



April 7, 2025

Mr. John Higham
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Mr. Higham,

It is our understanding that the following comments were provided to Franz Kraintz at the City and County of Honolulu, Department of Planning and Permitting, Community Planning Branch after review of the initial Hawaiian Memorial Park Expansion permit application submittal package. Please note these plans were preliminary at that point in time and remain in development as the plans continue to be reviewed by the City and County of Honolulu at this time. Final plans have not been issued for signature by the City and County of Honolulu as of the date of this letter.

Regarding comments provided, please see the attached responses:

1. The Preliminary Engineering Report, dated January 2018, which was part of the submittal to the LUC, estimated that the runoff into the subdivision from the existing predevelopment HMP site, during a 10-yr 1-hr storm, would be 106.0 cfs (which does not include 4.2 cfs from a small portion that currently runs off to the HMP property and not into the subdivision).

Acknowledged, however, the Preliminary Engineering Report is dated August 10, 2018 in the final EIS.

It should be noted that the 2018 Preliminary Engineering Report (PER) was preliminary as the name suggests, and a full design and thorough analysis of a complete design is not included in nor the intent of a PER. A PER is a planning document intended to help a Client and/or entitlement reviewer make decisions based on preliminary recommendations to improve a site. Analysis is conducted of the existing site condition using readily available information and to assess the feasibility of potential improvements including rough order of magnitude opinions of probable cost of those improvements. Based on information provided in the PER, decision makers can make informed choices about whether to proceed with the project. Once the decision to move the project forward is made, a design consultant will obtain better data to draw results from, and design reports are produced. A PER would not be sufficient to design from nor would a design consultant want to design from a PER report. The design of a project does inherently progress between a PER and design documents as due diligence uncovers new items and Owners have a chance to adjust design as the project develops. The 2018 PER, while completed to the best of the engineer's ability and was the best

information available at that time, is refined and updated with time based on new information including a detailed topographic survey and a more detailed hydrologic model. The current design documents, which builds upon the 2018 PER, should be utilized for a more accurate interpretation of documented information gathered through the design process.

2. The Drainage Report and Detention Basin Analysis, dated August 2023, estimated that in the proposed, after development condition, the same storm would generate 167.03 cfs (see Table 1, on page 10).

Current analysis from the Drainage Report and Detention Basin Analysis, dated October 2024, shows that a 10-year, 1-hour storm for the proposed condition to generate approximately 156.11 cfs that would leave the site and be directed toward receiving inlets near the back of the Pikoilua Subdivision. The same analysis for a 10-year, 24-hour storm as requested by the intervener, shows that the proposed condition is expected to generate 165.90 cfs that would leave the site and be directed toward the receiving inlets near the back of the Pikoilua Subdivision.

3. Isn't DPP's current practice to require proposed developments not to exceed the predevelopment runoff? If so, shouldn't this development be required to limit the post development runoff to 106 cfs? Allowing what would be a little over a 50% increase in runoff in this area where flooding is already a concern doesn't seem appropriate to me. (I did not see any calculations in the Drainage report that showed the runoff from the 10-yr , 1-hr storm from the Pre-Development site, so I used the figure from the PER.)

Current analysis from the Drainage Report and Detention Basin Analysis, dated October 2024, shows that a 10-year, 1-hour storm for the existing condition is expected to generate approximately 151.70 cfs that would leave the site and be directed toward receiving inlets near the back of the Pikoilua Subdivision. The same analysis for a 10-year, 24-hour storm as requested by the intervener, shows that the existing condition is expected to generate 211.46 cfs that would leave the site and be directed toward the receiving inlets near the back of the Pikoilua Subdivision.

Related to the development of a site and hydrologic criteria, Storm Drainage Standards by the Department of Planning and Permitting, City and County of Honolulu dated August 2017, Part I – Hydrologic Criteria, Section B, Subsection 3, states that “For drainage areas where downstream capacities are inadequate to accommodate runoff quantity identified above, runoff shall be limited to pre-development conditions or as specified in the General Conditions.”

To comply with this condition, Pikoilua Subdivision as-builts were obtained and design runoff rates to the Pikoilua Subdivision were researched. Based on the as-builts for the subdivision, the Pikoilua drainage system was designed to accept a combined total of 259.1 cfs (10-year 1 hr storm) of runoff from the contributing areas upstream of the four receiving inlets located behind the homes and roads of the Pikoilua development. Drainage analysis shows the proposed flows from the

proposed Hawaii Memorial Park Expansion to each existing inlet will be less than the existing Pikoilua drainage system was designed to accept. The total runoff from the proposed Hawaii Memorial Park Expansion contributes 151.70 cfs (10 year-1 hr storm) to the four existing inlets behind the homes and roads in the Pikoilua Development.

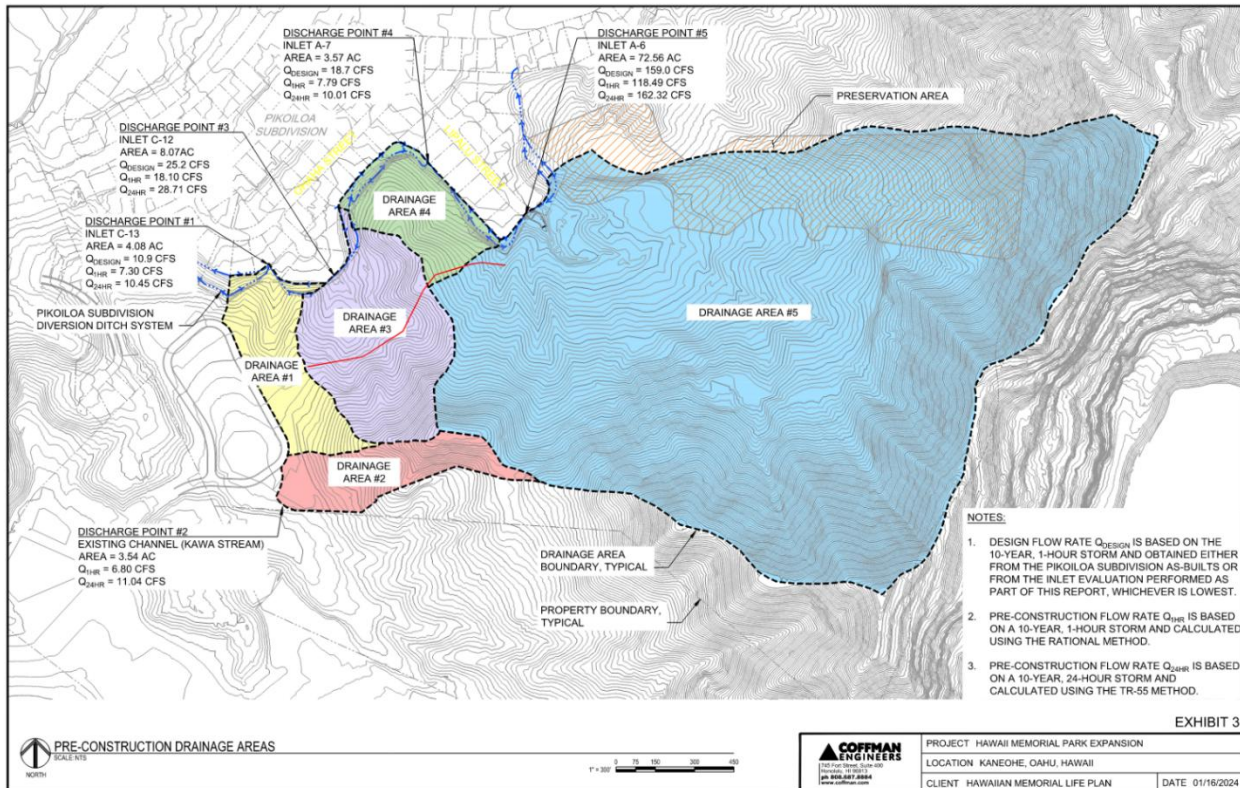
To summarize findings in the Drainage Report and Detention Basin Analysis, dated October 2024 see the table below:

Flow Rate to Pikoilua Subdivision:

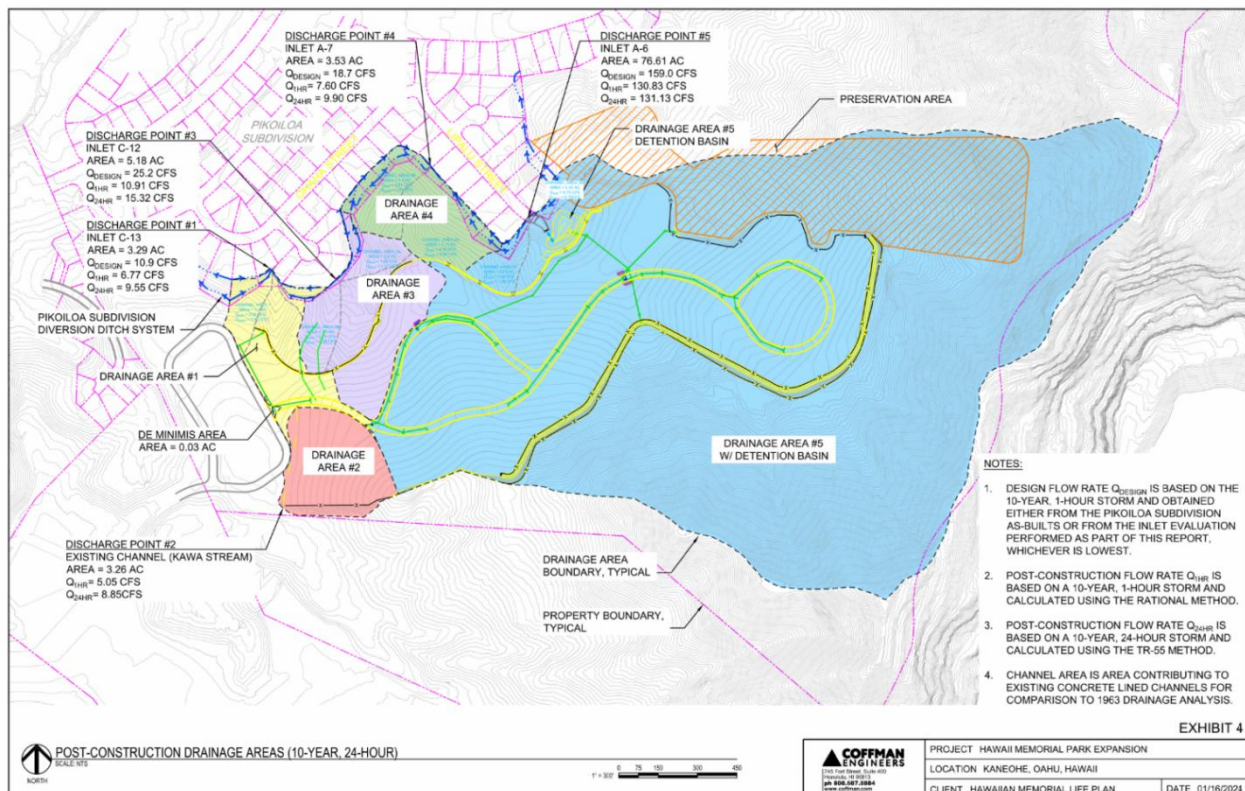
Drainage Area	Existing Conditions Flow Rate (cfs) (24hr storm)	Proposed Conditions Flow Rate (cfs) (24hr storm)	Flow Reduction from Existing to Proposed Condition	Existing Conditions Flow Rate (cfs) (1hr storm)	Proposed Conditions Flow Rate (cfs) (1hr storm)	Flow Reduction from Existing to Proposed Condition	Existing MS4 Inlet Design Flow Rate (cfs) (1hr storm)	Below available Drainage System Capacity?
1	10.45	9.55	Yes	7.30	6.77	Yes	10.9	Yes
2	(to Kawa Stream)							
3	28.71	15.32	Yes	18.10	10.91	Yes	25.2	Yes
4	10.01	9.90	Yes	7.79	7.60	Yes	18.7	Yes
5	162.32	131.13	Yes	118.49	130.83	No	159.0	Yes
Totals	222.50	174.75		158.50	161.16		213.8	Yes

The associated drainage maps are presented below:

Existing Condition:



Proposed Condition:



The engineering team is designing a project that complies not only with the current design guidelines that are imposed upon any project on this island by City and County of Honolulu but also the extend conditions that were put in place by the State of Hawaii Land Use Commission. The design meets the Standard of Care expected for any design project, and the project site and residents below the project site are getting a proposed improvement in the Hawaiian Memorial Park Expansion that will at worst, have no impact from their current condition or most likely, will better their condition from the condition if the project were not constructed. The runoff that flows to the back of the houses is picked up by the small swales installed by the Developer of their subdivision is reduced in almost all instances in areas where we can affect drainage by grading. The designers acknowledge that certain areas were not improved due to limitations of the Damselfly setback or in areas where disturbances were limited/removed to keep improvements outside of the 150-setback.

4. The online FIRM base map shows a variety of Flood Zones over the Kawa stream, its tributary and the adjacent downstream areas all the way to Kaneohe Bay. The HMP site is in Zone D (Unstudied Areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.) Although the upper reaches of the Pikoilua Subdivision drainage collection system may, or may not, be at capacity, the downstream system including the areas adjacent to Kawa stream are clearly exceeding their capacity. Wouldn't it potentially make the flooding worse on both sides of Kaneohe Bay Drive along Kawa Stream, if DPP allows any increase in the upstream runoff from the currently calculated 106.0 cfs?

As previously discussed, proposed runoff is all within allowable and designed for receiving drainage system capacities.

5. Another calculation that seems "out of balance" is the runoff shown in Appendix IV from the Pikoilua As-Builts. It appears to indicate that the runoff flowing from the HMP property, into the subdivision below (from Drainage Areas 1, 3, 4 & 5), for a 10 yr, 1 hr storm, is 259.1 cfs. This information is also shown in Table 1 on Page 10 of the Drainage Report as the "Existing MS4 Inlet Design Flow Rate (cfs) (1 hr storm)". Yet in the PER, the runoff from the same storm is shown as 106.0 cfs and in the Drainage Report (Table 1 on page 10) it is calculated to be 167.03 cfs for the same 1-hr storm. Something seems "off" in the spread of these three calculations (106 cfs to 259.1 cfs) for the same storm. In fact, in the Drainage Report (Table 1, page 10) it calculates the "Existing Condition Flow Rate (cfs) (24-hr storm) as 220.80 cfs. How can the runoff from a 10 yr, 1 hr storm (as per the As-Builts) of 259.1 cfs be more that the runoff from a 10-yr, 24 hr storm of 220.80 cfs, both for the existing condition? I am sure there are reasons/explanations but I have not had time to find them.

The criteria and methods used by the designers of the Pikoiloa Subdivision to determine runoff rates and volumes is not available through the records retained by DPP. **However, the Pikoiloa Subdivision drainage system design and implemented constructed improvements allow for a larger runoff flow and volume than the HMP Expansion site will contribute to the Pikoiloa basin and its existing inlets.** This allows for the proposed HMP Expansion runoff to be distributed to the Pikoiloa system without overburdening the existing constructed infrastructure.

As previously noted, the 2018 PER, while completed to the best of the engineer's ability and was the best information available at that time, is now outdated based on new information including a detailed topographic survey and should not be considered. The 2018 PER is not a design document and did not support any of the design engineering for the project. The current drainage report for the HMP Expansion was put together to follow the current City and County of Honolulu Storm Drainage Standards, submitted for initial review, and has been revised and continues to be reviewed for compliance.

Please note, the flow rates shown are the peak discharge rates from any one design storm event. Often mischaracterized by non-engineers, a 1-hour storm event will have a higher peak discharge rate due to the intense short-duration rainfall, whereas a 24-hour storm, while having a longer duration, may have a lower overall intensity, leading to a lower peak discharge. It should be noted that a 24-hour storm event will likely have a higher total volume of runoff due to the duration of the storm. This understanding applies when a 1-hour and a 24-hour storm event are compared at the same recurrence interval (10-year in this case).

6. Six water quality basins are proposed, two of which appear to be outside of the limits of grading. All of them appear to be eliminated after the construction is completed. I know that that is the normal process but in an area where there is already downstream flooding, would it be possible to require the developer to leave the water quality basins to help improve an already bad situation? He has already spent the money to create them. Why spend more money to cover them up? I think it would go a long way to show that they are really trying to be a "good neighbor"!

The basins in the erosion and sedimentation control plans are provided for erosion and sedimentation control during construction and are not intended for post construction implementation. Many are located in areas that would interfere with proposed drainage and/or site improvements and are not feasible to remain nor would they provide much benefit.

To comply with Condition 5 of the LUC D&O, a Detention Basin Analysis was completed under both a 10-year 1-hour and a 10-year 24-hour storms and is included in the Drainage Report for the project. A permanent detention basin is included as part of the improvements for Hawaiian Memorial Park Expansion project. The detention basin is proposed to be located upstream of the Lipalu Street intake structure and will provide 63,647 cubic feet of storage. The proposed

detention basin will attenuate the flow of runoff leaving the site at the Lipalu Street intake structure to be less than the calculated intake capacity of the intake and much less than the noted capacity of the intake structure and drainage system as represented in the Pikoiloa Subdivision as-builts.

Hawaiian Memorial Park has worked to accommodate their neighbors by offsetting burials a minimum of 150 feet off shared property lines in addition to providing drainage improvements immediately upstream of neighboring properties. These improvements include reducing the size of contributing land areas directing stormwater runoff toward the back of the Pikoiloa Subdivision; thus, reducing the overall runoff flow and volume to the receiving inlets located in the Pikoiloa Subdivision. As previously mentioned, the project site and residents below the project site are getting a proposed improvement in the Hawaiian Memorial Park Expansion that will at worst, have no impact from their current condition or most likely, will better their condition from the condition if the project were not constructed. The runoff flows to the back of the houses that are picked up by the small swales installed by the Developer of their subdivision are reduced in almost all instances in areas where we can affect drainage by grading. The designers acknowledge that certain areas were not improved due to either being located in the Damsely setback or in areas where disturbances were limited/removed to keep improvements outside of the 150-setback. Further, projected runoff from the proposed development has been reduced to all receiving inlet structures in the 10-year, 24-hour storm event. Projected runoff from the proposed development has been reduced to all receiving inlet structures except the Lipalu Street inlet in the 10-year, 1-hour storm event. Even with the projected increase at the Lipalu Street inlet, the increase is still 17.3% less than the existing inlet can accept hydraulically and 36.0% less than the receiving storm drainage system is designed and constructed to accept per the Pikoiloa Subdivision as-builts.

Thank you for your interest in the project.

Sincerely,
COFFMAN ENGINEERS, INC.

A handwritten signature in black ink that reads "Jamisen Hirota". The signature is written in a cursive, flowing style.

Jamisen Hirota, P.E.
Principal, Civil Engineering