periods of low rainfall. [Pet. Ex. 32, p. 18]

223. It has been estimated that an average of about 3,500 gpd of water will be needed for irrigation of the expanded cemetery. This estimate is based upon an average use of 125 gallons per acre per day for the Ocean View Garden. With this increased demand, the total average daily water use for irrigation with the project will be 13,500 gpd. The City BWS has further confirmed that the existing water system is adequate to accommodate the proposed expansion of the cemetery in an October 11, 2018 comment

letter on the Draft EIS. [Pet. Ex. 32, p. 18] The Petitioner will pay the water system facilities charges for resource development, transmission, and daily storage when water is made available. Construction drawings and the project construction schedule will be coordinated with BWS for review during the project design phase to minimize impacts to the City's water system. [Pet. Ex. 32, p. 19]

## **2. Wastewater Facilities**

224. The City Department of Environmental Services (DES) provides municipal wastewater collection and treatment in the Kāne'ohe district via a system of wastewater pump stations and sewer lines. The Petition Area is currently undeveloped and is not served by the City's wastewater system. [Pet. Ex. 6, p. 5-4]

225. Sewer mains and laterals are located within City streets in the vicinity of HMP and the Petition Area and include an 8-inch transmission line in Lipalu Street. This infrastructure collects wastewater from nearby residential subdivisions. There are no sewer lines within Kamehameha Highway fronting the HMP site. As a result, HMP is not serviced by this municipal system, and wastewater generated by HMP's present facilities are treated by an approved septic system. [Pet. Ex. 6, p. 5-4 to 5-5]

226. The project would not have a significant impact on the existing municipal wastewater infrastructure. The project does not include improvements, such as restrooms, that would generate increased wastewater impacting the City's system. As a

result, improvements to existing municipal wastewater infrastructure would not be required. [Pet. Ex. 6, p. 5-6]

### 3. Drainage Facilities

227. Existing municipal drainage facilities are available within the residential subdivisions surrounding HMP and within the subdivisions below the Petition Area. These facilities were generally developed as part of existing residential subdivisions. The municipal system generally consists of various storm drains within roadways, inlets, and catch basins that collect runoff from the street. [Pet. Ex. 32, p. 9]

228. The Petition Area ranges in elevation from 172 feet to 412 feet AMSL, and existing slopes vary from 0% to 100%. The western portion of the site, adjacent to Ocean View Garden, includes a ridgeline directing stormwater runoff both towards and away from the project site. The slopes of the hillside are up to 90% in some areas. Moving east across the Petition Area, the slopes decrease significantly to an average of 25% to 30%. The watershed area encompasses the 54-acre Petition Area and a contributing off-site drainage area above this site for a total of about 93 acres. The mauka land comprising this watershed extends up to an elevation of 670 feet MSL. [Pet. Ex. 32, p. 9]

229. Existing Drainage System Serving Petition Area. Within the Petition Area, stormwater runoff generally sheet flows downslope in a north-northwesterly direction following natural ephemeral drainageways and lower lying areas based upon the site's topography. Stormwater sheet flows toward the Pikoilua subdivision,

eventually discharging into the City's catchment structures located on Līpalu and Ōhāhā Streets. [Pet. Ex. 32, p. 10] Six catch basins exist along the Petition Area's border with residential properties, with two larger structures situated at the end of Līpalu Street and Ōhāhā Place. Runoff collected by the City's system is eventually channeled into Kāwā Stream, and later discharges into Kāne'ōhe Bay. [Pet. Ex. 32, p. 12]

230. Stormwater sheet flowing toward the Pikoiloa subdivision is first collected by a system of concrete drainage swales designed to collect and convey stormwater to existing City catch basin structures. The concrete drainage swales run along the mauka boundary of residences, are within private property, and are the responsibility of individual property owners (residents) to maintain. Site inspections throughout the years have shown these swales have been poorly maintained by property owners. Neighbors have complained about flooding when these swales become overwhelmed. [Pet. Ex. 32, p. 10]

231. The City's system was designed to meet current, undeveloped conditions within the Petition Area for the 10-year, 1-hour storm. This existing drainage system is adequate for the current, undeveloped conditions within the Petition Area. However, it may have little excess capacity to accommodate additional peak runoff. [Pet. Ex. 32, p. 12]

232. Current Evaluation of Petition Area. The undeveloped Petition Area is densely vegetated with large canopy trees in the western portions of the area. The

canopy, primarily invasive albizia trees, prevents sunlight from filtering through, and is prevalent on the western portion of the site, where minimal ground cover is evident and some erosion is occurring. The eastern portion of the site has a smaller canopy trees, more ground cover, and heavy vines over boulders due to more sun exposure.

[Pet. Ex. 32, p. 13]

233. Drainage calculations were prepared in accordance with the City DPP's *Storm Drainage Standards* (August 2017) for the 10-year and 100-year, 1-hour storm events. The drainage area studied encompasses both the 53.45 acre Petition Area and the surrounding upslope watershed area for a total of 93.2 acres (shown on Exhibit JH-C.). [Pet. Ex. 32, p. 13] The Storm Drainage Standards only require the use of the 10-year, 1-hour recurrence interval for drainage areas of 100 acres or less. [Pet. Ex. 65, p. 1]

234. There are five sub-drainage areas (Areas A to E). Area E is the largest and includes the central and eastern portions of the cemetery expansion along with the Cultural Preserve. Area E corresponds to the Lipalu watershed that drains into the City's catchment basin at the end of Lipalu Street. The other four drainage areas serve the smaller western watershed area that discharge into the City's catchment basin at the end of 'Ōhāhā Place. [Pet. Ex. 32, p. 13]

235. The Petition Area also consists of offsite drainage areas in addition to onsite drainage areas. Offsite drainage areas include land mauka of the Petition Area, to

an elevation of 670 feet MSL. A standard runoff coefficient of 0.35 is used for storm events, representing a conservative value for timber lands of moderate to steep slopes. Flows for the 10- and 100-year storms are estimated to be approximately 110 cfs and 174 cfs, respectively. [Pet. Ex. 32, p. 13]

236. Project Effects on Drainage Conditions. The project's grading activities within the cemetery expansion area will change ephemeral drainageways and drainage patterns. Stormwater will continue to travel in a north-northwesterly direction downslope through the Petition Area for eventual discharge into the City's existing drainage facilities. However, this change in drainage patterns will not have an adverse effect on overall drainage conditions. The rate of stormwater runoff and the volume of runoff being discharged from the Petition Area will be reduced with the project. Overall, grading improvements will benefit existing drainage conditions by reducing the volume of stormwater runoff and improving the quality of water being discharged. [Pet. Ex. 32, p. 13]

237. Project improvements proposed will change existing site conditions from undeveloped forest to a predominantly landscaped grass area. Changes to topographic conditions will create a more level site with sloped grades of less than 20%. Therefore, runoff rates are expected to decrease with the reduction in slope and landscaped groundcover increasing permeability. Reduction of stormwater runoff rates will result in a corresponding reduction of runoff volumes. Landscaped groundcover will enhance

stormwater infiltration and include creating a vegetated buffer strip serving as a low impact development (LID) improvement. [Pet. Ex. 32, p. 13]

238. The project results in a 2% total increase in impervious area within the 92.3-acre drainage area. This is due to 2 acres of impervious surface being added as new roadways within the cemetery expansion. The Cultural Preserve will remain unchanged; the remainder of the Petition Area will consist of grassed cemetery lands, and undeveloped mountainous terrain mauka of the Petition Area. [Pet. Ex. 32, p. 14]

239. The project will result in the reduction of the runoff flow rate due to: 1) a decrease in the slope of the large open portion of the site; 2) improved site permeability with turf grass landscaping; 3) lower runoff coefficient; 4) lower runoff velocities; and 5) increased time of runoff concentration within the Petition Area. These factors result in a reduction of the 10-year and 100-year storm water flows by 4.2 cfs and 7.9 cfs, respectively. [Pet. Ex. 32, p. 14]

240. The resulting decrease in runoff rate will also produce a decrease in runoff volume. Providing a well landscaped, stable surface for stormwater infiltration will contribute to the reduction in the overall volume of water leaving the site. The project will reduce the volume of stormwater runoff by 18,665 cubic feet (cf) and 29,180 cf for the 10-year and 100-year storms, respectively. This amounts to a beneficial 5.5% decrease in runoff volumes. [Pet. Ex. 32, p. 14]



241. Proposed Drainage Improvements. The City adopted new “Rules Relating to Water Quality” under their Administrative Rules, Title 20, Department of Planning and Permitting in August 2017. Under these rules, the cemetery expansion is defined as a “Priority A” project, which involves land disturbance of one or more acres. Post-construction stormwater requirements include incorporation of appropriate LID strategies and source control BMPs, including on-site retention of the water quality volume (WQV) or biofiltration BMPs for the remaining portion of the WQV not retained on-site. [Pet. Ex. 32, p. 16]

242. The design storm runoff depth is one inch for basins and the water quality volume is about 12,700 cf for the 33.6-acre of disturbed area within the Petition Area. Therefore, planned drainage improvements include the use of two LID strategies and source control BMPs in order to meet the new requirements: 1) retention/detention basins, and 2) vegetative buffers. [Pet. Ex. 32, p. 16]

243. Cemetery access roads will be graded to direct runoff to drain inlets located adjacent to these roads that will convey stormwater to lower portions of the site where three permanent retention/detention basins are proposed. These and other basins shall initially be constructed to handle sediment laden runoff resulting from grading activities during construction. Three of these basins will then remain as permanent post-construction LID improvements. The basins function as a detention system and retain stormwater for water quality purposes. [Pet. Ex. 32, p. 16]

244. An additional 12,700 cf of storage and infiltration will be accommodated by the modifications planned. Stormwater from the cemetery expansion will be detained and allowed to infiltrate within the permanent retention/detention basins. These basins retain a temporary pool of water that is designed to drain between storm events, while the remainder of the water is drained through a controlled outlet. These outlets will be designed to allow a basin to drain completely within 48 hours when full, and 24 to 36 hours when half full. An emergency spillway will also be designed to allow the basin to safely overtop when experiencing a larger storm event. [Pet. Ex. 32, p. 16] A summary description of the retention/detention basins is provided:

1. Detention Basin A. A smaller detention basin of about 1,500 square feet in size is located on the western end of the Petition Area. This basin is intended to detain stormwater runoff for the area along the edge of the Ocean View Garden site and the western edge of the cemetery expansion.
2. Detention Basin B. This detention basin is about 4,500 square feet in size and is located in the northwest area of the cemetery expansion. This basin is intended to collect stormwater runoff from this western area where the hillside will be excavated and will drain into the existing drainage culvert behind residences at 'Ōhāhā Place.

3. Detention Basin C. This detention basin is about 5,000 square feet in size and is located in the central area of the cemetery expansion site near the end of Līpalu Street. This basin is intended to generally collect stormwater runoff from the central portion of the Petition Area. This basin will have a drain connecting to the existing drainage culvert at the end of Līpalu Street. [Pet. Ex. 32, p. 17]

245. The project will also have a vegetated buffer strip between the cemetery and lower lying areas. A vegetated buffer strip is a grassy slope vegetated with turf grass that is designed to accommodate sheet flow and removes pollutants by vegetative filtration. Stormwater will eventually drain from all detention basins through outlet structures directing flow to existing catchment structures on Līpalu Street and 'Ōhāhā Place. No impacts are expected to these catchment structures because of the projected reduction in runoff volume and flow rates. Given that City's existing drainage structures presently appear to lack capacity beyond the 10-year storm event they were designed for, proposed improvements will beneficially impact the structures and reduce potential flooding for downstream residences. Based upon proposed drainage improvements, no further mitigative measures are necessary. [Pet. Ex. 32, p. 17]

#### 4. Solid Waste Facilities

246. The City Department of Environmental Service (DES), Refuse Division operates 10 waste processing areas on O'ahu that include six drop-off convenience

centers, three refuse transfer stations, and the Waimānalo Gulch Sanitary Landfill. City solid waste disposal facilities also include the Honolulu Program of Waste Energy Recovery (H-POWER) waste-to-energy facility located in Campbell Industrial Park.

[Pet. Ex. 6, p. 5-16]

247. Waste collection at HMP is currently provided by a private waste hauler and is taken to City disposal facilities at H-POWER or the Waimānalo Gulch Sanitary Landfill. The Petition Area is located within the City's Ko'olaupoko collection district that serves the area along the entire windward coastline from Waimānalo to Kahuku. The Petition Area is currently not serviced by municipal refuse collection services because it is undeveloped. [Pet. Ex. 6, p. 5-16]

248. City collected green waste is transported to Hawaiian Earth Products (HEP) that is an offsite green waste processing operation. HEP has three facilities on O'ahu, with one facility located in Waimanalo. These facilities process green waste from homeowners, commercial yard services, and government and commercial sources into compost and mulch. Green waste generated by commercial and governmental sources are not collected by the City. Green waste generated from commercial and governmental sources is banned from landfill disposal. Therefore, private entities such as HMP, must dispose of green waste themselves or contract disposal through a private hauler. HMP operational protocol does not prescribe removal of greenwaste generated

from onsite landscaping activities. This greenwaste is left to decay onsite. [Pet. Ex. 6, p. 5-16, 517]

## **5. Transportation Facilities**

249. HMP is serviced by two existing unsignalized driveway intersections: 1) Kamehameha Highway, Mahinui Road, and HMP Driveway 1 (main entrance); and 2) Kamehameha Highway, Halekou Road, and HMP Driveway 2. Traffic counts were taken at these study intersections during the weekday commuter morning and afternoon peak periods, along with a weekend (Saturday) mid-day peak period. Traffic projections with and without the project were developed for the study year 2040. [Pet. Ex. 41, p. 1]

250. Major roadways at the Petition Area intersections consist of Kamehameha Highway, Halekou Road, and Mahinui Road. Kamehameha Highway is a four lane, two-way, divided arterial State roadway generally oriented north-south, and has a posted speed limit near study intersections of 35 miles per hour (mph). Kamehameha Highway serves as the regional north-south travel corridor for vehicles in Kāneʻohe. [Pet. Ex. 41, p. 1]

251. Mahinui Road is an undivided two-way, two-lane City roadway running in an east-west direction. This road forms the western leg of a four-way unsignalized intersection with Kamehameha Highway and HMP Driveway No. 1. Halekou Road is an undivided two-way, two-lane City roadway running in an east-west direction. This

road forms the western leg of a four-way unsignalized intersection with Kamehameha Highway and HMP's Driveway No. 2. Private, internal roads within HMP are used for visitors and daily cemetery operations. These private roads are owned and maintained by HMP. [Pet. Ex. 41, p. 2]

252. Existing movements at the Kamehameha Highway and Mahinui Road/HMP Driveway 1 intersection operate at Level of Service (LOS) D or better during the weekday and weekend peak hours, with the exception of minor street movements that in some cases operate at LOS E during the weekday morning and afternoon peak periods. All movements at the intersection of Kamehameha Highway and Halekou Road/HMP Driveway 2 operate at LOS D or better with the exception of minor street movements that operate at LOS E/F during peak hours. [Pet. Ex. 41, p. 2]

253. Vehicles making left-turns from the minor east-west approaches (HMP driveways and City roads) are able to use the space created by Kamehameha Highway's wide median to turn onto or off of the highway in two stages. During the weekday AM and PM peak traffic hour, both minor street left-turn movements onto Kamehameha Highway were executed during a gap in traffic which is suspected to occur when the upstream and downstream traffic signal minor movement phase is occurring. Significant queueing was not observed at either of the study intersections. [Pet. Ex. 41, p. 2]

254. Generally, traffic within the HMP vicinity was lighter during the Saturday midday peak hour compared to weekday commuter peak hour traffic. Left-turn movements from minor streets were easier to execute as longer gaps were observed along Kamehameha Highway. No significant queuing was observed at the study intersections. [Pet. Ex. 41, p. 3]

255. The project is forecast to generate approximately only 25, 27, and 71 additional trips (entering and exiting) during the weekday morning, afternoon, and Saturday peak hours, respectively. With the project, all study intersections would operate at a LOS similar to baseline (without project) conditions for Year 2040 given the project's relatively small traffic increase. While Kamehameha Highway's turning movements would operate with little delay, some of the minor movements would continue to experience LOS E or F during all peak hours of traffic. [Pet. Ex. 41, p. 3]

256. The State Department of Transportation (DOT) concluded that the project is not anticipated to significantly impact State highways, and the project's percentage contribution of traffic to be about 2% of total future 2040 traffic, therefore, the Project's pro-rata share for a new traffic signal being considered for implementation by DOT at Kamehameha Highway and Halekou Road is negligible and not necessary. [OP Ex. 10; Pet. Ex. 28]

257. The following measures would be implemented by the Petitioner:

1. Restripe HMP's two westbound driveway approaches to Kamehameha Highway to provide better exiting traffic flow. Striping would delineate a shared left/through and separate right-turn lane to reflect current operating laneage. [Pet. Ex. 6, p. 5-39]
2. Provide appropriate traffic control plans in the event certain cemetery activities cause traffic issues at access driveways. [Pet. Ex. 41, p. 3]

6. **Parks and Recreational Facilities**

258. Existing public recreational facilities that include public parks and golf courses are in the general vicinity of the Petition Area. HMP was not designed nor established to support active or passive recreational use by the public. However, over the years, residents have been using HMP for passive recreation (walking, jogging, and dog walking) on HMP's internal roadways, typically during early morning and late afternoon hours. HMP continues to allow such passive recreational activities. [Pet. Ex. 6, p. 5-40]

259. Within the Petition Area, there are no permitted passive recreational activities occurring. There have been instances of unauthorized activities (trespassing) occurring within the Petition Area, for activities such as paintball and hiking. In particular, hiking groups continue to travel into the Petition Area and other parts of HMP's property while undertaking the Oneawa Ridge hike. This has led to concerns for



HMP regarding safety, liability, and potential endangerment of cultural areas. Although some hiking groups have received authorization from HMP to hike into their property, many groups have not obtained authorization and are considered trespassers by HMP.

[Pet. Ex. 6, p. 5-42]

260. The project would not have any long-term impact on existing recreational facilities in the general vicinity of HMP. Project implementation would not generate increased demand for use of recreational facilities in the surrounding area. A fence would be installed around much of the Petition Area, which would allow HMP improved capacity to manage access into the area and prevent unauthorized recreational activities from continuing. Passive recreational activities (walking, jogging, and dog walking) would continue to be allowed within the cemetery expansion area similar to existing portions of HMP. Passive recreational activities would not be allowed in the Cultural Preserve or undeveloped portions of the Petition Area surrounding the cemetery expansion area. [Pet. Ex. 6, p. 5-43]

261. Short-term construction of the project should not significantly impact surrounding recreational facilities or activities occurring there. Furthermore, the contractor implementing these improvements would comply with State DOH regulations and related permit conditions, reducing the likelihood and severity of such nuisances on recreational activities. [Pet. Ex. 6, p. 5-44]

## **7. Medical**

262. Adventist Health Castle (AHCS) is the primary medical facility serving Windward O'ahu and is located in Kailua on the southwest corner of the Kalaniana'ole Highway and Kailua Road intersection. Comparatively smaller, private medical centers in the vicinity of HMP are located closer to the Kāne'ohe town center. The Kaiser Permanente Ko'olau Medical Office is located along Kamehameha Highway about 0.7 miles north of HMP. [Pet. Ex. 6, p. 5-44]

**8. Educational Facilities**

263. Schools within the general vicinity of HMP and the Petition Area are Kāne'ohe Elementary School, James B. Castle (Castle) High School, and Hawai'i Pacific University's Hawai'i Loa campus. Kāne'ohe Elementary School is located about 250 feet north of the northern end of HMP along Mokulele Drive. This school is separated from the cemetery by a residential subdivision. Castle High School, is located about a half mile north of the Petition Area along Kāne'ohe Bay Drive. Castle High School is generally separated from the Petition Area by a residential neighborhood comprised predominantly of single-family homes. Hawai'i Pacific University's Hawai'i Loa campus is located about 1.5 miles southeast of HMP and the Petition Area. This 135-acre private university provides on-campus housing with full academic year accommodations. [Pet. Ex. 6, p. 5-45, 5-46]

264. The project does not include new residential units that would increase Kāne'ohe's resident population and subsequent demand on educational facilities and

instructional staff at nearby schools. Cemetery activities would mainly consist of families visiting burial plots and private funeral services held that would not impact educational facilities. Activities occurring at the Cultural Preserve consist of cultural landscape restoration and cultural practices that would not disrupt or impact existing school facilities. [Pet. Ex. 6, p. 5-46]

265. Activities associated with short-term construction of site improvements and associated facilities may generate some short-term construction noise from equipment. Fugitive dust emissions would also be generated from these activities. Construction related impacts should not impact educational facilities in the surrounding area given their distance from the Petition Area. The contractor may obtain a construction noise permit that includes restrictions to help mitigate potential short-term noise impacts. [Pet. Ex. 6, p. 5-46, 5-47]

## **9. Police and Fire Protection**

266. The HMP and Petition Area fall within the Honolulu Police Department (HPD) District 4 operations bureau. The district is divided into four sectors, with Kāneʻohe designated as Sector 3. The main District 4 station is located in Kāneʻohe and is about 1.5 miles north of the Petition Area. [Pet. Ex. 6, p. 5-47]

267. The City HFD has two fire stations in the Kāneʻohe area. The fire station located closest to the Petition Area is Station 17, located in the Kāneʻohe town center, approximately three miles north of HMP. Station 17 serves as the headquarters of

Battalion 3 and is equipped with an engine company and ladder company. [Pet. Ex. 6, p. 5-47] The City's Emergency Medical Services (EMS) responds to requests for ambulance assistance. City EMS service is comprised of 20 ambulances providing medical coverage for all of O'ahu. The Petition Area falls within District 2 that encompasses East O'ahu. [Pet. Ex. 6, p. 5-47]

268. No long-term impacts to HPD, HFD, and EMS services are anticipated from the project because it would not increase residential housing or visitor units and therefore not place increased demand on police, fire, or EMS services. Cemetery expansion consists primarily of landscaped grounds that would not create increased fire risk. Access roads proposed within the cemetery expansion area would facilitate access for emergency support vehicles, if necessary. [Pet. Ex. 6, p. 5-48] The following measures would be included as part of the design process.

1. Dimensioning requirements (width and vertical clearance) for City fire access would be incorporated into the design, as applicable.
2. Design plans would be coordinated with the Honolulu Fire Department for review, as appropriate. [Pet. Ex. 6, p. 5-48]

## **10. Utilities**

269. Electrical service is provided to HMP by the Hawaiian Electric Company (HECO) via overhead subtransmission lines located on utility poles. These utility poles are routed along roadways in the vicinity of the Petition Area. Primary subtransmission

lines in the area provide between 4,000 and 12,000 volts of power (4 to 12kV).

Subtransmission lines servicing HMP are routed along Kamehameha Highway along HMP's southern boundary. Underground distribution lines connected to this network provide power to HMP facilities. The Petition Area is undeveloped and is not serviced by existing power or communications facilities. [Pet. Ex. 6, p. 5-18]

270. Telephone and cable service are provided to HMP facilities by Hawaiian Telcom and Spectrum, respectively. These services are provided from overhead lines typically routed on utility poles shared with HECO utility lines. These overhead communication lines connect with applicable HMP facilities via lines routed through underground utility ducts. [Pet. Ex. 6, p. 5-18]

## **11. Sustainability**

271. The project aligns with this guideline as it achieves a balance between the need to develop additional burial space and the need to sustain Petition Area natural resources. A social benefit from project is providing additional burial space to address an anticipated burial space shortfall on O'ahu. Adverse environmental impacts from project implementation are avoided through mitigative measures incorporated into the project design and implemented during project construction. The project's potential impact to Petition Area natural resources was considered in the design of project improvements. Consideration of these resources resulted in the incorporation of

measures to mitigative adverse impacts to these resources. Therefore, the project serves as an example of planning that respects the State's natural resources. [Pet. Ex. 6, p. 6-43]

**K. Commitment of State Funds and Resources**

272. In respect to improvements to the Petition Area, State funds and resources are not included nor programmed at this time. [Pet. Ex. 7]

**L. State Land Use District**

273. The Petition Area is presently designated as state land use Conservation District. [Pet. Ex. 6, p. 6-1] The Petition Area is within the General (76%) and Limited (24%) Subzones. The Limited Subzone area is associated with the upper slopes of the Oneawa hillside. [Pet. Ex. 6, p. 6-1]

274. The proposed Project's request to be reclassified to the Urban District is consistent with HRS Section 205-2, where 205-2 provides that the Urban District shall provide uses provided by ordinances of the County and cemetery use is provided for in the City's zoning code. [Tr. 1/22/20 181:1-181:9]

**M. Conformance with Urban District Standards**

275. The proposed reclassification of the Petition Area is in general conformance to HAR section 15-15-18, standards for determining "U" Urban District Boundaries as follows:

Criterion No. 1. The Petition Area is surrounded by city-like urban land uses, services, activities, and infrastructure as discussed in Section 1.3 of the FEIS. Cemeteries

comprise “other related land uses” that are only allowable within the Urban District, and HMP and Hawai’i State Veterans Cemetery are situated adjacent to the property and Petition Area. The Pikoiloa residential subdivision is situated immediately north of the Petition Area. The heavy industrial Kapa’a Quarry is located east southeast of the property. There are existing roadways and highway facilities serving these cemeteries and surrounding uses, utilities (e.g. water lines), and several other urban services in the nearby Kāne’ohe area (e.g. schools, Pohai Nani retirement home, commercial and retail). Therefore, the project reflects a reasonable extension of city-like urban related uses. Furthermore, the City’s *Ko’olau Poko Sustainable Community Plan* designates this Petition Area for urban expansion intended for cemetery use within the plan’s Community Growth Boundary. [Pet. Ex. 6, p. 6-10]

Criterion No. 2. Cemetery expansion improvements and the establishment of the Cultural Preserve would not increase the population of the Kāne’ohe area or lead to additional undesirable stress on centers of trading and employment as well as basic services. The first factor under this standard is intended to evaluate whether areas proposed for the Urban District are proximate to infrastructure, public facilities and services, and centers of trading and employment. As discussed under Criterion No. 1 above, there are existing centers of trading, employment, and urban-related activities in the surrounding vicinity of the Petition Area. The Petition Area is adjacent to established residential neighborhoods and cemetery uses. Additionally, employment

opportunities are readily accessible in Kāne'ohe and public facilities, services, and utilities are already in existence in the area. [Pet. Ex. 6, p. 6-10, 611]

There is significant existing infrastructure facilities and services provided in the immediate vicinity as discussed in Chapter 5 of the FEIS. Circulation networks already provide convenient and reasonable access and services to HMP and other surrounding land uses (e.g. Kamehameha Highway, H-3 Freeway). There is water service already provided to HMP, and the City BWS indicated there is available capacity to serve the cemetery expansion area. The cemetery expansion and Cultural Preserve would not require additional wastewater infrastructure or contribute increased flows to the existing wastewater system in the area. Additional solid waste generated by increased flowers used for gravesite visits would continue to be processed as already managed by HMP. The project would have a beneficial effect on the City's existing drainage system serving the Pikoiloa subdivision by decreasing storm water runoff rates and volumes, detaining runoff, and improving water quality within Kāwā Stream. [Pet. Ex. 6, p. 6-11]

Overall, the cemetery expansion would have minimal long-term effect on public facilities. The cemetery expansion would be designed to provide appropriate access to the area for fire protection and emergency vehicles, and additional gravesite visits are expected to have minimal effect on their ability to provide protection services. Therefore, the expansion of the Urban District for this project is reasonable and beneficial given consideration of existing infrastructure facilities along with public



facilities and services provided in the surrounding area. Finally, the project area is designated for urban expansion by the City's *Ko'olau Poko Sustainable Community Plan*.

[Pet. Ex. 6, p. 6-11]

Criterion No. 3. The Petition Area includes lands with reasonably satisfactory topography, would improve existing drainage conditions, is free from natural hazards and unstable soil conditions, and would not have adverse environmental effects that cannot be minimized or mitigated. The overall Petition Area has reasonably satisfactory topography to implement the cemetery improvements proposed with only a few areas having steeper slopes being affected. [Pet. Ex. 6, p. 6-11]

Grading improvements would make the Petition Area suitable for inclusion cemetery expansion and visitation access within the Urban District having slopes no greater than 20% suitable for pedestrian access. The project would improve drainage conditions by decreasing area slopes, improving site permeability with turf grass landscaping, and detain runoff and sediment through construction of retention/detention basins. The grading plan would improve site conditions by reducing storm water runoff volume and velocity and decrease potential downstream flooding. The drainage system would improve stormwater management by designing site improvements for the 100-year storm. Drainage conditions of Petition Area lands would therefore be appropriate for inclusion in the Urban district. [Pet. Ex. 6, p. 6-12]

The Petition Area is not in an identified flood hazard area or tsunami inundation zone. The geotechnical study assessed rockfall and debris flow risk within the Petition Area. The study did not identify evidence of prior debris flow or landslide activity within the Petition Area characteristic of unstable soil conditions. While areas of the Petition Area are subject to rockfall hazard, preliminary design measures were identified to mitigate this risk. Such measures (e.g. rockfall catchment ditch) should provide a high level of safety against rockfall hazards. Landscaped grass areas created for the cemetery would be a significant improvement removing existing vegetation litter debris and exposed soil and gravel/cobble talus from the site. The modified topography would reduce steeper upper slopes and create a gentler topography that would eliminate potential landslide hazards. Therefore, the Petition Area is reasonably free from natural hazards, and proposed plans would improve site conditions further reducing possible effects. [Pet. Ex. 6, p. 6-12]

Criterion No. 4. The Petition Area is located contiguous to urban areas on its northern and western boundaries. The Petition Area abuts the existing Ocean View Garden cemetery on its western boundary. Residential developments within the Pikoiloa subdivision are located adjacent to the Petition Area's northern boundary. Both the Ocean View Garden and Pikoiloa subdivision are within the Urban District. [Pet. Ex. 6, p. 6-12]

Criterion No. 5. The "Community Growth Boundary" defines and contains the extent of urbanized or "built" portions of the Sustainable Communities Plan area, and is intended to ensure an adequate supply of land is provided to support Ko'olaupoko's established suburban and rural communities while protecting land outside the boundary for agricultural and open space preservation. The growth boundary was revised to include the area associated with the Petition Area. Therefore, the Urban District designation is reasonable and appropriate to the Petition Area as it is located within the designated growth boundary. [Pet. Ex. 6, p. 6-13]

Criterion No. 6. The Petition Area conforms to Urban District standards under Criterion's 1 and 5. [Pet. Ex. 6, p. 6-13]

Criterion No. 7. The Petition Area is contiguous to existing Urban District areas and designated for future urban expansion under the City's *Ko'olau Poko Sustainable Communities Plan's* Community Growth Boundary. Reclassification of the Petition Area to the Urban District will not lead to scattered urban development given its proximity to existing urban uses. The project would not require additional investment in public infrastructure or services. [Pet. Ex. 6, p. 6-13]

Criterion No. 8. The Petition Area is desirable and suitable for urban purposes due to its location and site conditions for cemetery expansion supporting HMP. The project description justified the need for such an expansion and identified other stewardship and management components supporting the wise and reasonable

use of this area (e.g. Cultural Preserve and conservation easement). Furthermore, the City's *Ko'olau Poko Sustainable Communities Plan* designates this Petition Area for urban expansion intended for cemetery use. [Pet. Ex. 6, p. 6-14]

Existing topographic conditions within the Petition Area vary and exceed 20% slopes in some areas. Slope conditions within the cemetery expansion area range from 25% to 30% in the eastern basin area to 90% at the hillside adjacent to Ocean View Garden. Project implementation would grade lands within the cemetery expansion area to slopes no greater than 20% to ensure the area is suitable for pedestrians. [Pet. Ex. 6, p. 6-14]

The project would improve the Petition Area's current drainage conditions by decreasing area slopes, improving site permeability with turf grass landscaping, and detaining runoff and sediment with construction of retention/detention basins. The grading plan would improve site conditions by reducing storm water runoff volume and velocity, decreasing potential downstream flooding, and improving water quality within Kāwā Stream. The project would improve stormwater management by designing site improvements for the 100-year storm, instead of the required 10-year storm event. The design phase would develop construction plans that would be reviewed and approved by jurisdictional government agencies. These plans would include BMPs and other measures to minimize and mitigate short-term construction-related effects. [Pet. Ex. 6, p. 6-14]

Topographic conditions would remain similar to existing conditions within the Cultural Preserve. Slopes within this portion of the Petition Area vary significantly as one travels from lower to higher elevations and exceed 20% in many areas. The Cultural Preserve would not be open to the general public. Measures to ensure the health, safety, and welfare of the individuals authorized to access the Cultural Preserve will be determined by the preparation of a preservation plan. [Pet. Ex. 6, p. 6-14]

N. **Conformance with The Goals, Objectives, and Policies of The Hawai'i State Plan**

276. Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. State objectives and policies relevant to the proposed Project are discussed.

**Section 226-3: Overall Theme.** The project is consistent with the State Plan's guiding principles and values. These principles and values concern individual and family self-sufficiency; social and economic mobility; and community or social well-being. The project aids O'ahu families by providing options regarding the type of disposition and remembrance of deceased loved ones. The project provides additional burial space in anticipation of a shortfall in available space on O'ahu due to the growing and aging population coupled with limited number of cemetery spaces. If this shortfall

occurs, O'ahu families interested in burying deceased loved ones at HMP or locally on O'ahu may be unable to do so or have to pay higher costs due to the shortage.

Therefore, the project allows O'ahu families improved capacity to pursue and achieve their burial and remembrance related interests. Having additional burial space supports the State Plan principle primarily related to social self-sufficiency and fulfillment because it addresses an important community function that most families don't typically prepare for. [Pet. Ex. 6, p. 6-16]

Burial and remembrance customs are important social practices. Provision of additional burial space expands burial options on O'ahu, improving the capacity of O'ahu families to achieve fulfillment of burial and remembrance related social practices. Social well-being on Oahu is enhanced as the provision of additional burial space enhances the physical environment by providing O'ahu residents greater capacity and options to engage in burial and remembrance activities. The project further enhances social well-being by developing burial space near an existing cemetery, providing social benefits for families wishing to be interred near deceased relatives already interred at HMP. [Pet. Ex. 6, p. 6-16]

Section 226-4: State Goals. Project improvements will inevitably alter the character of the Petition Area's physical environment. However, it would not be in a manner that adversely impacts the well-being of O'ahu residents. The project will

maintain and enhance the stability of Petition Area natural systems through mitigative measures incorporated into the project design. [Pet. Ex. 6, p. 6-16]

Retention/detention basins will improve off site stormwater drainage conditions by detaining runoff and allowing water to infiltrate before eventually being discharged. Reducing the steep slopes of the hillside would improve storm water runoff by reducing volumes and velocity. The cemetery's grassed landscape would improve infiltration and slow runoff, reduce erosion and sediment transport, and enhance the water quality of downstream water resources and the stability of associated natural processes. This would ensure O'ahu residents utilizing these water resources of Kāne'ohe Bay are not physically negatively affected, and existing residences along Kāwā Stream are not significantly impacted due to improved drainage conditions upstream within the Petition Area. [Pet. Ex. 6, p. 6-16]

Changing the existing alien forest dominated by introduced plant species to turf grass for burial plots would not have an adverse effect on botanical resources. The cemetery provides a significant community benefit, reflects a clean environment (lawn), involves a passive use that is relatively quiet in activities, and provides a well-managed area that is compatible with the surrounding environment and adjacent cemeteries. [Pet. Ex. 6, p. 6-17]

The project will positively improve life in our community and enhance the social well-being of O'ahu residents by providing needed cemetery space in anticipation of a

burial plot deficit due to a growing and aging population. Social well-being will be enhanced as provision of this space provides O'ahu residents greater flexibility and options to engage in their chosen burial disposition of family members, support the heritage factor that is important to families, and memorialization remembrance activities. [Pet. Ex. 6, p. 6-17]

Allowing the Ko'olaupoko Hawaiian Civic Club, or other local Native Hawaiian Organization, to manage and steward the Cultural Preserve supports native Hawaiian cultural practices, nourishes participation and activities within the Hawaiian community and their cultural values and enhances participation in caring for such resources. Although this property is privately-owned, other cultural organizations, cultural practitioners, and interested persons may participate in cultural practices in coordination with the Ko'olaupoko Hawaiian Civic Club, all of which support management and stewardship activities. [Pet. Ex. 6, p. 6-17] [Tr. 6/24/20 66:1-67:3]

Section 226-5: Objectives and Policies for Population. The project does not affect these objectives and policies. [Pet. Ex. 6, p. 6-17]

Section 226-6: Objectives and Policies for the Economy. Acceptable working conditions and standards will be maintained for workers employed in the construction and long-term operation and maintenance of the cemetery expansion area. Affirmative action and non-discrimination measures will be complied with in the hiring process for workers employed in the construction and long-term operation and maintenance of the



cemetery expansion area. [Pet. Ex. 6, p. 6-18] The construction and long-term operation of cemetery expansion improvements is expected to result in direct and indirect positive impacts to O'ahu's economy. [Pet. Ex. 6, p. 6-19]

Intangible resources associated with the Petition Area, such as scenic views, would not be significantly impacted by the project. The Petition Area is one of multiple elements comprising the scenic beauty of associated views. Although the Petition Area would change visually due to grading and turf grass landscaping of the area, the overall scenic beauty and character of important public viewing corridors along major highways, viewsheds and landforms, and scenic public views would remain relatively unchanged as the existing open space character of this area would remain apparent. [Pet. Ex. 6, p. 6-19]

The landscaped and open space character of the expanded cemetery would complement the existing HMP and Hawai'i State Veterans Cemetery already present within the backdrop of the larger Oneawa hillside. Within the larger viewshed, the landscaped open space view and character of the expanded cemetery is similar to several other existing surrounding uses, such as the Pali Golf Course and Ko'olau Golf Club. The Petition Area would not be visible at several public viewing sites along roadways. Existing dense vegetation and tall trees, particularly within the State Veterans Cemetery's property along the hillside, would screen views of the expanded

cemetery particularly from upland areas looking toward Kāneʻohe Bay. [Pet. Ex. 6, p. 6-19]

Section 226-7: Objectives and Policies for the Economy-Agriculture.

Contemporary soil data indicates the majority of the Petition Area has low utility for agricultural production. This area is not identified as important agricultural lands and is not zoned for allowing commercial agricultural production. Cemetery expansion in the Petition Area would therefore not result in the loss of agriculturally suitable lands.

[Pet. Ex. 6, p. 6-20]

Section 226-11: Objectives and Policies for the Physical Environment (Land, Shoreline, Marine).

The project is a prudent use of land-based resources based upon an important community need and will not impact shoreline and marine resources associated with the Kāwā watershed. Prudent use refers to acting with care and thought for the future, and the project includes several measures reflecting such prudent use.

This includes creating a Cultural Preserve, establishing a conservation easement, implementing drainage improvements that would improve current storm water conditions, and protecting the endangered damselfly and associated habitat. Impacts to land-based resources, including the endangered Blackline Hawaiian Damselfly, would not occur as appropriate minimization measures will be implemented. [Pet. Ex. 6, p. 6-

23]

Unique environmental resources identified within the Petition Area will not be impacted by the project. The site consists of an existing alien forest dominated by introduced plant species. Resources include endemic 'Ōhi'a Lehua growing within the cemetery expansion area. Seeds or cuttings from extant plants could be collected and used in replanting efforts in the cemetery expansion area or the Cultural Preserve to ensure the long-term presence of this endemic plant species. [Pet. Ex. 6, p. 6-23]

Unique historic sites are being preserved within the Cultural Preserve, and the seep area is being preserved to support the endangered damselfly. Mitigative measures are proposed for topographic changes to the hillside reducing its height and steepness. Plans would improve current storm water runoff and potential flooding conditions as a result of reduced runoff velocity and volume, increased infiltration, and water quality through detention basins. [Pet. Ex. 6, p. 6-23]

Natural resources associated with the Petition Area were considered in the project design to ensure these resources are not impacted. The project includes the prudent use of this site and resources reflecting actions proposed with care and thought for the future. This includes creating a Cultural Preserve supporting the management and stewardship of the area and historic sites and establishing a conservation easement to ensure the preservation and stewardship of remaining areas of the larger property. [Pet. Ex. 6, p. 6-23]

Section 226-12: Objectives and Policies for the Physical Environment (Scenic, Natural Beauty, Historic). The project was designed in consideration of significant natural and historic resources in the Petition Area. Culturally significant plant species disturbed by grading activities could be used to landscape the proposed Cultural Preserve, ensuring the continued presence of these species and accessibility by cultural practitioners. The preservation plan associated with the Cultural Preserve would guide the preservation and restoration of archaeological resources found within Preserve boundaries. The Preserve would provide space for the civic club, other organizations, and cultural practitioners to conduct cultural practices as well as potential educational programs under the management of the Ko'olaupoko Hawaiian Civic Club. [Pet. Ex. 6, p. 6-25]

The project will not adversely impact the visual and aesthetic enjoyment of scenic views or important viewing locations associated with the Petition Area. The landscaped and open space character of the expanded cemetery would complement the existing HMP and Hawai'i State Veterans Cemetery within the backdrop of the larger Oneawa hillside. Additionally, existing dense vegetation and tall trees would be maintained, particularly along the hillside of the Hawai'i State Veterans Cemetery, which would screen of views of the expanded cemetery area. [Pet. Ex. 6, p. 6-26]

Section 226-13: Objectives and Policies for the Physical Environment (Land, Air, Water Quality). Natural resources would not be adversely impacted with some

resources improved through project implementation. During construction, a dust control plan with mitigation measures would be prepared. Grading and site improvements would improve site drainage conditions and water quality by decreasing slopes, reducing the runoff velocity (grass landscaping), decreasing runoff volumes, and increasing percolation. Retention/detention basins would allow temporary on-site retention of stormwater allowing pollutants and debris time to settle and improving the quality of stormwater runoff. [Pet. Ex. 6, p. 6-26]

Section 226-14: Objectives and Policies for the Facility Systems (General). The project is consistent with applicable State and City plans and this consistency is discussed throughout Section 6.1.2 of the FEIS, which includes the City's *Ko'olaupoko Sustainable Communities Plan*. [Pet. Ex. 6, p. 6-27]

Section 226-15: Objectives and Policies for the Facility Systems (Solid and Liquid Wastes). Public health and sanitation standards would be complied with during disposal of solid waste produced during project construction. These standards would also be complied with for the disposal of landscaping and cemetery maintenance greenwaste via onsite composting. [Pet. Ex. 6, p. 6-28]

Section 226-16: Objectives and Policies for the Facility Systems (Water). Consultation with the City BWS indicated existing municipal water facilities can accommodate the project. Additional water demand would be related to irrigation

during low rainfall periods as no facilities (i.e. restrooms) requiring water for domestic purposes would be developed. [Pet. Ex. 6, p. 6-28]

Section 226-20: Objectives and Policies for Socio-Cultural Advancement. The project would not result in environmental conditions that impact the health of surrounding residents. A dust control plan with associated mitigation measures would be prepared if necessary. Concrete outer burial containers would continue to be required and mitigate risk of seepage containing pathogens and formaldehyde into nearby environmental resources. [Pet. Ex. 6, p. 6-31]

Section 226-23: Objectives and Policies for Socio-Cultural Advancement - Leisure. The Cultural Preserve will foster the preservation of native Hawaiian cultural practices and needs of cultural practitioners that are important elements of Hawai'i's multi-cultural heritage. Cultural practices include traditional native Hawaiian burials that would be allowed with approval by HMP and documentation by the State DOH. Burials would follow the "clean burial" process approved under State law enacted in 2015. Landscaping of the Preserve with culturally significant native Hawaiian vegetation would assure that these resources continue to be available and accessible to cultural practitioners. [Pet. Ex. 6, p. 6-33]

Section 226-25: Objectives and Policies for Socio-Cultural Advancement - Culture. The stewardship of historic sites in the Cultural Preserve would increase the knowledge of Hawai'i's cultural heritage and perpetuation of traditional and customary

practices. The preservation plan guiding management and operation of the Cultural Preserve may allow for culturally oriented educational programs in the Preserve. Such programs would further support this policy by fostering increased knowledge and understanding of native Hawaiian cultural practices and history. Cultural activities include traditional native Hawaiian burial practices. Landscaping with plants of native Hawaiian cultural significance would ensure these are accessible for native Hawaiian cultural practices. [Pet. Ex. 6, p. 6-34]

Section 226-104: Population Growth and Land Resources; (b) Guidelines for Regional Growth. (1) This project would be developed near existing urban areas where public facilities are already located. Visitors can access the expanded cemetery area using existing transportation facilities, creating efficiencies because roadways development is not needed. Furthermore, the project site is consistent with the City's sustainable communities plan that designates this project area for urban expansion within the Community Growth Boundary. [Pet. Ex. 6, p. 6-39]

In addition to the Pikoiloa neighborhood, the Petition Area is also adjacent to other urban areas consisting of the present HMP and Hawai'i Veterans Cemetery. It should be noted that the HC&D Kapa'a Quarry providing aggregates and concrete mix is located on the other side of the Oneawa hillside. Other public facilities, such as water lines, are available and already serve HMP and the Hawai'i Veterans Cemetery. No public expenditures would be required for infrastructure facilities. [Pet. Ex. 6, p. 6-39]

(2) The Petition Area has low utility for agricultural production as indicated by contemporary soil data. Project implementation supports this guideline as cemetery expansion in this area will occur on non-essential agricultural land. The Petition Area does not include lands of importance under the State's Agricultural Lands of Importance to the State of Hawai'i classification system. [Pet. Ex. 6, p. 6-38]

(3) The project would not significantly impact the Ko'olaupoko aquifer system's sustainable yield of 30 mgd. Water usage would be associated with irrigation and is expected to be minimal given Kāne'ohe's wet climate. Therefore, project water use is expected to minimally change total existing water usage, which is well below the aquifer's sustainable yield. [Pet. Ex. 6, p. 6-40]

(9) Cemetery expansion improvements are not proposed for critical environmental areas. The Petition Area consists of an alien forest dominated by introduced plant species. No federally delineated Critical Habitat is present on or adjacent to the Petition Area. Habitat for the endangered blackline Hawaiian damselfly would be preserved. The cemetery expansion design incorporates measures to prevent or minimize negative impacts on the surrounding environment. [Pet. Ex. 6, p. 6-40]

(10) The project would be consistent with this guideline that specifies identifying critical environmental areas in Hawai'i. There are no designated critical habitat or other critical environmental areas within the Petition Area. Habitat for endangered Blackline Hawaiian Damselfly would be preserved and minimization measures included to



ensure water flow to the seep continues and does not adversely impact the damselfly.

The Petition Area does not serve as nesting or foraging habitat for the Pueo. The Petition Area is not unique or a critical environmental area for the hoary bat, but standard minimization measures would be implemented during the during bat birthing and rearing season. [Pet. Ex. 6, p. 6-40] The project would improve the water quality of Kāwā Stream and existing drainage conditions serving this watershed. The cemetery expansion would improve stormwater infiltration and detain storm water runoff improving recharge areas and natural filtering. [Pet. Ex. 6, p. 6-41]

(12) The project would not adversely impact the environment and resources associated with the Petition Area due to mitigation measures proposed. These measures include retention/detention basins that ensure site stormwater runoff does not adversely impact the quality of downstream water resources. Groundwater resources are not expected to be severely diminished by project irrigation needs as water demand is expected to be minimal given Kāne'ohe's wet climate. In this manner, the project utilizes Hawai'i's limited land resources wisely by ensuring project development does not impact the quality or availability of the state's natural resources. [Pet. Ex. 6, p. 6-41]

(13) The project would not adversely impact shoreline, open space, and scenic resource associated with the Petition Area. Although the Petition Area is located a significant distance from the shoreline, retention/detention basins proposed through project site improvements would ensure site stormwater flow does not impact the

quality of associated water resources that flow to shoreline areas. The project is not expected to adversely impact scenic views of the Petition Area as the open space visual character of the surrounding area would remain unchanged. [Pet. Ex. 6, p. 6-41]

Section 226-108: Sustainability. The project aligns with this guideline as it achieves a balance between the need to develop additional burial space and the need to sustain Petition Area natural resources. A social benefit from project is providing additional burial space to address an anticipated burial space shortfall on O'ahu. Adverse environmental impacts from project implementation are avoided through mitigative measures incorporated into the project design and implemented during project construction. The project's potential impact to Petition Area natural resources was considered in the design of project improvements. Consideration of these resources resulted in the incorporation of measures to mitigative adverse impacts to these resources. Therefore, the project serves as an example of planning that respects the State's natural resources. [Pet. Ex. 6, p. 6-43]

Section 226-109: Climate Change. Sea level rise was considered in the project's environmental review. Extreme variation in precipitation rates are expected to result from climate change, with increased likelihood of drought and heavy rains anticipated. Drainage improvements providing better regulation of site runoff would alleviate impacts from heavy rains that could result in flash flooding, increased runoff, and greater sedimentation. [Pet. Ex. 6, p. 6-44]

**O. Relationship with Applicable Priority Guidelines and Functional Plans**

277. The State Functional Plans define actions for implementation of the Hawai'i State Plan through the identification of needs, problems and issues, and recommendations on policies and priority actions which address the identified areas of concern. The proposed reclassification request is consistent with the following State Functional Plans.

Conservation Lands: Issue Area II: Management; Objective IIB. The presence of the Blackline Hawaiian Damselfly and the utility of the seep as habitat for this species was considered in the design of cemetery expansion improvements. Related studies, including hydrological analysis of Petition Area groundwater resources, determined the project would not impact this habitat. Minimization measures are proposed as part of the project's design to ensure continued conveyance of groundwater to the seep that would preserve and protect this habitat. [Pet. Ex. 6, p. 6-44] Fencing would be constructed around the seep to ensure feral pigs and humans do not adversely impact this damselfly habitat. Regular monitoring of the seep would also occur to ensure water remains present and non-native predators are not found. [Pet. Ex. 6, p. 6-45]

Historic Preservation: Issue Area I: Preservation of Historic Sites; Objectives A, B, and C. The project AIS documented previously unidentified historic sites within the Petition Area. The historic significance of these sites was assessed under State historic significance criteria with recommendations provided regarding site listing eligibility for

the State register of historic places. The project aligns with the functional plan policy objective to expand the State's historic sites inventory program. The project proposes multiple recommendations to protect historic properties identified. The primary mechanism to protect these historic properties is the establishment of the Cultural Preserve. This area will allow in situ preservation of significant historic sites identified, such as Kawa'ewa'e Heiau. [Pet. Ex. 6, p. 6-45]

Maintenance of these sites would be guided by a preservation plan that discusses best treatment strategies to protect these historic properties. The preservation plan would also discuss guidance on the management, operation, and maintenance of the Preserve. Cultural landscape restoration work is an important component and would involve replacement of non-native and invasive vegetation with native plants. Enhancement of the cultural character of the surrounding landscape would also enhance historic properties present as all features collectively contribute to the cultural character of the landscape. The collective benefit gained from restoration of the cultural landscape could be considered an innovative method of managing extant historic properties. [Pet. Ex. 6, p. 6-45]

Recreation: Issue Area II: Mauka, Urban, and Other Recreational Opportunities;  
Objective II-A. Establishment of the Cultural Preserve would provide land area where native Hawaiian natural and historic resources in the Petition Area can be preserved. These natural resources include culturally significant plants, such as the Laua'e fern.

Establishment of culturally significant plants would ensure their continued presence. Significant historic sites also featured in the Preserve would ensure they are protected. Interpretive programs would be developed for this area through coordination between the stewarding organization and the community. [Pet. Ex. 6, p. 6-46]

**P. Conformance with Coastal Zone Management Program**

278. The Project is consistent with the applicable objectives of the Coastal Zone Management ("CZM") Program. All objectives and policies of the State CZM were reviewed to assess their relevance to the proposed project. Some objectives and policies are more pertinent to agency actions or responsibilities (i.e. §205A-2(b)(7) Managing Development), or address areas unrelated to the project (i.e. §205A-2(b)(6) Coastal Hazards). The other following objectives of the State CZM were determined to be inapplicable to the project: recreational resources, economic uses, public participation, and marine resources. [Pet. Ex. 6, p. 6-50]

Historic Resources. The location of significant historic sites was considered in the project's design. These historic sites were analyzed in the project AIS. The proposed Cultural Preserve is intended to protect, preserve, and restore historic sites identified within the Petition Area. Preserve boundaries were designed so they encompass the most significant historic sites, such as Kawa'ewa'e Heiau. Preservation of these significant historic sites will maximize site information retention potential. [Pet. Ex. 6, p. 6-50] The Preserve will be guided by a preservation plan to steward and maintain

resources in the Preserve area. The Cultural Preserve and associated preservation efforts would facilitate restoration of historic sites and the surrounding landscape. In this manner, the project supports the protection and restoration goals of this objective. [Pet. Ex. 6, p. 6-51]

Scenic and Open Space Resources. Project impacts on views oriented toward the shoreline where the Petition Area is visible were assessed. Although the visual character of the Petition Area would change due to cemetery expansion improvements, the Petition Area is one of many components contributing to the overall character of these views. Therefore, changes to the Petition Area's visual character would not significantly impact the quality of overall shoreline-oriented views. Cemetery expansion improvements were designed with consideration of the Petition Area's unique resources to ensure impacts to these resources were avoided. In this manner, the Petition Area was designed in alignment with the surrounding environment. [Pet. Ex. 6, p. 6-51]

Coastal Ecosystems. The project incorporates water quality management practices sensitive to associated freshwater and marine ecosystems. These ecosystems are located downslope and a considerable distance away from the Petition Area and would not be impacted by the project. The project impact on the water quality of associated water resources was assessed as part of analysis of the affected watershed. These water resources eventually flow into coastal water bodies and ecosystems. This

assessment documented that sediment reaching Kāwā stream would decrease after construction of cemetery improvements. Project design incorporated mitigative measures to avoid significant water quality impacts. These measures include retention/detention basins that serve as on-site stormwater management infrastructure. The basins function as nonpoint source water pollution control measures. [Pet. Ex. 6, p. 6-51] Implementation of these measures and other drainage improvements would prevent the project from disrupting or impacting associated coastal ecosystems. [Pet. Ex. 6, p. 6-52]

Coastal Hazards. Flood hazards were evaluated in the project's environmental review. The project's impact to site's flood hazard and residential areas downslope is expected to be minimal. Engineering analysis conducted for the project determined the project would reduce the volume of stormwater runoff draining offsite. This determination indicates flooding risk for coastal areas downslope from the project would decrease with the project's implementation. [Pet. Ex. 6, p. 6-52]

Beach Protection. The Petition Area is located approximately one mile from the coastline of Kāne'ōhe Bay, although there are no public beaches close to this bay. As a result, project improvements would not interfere with natural shoreline processes. Proposed drainage improvements such as retention/detention basins will mitigate water quality impacts on adjacent water resources that could result from project

implementation. These water resources would eventually flow into Kāneʻohe Bay. [Pet. Ex. 6, p. 6-52]

**Q. Conformance with the Countywide Policy Plan**

279. The City's Development Plan (DP) & Sustainable Communities Plan (SCP) program provides a regional level framework to implement the City's *General Plan* objectives. The Petition Area is located within the *Koʻolau Poko Sustainable Communities Plan* (KPSCP) area. An updated KPSCP was adopted by the Honolulu City Council in August 2017 as Ordinance No. 17-42, Revised Ordinances of Honolulu (ROH). As a result of the update, the proposed project is consistent with the KPSCP. [Pet. Ex. 29, p. 8] [DPP Ex. A1, p. 3] [DPP Ex. A1, p. 1] [Pet. Ex. 6, p. 6-52]

280. Under Section 6-1509 of the City Charter, development plans (including SCPs) consist of "conceptual schemes" for implementing and accomplishing the development objectives and policies of the City's *General Plan*. Further, these plans are to describe the desired urban character and the significant natural, scenic and cultural resources for several parts of the city to a degree which is sufficient to serve as a "policy guide" for more detailed zoning maps and regulations. [Pet. Ex. 6, p. 6-57] [DPP Written Testimony of Kathy Sokugawa]

281. Consistent with the City Charter, Ordinance 17-42 adopting the *Koʻolau Poko SCP* states (Section 1) that the plan presents a "vision" for future development consisting of "policies, guidelines, and conceptual schemes that will serve as a policy



guide" for public and private sector investment decisions. [Pet. Ex. 6, p. 6-57] The KPSCP is not a regulatory document and sets forth regional land use policies and guidelines, and specifically indicates that the Petitioner's lands are proposed for cemetery expansion. [DPP Written Testimony of Kathy Sokugawa]

282. The existing HMP site and Veterans Cemetery are designated as "Preservation Areas" by the KPSCP's Land Use Map and are within the "Community Growth Boundary." The Community Growth Boundary (CGB) is intended to define and contain the extent of developed or "built" areas of the SCP area's urban fringe and rural communities. Its purpose is to provide an adequate supply of land to support the region's established suburban and rural communities while protecting lands outside the boundary for agricultural and open space preservation values. [Pet. Ex. 6, p. 6-58]

283. This CGB was revised as part of the 2017 update of the KPSCP, to include the proposed HMP cemetery expansion. [Pet. Ex. 6, p. 6-58] Figure 6.3 from the FEIS shows a section of the Land Use Map applicable to this project (Map A-2, Land Use). [Pet. Ex. 6, p. 6-60] These maps are general and conceptual, and are not intended to be used to determine specific land use boundaries. The maps are considered illustrations of policies. [Pet. Ex. 6, p. 6-58] [DPP Written Testimony of Kathy Sokugawa]

284. The boundary description states that it encompasses "most of Hawaiian Memorial Park, the proposed expansion of the Hawaiian Memorial Park, the proposed Kawa'ewa'e Heiau cultural preserve, and the Hawai'i State Veterans Cemetery before

heading northeast to Kokokahi. The extension of the CGB in this area is solely limited to 28.2 acres for the expansion of the active cemetery area, and 14.5 acres for the proposed Kawa'ewa'e Heiau cultural preserve, and should not be construed to be suitable for any other urban-type development on the old 156-acre Pikoilua Tract." Therefore, the Petition Area for the proposed cemetery expansion of HMP is included within the SCP's CGB and is consistent with this plan by reflecting the extent of this future developed area. [Pet. Ex. 6, p. 6-58]

**R. City and County Zoning**

285. Permitted land uses and activities are prescribed under Chapter 21 Land Use Ordinance (LUO) of the City's Revised Ordinances of Honolulu, as amended (City and County of Honolulu 1990). The Petition Area is currently within the City's P-1, Restricted Preservation District that corresponds to the State's Conservation District designation. Upon reclassification to the Urban District, allowable uses, structures, and development standards would be governed by the P-2, General Preservation District regulations. The cemetery expansion project would be a permitted use within the Petition Area. [Pet. Ex. 6, p. 6-68]

286. Permitted Uses. Under the LUO's Table 21-3, Master Use Table, "cemeteries and columbaria" are permitted within the P-2 zoning district. Cemeteries and columbaria are defined as "interment facilities engaged in subdividing property into cemetery lots and offering burial plots or air space for sale. Included are cemetery

lots, mausoleums and columbaria. The following are permitted as accessory uses: crematory operations, cemetery real estate operations, mortuary services, floral and monument sales, and detached one-family dwellings to be occupied only by caretakers of the cemetery." [Pet. Ex. 6, p. 6-69]

287. Uses associated with the project meet the LUO definition of cemeteries and columbaria. These uses include burial spaces and small, private structures such as monuments and garden walls associated with burial spaces. The Cultural Preserve will function as a location where native Hawaiian cultural practitioners can inter deceased individuals in a traditional manner. Cultural practitioners choosing to inter deceased individuals in a traditional manner must apply for the appropriate disposition permit with the State DOH, and record the burials with HMP once the interment is authorized by the Ko'olaupoko Hawaiian Civic Club. Allowance of traditional burials and the offering of burial space within the Cultural Preserve would define the Preserve as a cemetery under the LUO. The Cultural Preserve would also be allowable within the P-2 district under this use. [Pet. Ex. 6, p. 6-69]

**S. County Special Management Area**

288. The Special Management Area (SMA) Use Permit is part of a regulatory system that is the cornerstone of the Hawaii CZM program. The City and County of Honolulu's SMA permitting system is a management tool to assure that uses, activities,

or operations on land within the SMA comply with the CZM objectives, policies, and guidelines. The Petition Area is not located within Honolulu's SMA. [Pet. Ex. 6 p. 6-69]

**T. Incremental Districting**

289. Development of the Property will be substantially completed within ten (10) years after the date of the Commission's approval and, therefore, incremental districting does not apply to this Project.

**III. RULINGS ON PROPOSED FINDINGS OF FACT**

Any of the findings of fact submitted by Petitioner or other parties not already ruled upon by the Commission by adoption herein, or rejected by clearly contrary findings of fact herein, are hereby denied and rejected.

Any conclusion of law herein improperly designated as a finding of fact should be deemed or construed as a conclusion of law; any finding of fact herein improperly designated as a conclusion of law should be deemed or construed as a finding of fact.

**IV. CONCLUSIONS OF LAW**

1. Pursuant to HRS Chapter 205 and the Commission Rules under HAR Chapter 15-15, and upon consideration of the Commission decision-making criteria under HRS § 205-17, the Commission finds upon the clear preponderance of the evidence that the reclassification of the Petition Area, consisting of approximately 53.449 acres of land, situated at Kaneohe, Island of Oahu, State of Hawai'i, Tax Map Key No. (1) 4-5-033: por. 001, to the State Land Use Urban District, and subject to the

conditions stated in the Order below, conforms to the standards for establishing the boundaries of the State Land Use Urban District, is reasonable, not violative of HRS § 205-2 and Part III of HRS chapter 205, and is consistent with the policies and criteria established pursuant to HRS §§ 205-16, 205-17, and 205A-2.

2. Article XII, Section 7, of the Hawai'i State Constitution requires the Commission to protect native Hawaiian traditional and customary rights. The State of Hawai'i reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by *ahupua`a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights. The State and its agencies are obligated to protect the reasonable exercise of customarily and traditionally exercised native Hawaiian rights to the extent feasible. *Public Access Shoreline Hawai'i v. Hawai'i County Planning Commission*, 79 Haw. 425, 450, n. 43, *certiorari denied*, 517 U.S. 1163 (1996).

3. The Commission is empowered to preserve and protect customary and traditional rights of native Hawaiians. *Ka Pa`akai O Ka`Aina v. Land Use Commission*, 94 Hawai'i 31, 7 P.3d 1068 (2000).

4. Article XI, Section 1, of the Hawai'i State Constitution requires the State to conserve and protect Hawai'i's natural beauty and all natural resources, including land, water, air, minerals, and energy sources, and to promote the development and

utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State.

5. Article XI, Section 3, of the Hawai'i State Constitution requires the State to conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency, and assure the availability of agriculturally suitable lands.

6. The Petition Area is not designated as Important Agricultural Land under Part III of HRS Chapter 205.

7. Article XI, Section 7, of the Hawai'i State Constitution states that the State has an obligation to protect, control, and regulate the use of Hawai'i's water resources for the benefit of its people.

8. Article XI, Section 1, of the Hawai'i State Constitution states that all public natural resources are held in trust by the State for the public benefit, and the State should make appropriate assessments and require reasonable measures to protect public natural resources, while applying a higher level of scrutiny where public natural resources are used for economic gain. *Kauai Springs v. Planning Comm. of the County of Kauai*, ICA No. 29440, April 30, 2013.

9. The Commission concludes that it has observed and complied with its duties arising from Article XI, Section 1; Article XI, Section 3; Article XI, Section 7; and Article XII, Section 7 of the Hawai'i State Constitution.

## V. DECISION AND ORDER

IT IS HEREBY ORDERED that the Petition Area, consisting of approximately 53.449 acres of land, situated at Kaneohe, Island of Oahu, State of Hawai'i, Tax Map Key No. (1) 4-5-033: por. 001, and shown approximately on Exhibit "A," attached hereto and incorporated by reference herein, shall be and is hereby reclassified to the State Land Use Urban District, and the State Land Use District boundaries shall be amended accordingly.

Based upon the findings of fact and conclusions of law stated herein, it is hereby determined that the reclassification of the Petition Area will not significantly affect or impair the preservation or maintenance of natural systems and habitats or the valued cultural, historical, agricultural, and natural resources of the area.

IT IS FURTHER ORDERED that the reclassification of the Petition Area from the State Land Use Agricultural District to the State Land Use Urban District shall be subject to the following conditions:

1. Petitioner shall establish a buffer between the proposed cemetery expansion, Pohai Nani project, and other adjacent residential properties in substantial compliance with representations made to the commission.
2. The Petitioner shall record with the State of Hawaii Bureau of Conveyances or the State of Hawaii Land Court, or both, as appropriate, a conservation easement and related declaration of restrictive covenant on the entirety of the 156.5-acre undeveloped portion of its Pikoiloo Tract property (TMK No. 4-5-033: 001) that limits, in

perpetuity, any other future development on the property, except for the 27.5-acre portion of the property that encompasses the proposed Hawaiian Memorial Park expansion site, and the 14.5-acre portion of the property that encompasses the proposed Kawaewae Heiau cultural preserve.

A copy of the recorded conservation easement and declaration of restrictive covenant shall be submitted to the City and County of Honolulu, Department of Planning and Permitting, prior to the issuance of any grading permit or any other permit which involves ground disturbance.

Should the Petitioner desire to make any major changes to the conservation easement or the declaration of restrictive covenant, a request to amend the Decision and Order shall be made to the LUC.

Petitioner shall formulate the easement and stewardship of the easement with an Accredited Land Trust for the long-term management of the area.

3. Prior to the issuance of a grading permit, the Petitioner shall submit to the City and County of Honolulu, Department of Planning and Permitting, a landscape plan and schedule of planting. Within the Petition Area, the loss of mature trees, defined as having a trunk diameter of six inches or greater, shall be replaced on a one-for-one basis, at a minimum, with preferably field stock trees that will have approximately similar size canopy coverage within a reasonable period of time. The location of replacement trees are not limited to the Petition Area.



4. Stormwater Management and Drainage Improvements. Notwithstanding other conditions related to the preservation of the habitat for the endangered Hawaiian damselfly, to the extent possible, Petitioners shall implement applicable BMPs to minimize infiltration and runoff from construction and vehicle operations, reduce or eliminate the potential for soil erosion and ground water pollution, and formulate dust control measures to be implemented during and after the development process in accordance with DOH guidelines and City ordinances and rules.

5. Air Quality Monitoring. Petitioners shall participate in an air quality monitoring program as required by the State Department of Health.

6. Established Gathering and Access Rights Protected. Pursuant to Article XII , Section 7, of the Hawaii State Constitution, Petitioner shall preserve any established gathering and access rights of Native Hawaiians who have customarily and traditionally used the Petition Area to exercise subsistence, cultural and religious practice, or for access to other areas.

7. Previously Unidentified Burials and Archaeological/Historic Sites. In the event that historic resources, including human skeletal remains, are identified during construction activities, all work shall cease in the immediate vicinity of the find, the find shall be protected from additional disturbance, and SHPD shall be contacted immediately. Without any limitation to any other condition found herein, if any burials or archaeological or historic sites are discovered during the course of construction of the

Project, all construction activity in the vicinity of the discovery shall stop until the issuance of an archaeological clearance from the SHPD that mitigation measures have been implemented to its satisfaction.

8. Petitioner shall consult with the cultural preserve manager to determine whether any of the rocks that were part of the historic features should be relocated to the cultural preserve after data recovery.

9. Petitioner shall establish the Cultural Preserve in conjunction with an appropriate Native Hawaiian group (Group). The Petitioner shall work with the community and the Ko'olaupoko Hawaiian Civic Club or other Native Hawaiian Organization operating in Ko'olaupoko in order to establish a preservation and management plan for the Cultural Preserve, in perpetuity.

10. Endangered Species. Petitioners shall undertake the following:

- a. A subsurface drainage system designed utilizing a herringbone configuration shall be implemented in the cemetery expansion area planned for fill activities above the seep. The system shall be comprised of three subsurface drainage mainlines with smaller subdrains branching laterally from them. This system will help ensure water flow to the well and seep is maintained.
- b. A well monitoring gauge shall be installed inside the wall of the well, located upslope from the seep to monitor water levels prior to, during and

after the project construction.

- c. Before earthmoving activities begin, a temporary water line shall be extended to the well from the cemetery's irrigation system. This irrigation line will serve as a short-term means of ensuring continued water flow to the seep. If the gauge indicates water levels have declined to levels potentially affecting the seep, water from the irrigation line to the well will be provided to stabilize water levels.
- d. Once earthmoving activities conclude, a permanent water line shall be extended to the well from the expanded cemetery's irrigation system. This irrigation line will serve as a long-term means of ensuring continued water flow to the seep. If the gauge indicates water levels have declined to levels potentially affecting the seep, water from the irrigation line to the well shall be provided to stabilize water levels.
- e. Small sticks upright and away from the edges of the waterlogged areas shall be placed along the seep to serve as molting safe zone for damselflies to avoid predation from crawling predators.
- f. Habitat boundaries currently shown in the Final Environmental Impact Statement (FEIS) shall be reviewed during project final design based upon more accurate data collected from a topographic survey, and consultation with U.S. Fish and Wildlife Service. Habitat boundary shall be revised as

appropriate. Fencing shall be constructed around the damselfly habitat boundary to protect the native damselfly from disturbance from feral pigs. Fencing shall consist of livestock panels appropriate to exclude pigs, with lower barbed strand to resist digging.

- g. Regular inspection of the seep shall occur to ensure the present flow of water is continued.
- h. Inspection of the seep shall be conducted at monthly intervals for one year prior to construction to establish baseline water flow conditions.
- i. Monitoring shall continue during construction, with the seep area inspected on a weekly basis to evaluate water flow in coordination with BMP (erosion control) measures.
- j. Once construction concludes, monitoring shall continue for six months to ensure continued water flow to the seep. Inspections shall occur weekly for the first three months, and every two weeks for the following three months.
- k. After the six-month monitoring period elapses, HMP staff shall conduct monthly water flow inspections.
- l. At any time, if water flow is documented to be outside of the range observed in the pre-construction monitoring phase, the temporary or permanent irrigation lines shall be used to provide supplemental water to

the seep. Additional mitigation measures shall be determined through consultation between the contractor, design team, State Department of Land and Natural Resources, U.S. Fish and Wildlife Service and other specialists.

- m. Regular inspections of the seep (at intervals described in 7a-k) shall also include surveys to ensure that non-native fish, specifically poeciliid fish, are not present within this habitat area. If fish are observed, surveyors shall notify experienced biologists to ensure prompt identification, and the U.S. Fish and Wildlife Service shall be consulted on what control measures can be implemented.

11. To avoid potential impacts to the Hawaiian hoary bat, the clearing of dense vegetation, including woody plants greater than 15 feet, along the periphery of the Petition Area shall not occur between June 1 to September 15 when bats may be carrying young and potentially could be at risk by such clearing activities.

12. Development Timetable. Petitioner shall provide the Commission with a development timetable prior to obtaining grading permits from the City.

13. Compliance with Representations. Petitioner shall develop the Petition Area in substantial compliance with the representations made to the Commission as reflected in the Findings of Fact, Conclusions of Law, and Decision and Order. Failure to so develop the Petition Area may result in reversion of the Petition Area to its former

classification, or change to a more appropriate classification.

14. Infrastructure Deadline. Petitioners shall complete construction of the proposed backbone infrastructure, which consists of the primary roadways and access points, internal roadways, on- and offsite water and electrical system improvements, and stormwater/drainage and other utility system improvements, within ten (10) years from the date of the Decision and Order approving the Petition.

15. Petitioner shall not dispose as waste material any excess soil at the PVT landfill as a result of grading work in the Petition Area.

16. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to development of the Property.

17. Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of Planning, and the Department of Planning and Permitting in connection with the status of the subject project and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission.

18. The Commission may fully or partially release the conditions provided herein as to all or any portion of the Property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.

19. Within seven (7) days of the issuance of the Commission's Decision and

Order for the subject reclassification, Petitioner shall: (a) record with the Bureau of Conveyances a statement that the Property is subject to conditions imposed herein by the Land Use Commission in the reclassification of the Property; and (b) shall file a copy of such recorded statement with the Commission.

20. Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances pursuant to section 15-15-92 Hawai'i Administrative Rules.

DATED: Honolulu, Hawai'i, August 26, 2020.

Of Counsel:

MATSUBARA, KOTAKE & TABATA  
A Law Corporation



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BENJAMIN M. MATSUBARA  
CURTIS T. TABATA  
Attorneys for Petitioner  
HAWAIIAN MEMORIAL LIFE PLAN, LTD.

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of	)	DOCKET NO. A17-804
	)	
HAWAIIAN MEMORIAL LIFE PLAN, LTD.	)	CERTIFICATE OF SERVICE
	)	
To Amend The Conservation Land Use	)	
District Boundary Into The Urban Land Use	)	
District For Approximately 53.449 Acres Of	)	
Land At Kāneʻohe, Island of Oahu, State of	)	
Hawaiʻi, Tax Map Key: (1) 4-5-033: por. 001	)	
_____	)	

CERTIFICATE OF SERVICE

I hereby certify that a file-marked of the foregoing document was duly served upon the following AS INDICATED BELOW on August 26, 2020.

DAWN TAKEUCHI-APUNA, ESQ.  
Deputy Attorney General  
Department of the Attorney General  
425 Queen Street  
Honolulu, Hawaiʻi 96813

CERTIFIED MAIL  
RETURN RECEIPT  
REQUESTED  
dawn.t.apuna@hawaii.gov

MARY ALICE EVANS, DIRECTOR  
Office of Planning, State of Hawaiʻi  
235 South Beretania Street  
Room 600, Leiopapa A Kamehameha Bldg.  
Honolulu, Hawaiʻi 96813

CERTIFIED MAIL  
RETURN RECEIPT  
REQUESTED

KATHY K. SOKUGAWA, ACTING DIRECTOR  
City and County of Honolulu  
Department of Planning and Permitting  
650 South King Street, 7th Floor  
Honolulu, Hawaiʻi 96813

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bchong2@honolulu.gov



PLANNING COMMISSION  
City and County of Honolulu  
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PAUL S. AOKI, ESQ.  
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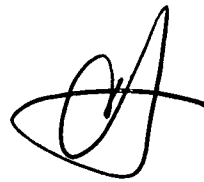
HUI O PIKOILOA, an unincorporated  
Association, LIANNE CHING, BETTYE  
HARRIS, RICHARD MCCREEDY, JULIANE  
MCCREEDY, JESSE REAVIS, and  
GRANT YOSHIMORI  
c/o 45-464 Lipalu Street  
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REQUESTED  
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DATED: Honolulu, Hawai'i, August 26, 2020.

Of Counsel:

MATSUBARA, KOTAKE & TABATA  
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