



STATE OF HAWAI'I | KA MOKUĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA  
**COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

## STAFF SUBMITTAL

### COMMISSION ON WATER RESOURCE MANAGEMENT

July 23, 2024  
Honolulu, Hawai'i

Modification of Existing Delegation to the Chairperson, Dated December 19, 2023,  
To Approve Certain Well Construction and Pump Installation Permits by Limiting the  
Delegation to Certain Circumstances When the Well is in Compliance with the  
Hawai'i Well Construction and Pump Installation Standards and for  
Pumps Less than 27 Gallons Per Minute and Delegation to the Deputy Director for  
Other Groundwater Permit-Related Approvals Including Acceptance of Applications for  
Initial Review, Permit Extensions, and Well Completion Reports and Certificates

#### SUMMARY OF REQUEST

Staff is recommending revisions to the delegations to approve well and pump permits, set by the Commission on Water Resource Management (Commission) at its December 19, 2023 meeting, after Commission's directive to consult with the Departments of Water Supply, and after the Commission's directive to consult with the Department of Hawaiian Home Lands (DHHL) at its June 18, 2024 Commission meeting.

#### BACKGROUND:

##### Pre-1997

Since the inception of the Commission on Water Resource Management to 1997, nearly all well and pump permit applications were presented to the Commission for approval. Commission meetings were often long and arguably saddled with the Commission's approval of relatively benign well construction and pump installation permit applications.

On February 15, 1989, the Commission authorized the Chairperson to approve well construction permits for monitor, sampling, and observation wells and test holes and for the sealing of unused and abandoned wells.

On March 16, 1994, the Commission authorized the Chairperson to approve permit applications for the replacement of pumps less than or equal to the existing pump capacity where there are no other disputes or complaints.

1997 – Hawai‘i Well Construction and Pump Installation Standards and Delegation to the Chairperson to Approve Permits

On January 23, 1997, with the adoption of the Hawai‘i Well Construction and Pump Installation Standards (HWCPIS), the Commission delegated authority to the Chairperson to approve certain well construction and pump installation permits that were compliant with the newly approved HWCPIS, the latest of which can be found here:

<https://dlnr.hawaii.gov/cwrm/groundwater/wellstandards/>. This helped to ease the many permits that were presented to the Commission monthly, where impacts to the environment were deemed de minimis. The delegation of authority to the Chairperson was established subject to the following:

1. The Chairperson is authorized to approve well construction and well modification permit applications (under Hawaii Revised Statutes §174C-86) statewide, unless the Chairperson determines that the matter should be decided by the Commission.
2. In aquifer systems that are not designated water management areas and where estimated water usage as of the date of application is less than 70% of sustainable yield, the Chairperson is authorized to approve pump installation and pump modification permits unless the Chairperson determines that the matter should be decided by the Commission.
3. Unless deemed otherwise by the Chairperson, no new or additional permit application is required for the replacement of pumps less than or equal to the existing pump capacity. However, the applicant must inform the Commission within 30 days of the replacement and complete and submit the Well Completion Report Part II.

The HWCPIS provides a minimum set of standards to protect the aquifer but is by no means a comprehensive set of standards that can apply to all situations. Recognizing that construction of wells and installation of pumps that follow the standards would minimize potential negative impacts, the Commission delegated authority to the Chairperson to approve permits that are compliant with the HWCPIS. Given the limited capacity of the Groundwater Regulation Branch, this facilitated staff to be more attentive to reviewing applications that have much larger potential impacts (i.e. Ota Well vs. small capacity individual domestic wells in Hawaiian Paradise Park).

1997 to 2023

In practice, since 1997, all Commission Chairpersons have allowed Deputy Directors to sign well construction and pump installation permits, permit extensions, pump usage certificates, and application reviews/routing on their behalf.

Also in practice, there are certain instances when well construction and pump installation permits have been presented to the Commission for approval, including:

1. Wells that are located in Water Management Areas.

2. Wells in the Keauhou Aquifer System Area, where non-designation came with conditions applied to well/pump permits and part of conditions of non-designation.
3. High-capacity pump replacements, where pumping may exceed sustainable yield, based on analysis by staff.
4. Wells that are not compliant with the HWCPIS.
5. Wells that potentially impact surface water based on staff analysis.
6. Denial of permits.

#### 2023 – Change in Delegation

At the December 19, 2023 Commission meeting, staff presented a submittal to enter a memorandum of agreement between the Department of Land and Natural Resources' Division of State Parks and the Commission, to drill a deep monitor well on the Hapuna Beach State Recreation Area.

After the submittal was presented, Dr. Jonathan Scheuer expressed concern that those wells delegated authority to the Chair for approval would not be allowed public input for the Commission's consideration.

Later in the meeting, Commission staff presented a submittal that modified the delegation of authority to the Chairperson for approval. More discussion followed, and Dr. Scheuer again raised issues of the public not having the opportunity to comment on approvals delegated to the Chair, and also the impacts of the cross connection between discrete aquifer boundaries (e.g. basal and deep confined water bodies) such as those at the Commission's Kaloko Deep Monitor Well. Staff agrees with Dr. Scheuer's assessments and wants to ensure transparency while also addressing the timely processing of applications. The approved recommendations are presented below. As an example, where well construction has the potential to impact cross connection of aquifers, staff can allow public input by having the Commission approve permits where there is cross connection.

#### Approved Recommendation (with amendments underlined)

1. Individual domestic well construction and well modification permits for wells in aquifer systems that are not designated water management areas, where estimated water usage as of the date of application is less than 70% of sustainable yield, and where the applicant has no other source of domestic water from a public water system, unless the Chairperson determines that the matter should be decided by the Commission.
2. Individual domestic pump installation and pump modification permits in aquifer systems that are not designated water management areas, where estimated water usage as of the date of application is less than 70% of sustainable yield, and where the applicant has no other source of domestic water from a public water system, unless the Chairperson determines that the matter should be decided by the Commission.
3. Well construction permits for monitor, sampling, and observation wells and test holes, not including any injection wells under the authority of the Department of Health, soil borings for geologic investigation for structural foundation design and wells into the deep

confined aquifer, and for the sealing of unused and abandoned wells, provided that they comply with the Hawaii Well Construction and Pump Installation Standards and have no other regulatory issues.

4. Other Groundwater Program Approvals that are limited to well depth variances less than  $\frac{1}{2}$  of the theoretical aquifer thickness (with the exception of salt water wells), well and pump permit extensions not exceeding three (3) extensions, well completion report part I/certificates of well construction, and well completion report part II/certificates of pump installation completion.

All other permits and program approvals not explicitly delegated to the Chairperson to approve in this action will be brought to the Commission for final decision making.

There were also written comments from the County of Hawai‘i Department of Water Supply (HDWS), County of Hawai‘i Mayor’s Office, and the Honolulu Board of Water Supply, with staff’s comments italicized below.

The County of Hawai‘i Department of Water Supply expressed concerns as follows:

- 1) There was not enough time to review the potential impacts of the change in delegation and requested input from stakeholders. *Staff addressed this with the Commission’s request to meet with the HDWS.*
- 2) Modifications should clearly state whether or not pump replacements of equal or lesser capacity will not require a permit. *This will be addressed in a future Commission action.*
- 3) Taking the Ota Well to the Commission for approval was questionable.
- 4) The Ka Pa‘akai analysis requirement needs further clarification. *This will be addressed as described below.*
- 5) Taking all other permits not explicitly described in the delegation to the Commission would overburden the Commission and lead to delays in processing applications. *Clarifications provided below should help with this.*

The County of Hawai‘i Mayor’s Office supported the HDWS’s comments above.

The Honolulu Board of Water Supply expressed the following concerns:

- 1) Clarifications are needed between production and injection wells. Clarifications are also needed regarding test holes. *There is already a definition of production wells, and injection wells are regulated by the Department of Health.*
- 2) Recommended that well construction permits should be delegated to the Chairperson. *Addressed below.*
- 3) Clarification that well permits deemed complete at the time of the action would need to follow the new delegation process. *Staff implemented the Commission’s new delegations with permits that were in review.*

- 4) Requested stakeholder engagement for the revised process. *Staff addressed this with the Commission's requirement to meet with the various County Departments of Water Supply.*

Submittal B4 - <https://files.hawaii.gov/dlnr/cwrm/submittal/2023/sb20231219B4.pdf>

Minutes - <https://files.hawaii.gov/dlnr/cwrm/minute/2023/mn20231219.pdf>

After its unanimous decision approving staff's recommendation, the Commission directed staff to consult with the County water supply departments and return to the Commission with amended recommendations. In addition, since adopting the new policy of non-delegation, many well drillers have expressed concerns and questions about the timeframe for permit issuances, as well as questions about how to answer the Ka Pa‘akai questions.

On April 24, 2024, as directed by the Commission at its December 2023 meeting, Commission staff met with all four County water supply departments to discuss the delegation. In this discussion, several issues were raised, which reiterated their written concerns submitted in response to the December 2023 submittal:

- 1) Concerns about distinct aquifer bodies in an aquifer system or sector are not looked at separately, in a consistent manner statewide.
- 2) Updates to the Hawai‘i Well Construction and Pump Installation Standards can help to further define areas that make permits less discretionary.
- 3) Water should be used for its highest and best use and it's a wise approach to look at defining individual domestic uses.
- 4) Allowing an exploratory well prior to the pump installation permit allows the applicants to run pump tests and make better assessments of the potential impacts (i.e. Ka Pa‘akai analysis, impacts to streams, impacts to other wells, etc.)
- 5) Staff needs to develop guidelines for applicant to submit adequate Ka Pa‘akai analyses.
- 6) What does the Commission consider to be reasonable expectations about mitigation strategies when there is the potential for impacts to traditional and customary practices?

At its June 18, 2024, the Commission voted to defer action on the submittal as drafted above, and requested the following four items:

- 1) Consult with the Department of Hawaiian Home Lands to discuss the impacts and merits of the recommendations.
- 2) Consider other testimony offered at the meeting.
- 3) Create a workflow chart in the submittal that will help the Commission understand the flow of application approvals.
- 4) Consult with the Attorney General on the legal process to implement staff's recommendations.

**STAFF ANALYSIS OF THE COUNTY ISSUES****1) Aquifer Bodies**

It's true that there are inconsistencies in the way that the Commission regulates high level aquifers versus basal lenses. For example, Lāna‘i is looked at as two Central high level aquifers with the outlying aquifer systems having no sustainable yields. Another example is the Wahiawā Aquifer System that has high level water that spills over to the North and Pearl Harbor Sectors.

Staff feels that it is appropriate to incorporate studies into the next update of the Water Resource Protection Plan, to further define areas where there are discrete aquifer bodies, and explore setting some sustainable yields by hydrogeologic boundaries.

**2) Hawai‘i Well Construction and Pump Installation Standards (HWCPIS) Updates**

Staff agrees that an update to the HWCPIS is in order, and key items include requiring wells designed and constructed to prevent the cross connection of discrete aquifers when drilling through one waterbody and into another, and updating the policy on depth of drilling for confined aquifers.

**3) Water Used for Its Highest and Best Use**

Evaluating the end use of water is possible in a ground-water management area, with the exception of individual domestic wells. In non-ground-water management areas, there is no current mechanism to regulate end uses.

Staff is exploring options to address this problem.

**4) Bifurcation of Permits**

Staff agrees that drilling a well prior to applying for a pump installation permit gives the Commission better data to evaluate potential impacts. However, some applicants may want to have both well and pump permits on-hand prior to investing in a well.

**5) Ka Pa‘akai Guidance from the Commission**

Staff agrees that guidance needs to be provided to applicants, and staff is currently working on a guidance document.

**6) Reasonable Mitigation Strategies When Traditional and Customary Practices may be Impacted**

This subject would best be addressed in the Water Resource Protection Plan

**RESPONSES TO COMMISSION'S REQUESTS AT THE JUNE 18, 2024 MEETING****1) Consultation with the Department of Hawaiian Homelands**

On June 26, 2024, staff met with Ms. Cherie-Noelle Kaanana of DHHL and their consultant, Dr. Jonathan Schauer to discuss the modifications. They raised two primary issues:

**a) Transparency**

DHHL expressed concerns about the transparency of the Commission in disclosing information about permit applications, specifically with respect to the Commission's Monthly Bulletin, but also permit applications and issuances in general.

Staff responded that there is a project being pursued to develop permit applications into an online submission form, with the intention of being able to post every application to the Commission website.

DHHL also suggested that the Commission can implement a similar procedure to DHHL, where the first item on the DHHL Commission's agenda is called a "CONSENT AGENDA". In these cases, more routine items are presented to the DHHL Commission at the beginning of the meeting in an action item that encompasses several applications. If objections are raised on one permit, the DHHL Commission can pull it out of the action and act upon the non-objection items. An example of a DHHL agenda can be found at <https://dhhl.hawaii.gov/wp-content/uploads/2023/12/December-18-19-2023-HHC-Agenda.pdf>.

Staff understands the merits of this process and appreciates the suggestion to help streamline permitting. At this time staff is not recommending incorporating this proposal into this action, particularly as this may also include surface water permits (i.e. stream channel alteration and stream diversion works permits). Additionally, staff believes that a change of this nature should also incorporate other stakeholder input.

**b) Impacts to DHHL's Rights**

Staff from the Commission and DHHL agreed that not delegating permits in aquifers where DHHL has a reservation would resolve this issue. However, as an example, there are many individual domestic well applications in Hawaiian Paradise Park every month which would result in numerous applications being placed on the Commission agendas for action.

As an intermediate step, staff is recommending that all well construction and pump installation permits in aquifers where DHHL has a reservation, will be sent to DHHL for review. If issues come up, staff can then take those permits where there are concerns, to the Commission for approval instead of being delegated to the Chair.

## 2) Consideration of other testimony

Other testimony provided at the Commission meeting (written and oral) provided the following comments:

- a) Keola Talaroc of Alpha Inc. provided testimony that the new process has changed permit approval times from 90-days to one (1) year. While this may be true, there are two things to consider – first, that the new process has not yet been in place for six (6) months, so it's hard to ascertain the impacts of the revision to the delegation. Additionally, permit processing delays are attributed to several factors, which include:
  1. A severe staffing shortage within Groundwater Regulation Branch  
In recent years, the Groundwater Regulation Branch lost both Branch Chief Roy Hardy and longtime Hydrologist/Planner Charley Ice due to retirement. For nearly its entire history, the Commission's Groundwater Regulation Branch has had one Branch Chief and three regulators; however, between 2021 and 2023 there was just the Branch Chief and one regulator. This staffing shortage delayed permit processing considerably. While the Groundwater Regulation Branch has hired one Hydrologist, the Branch is still short of the three regulators necessary to accomplish its core functions.
  2. Geologist Patrick Casey retired at the beginning of 2024, impacting technical reviews of permit applications by the Groundwater Regulation Branch.
  3. The Lahaina Designation process and subsequent application reviews have taken up a significant portion of staff time in review.
  4. Issues related to the Red Hill contamination have taken a lot of staff time, both in the Groundwater Regulation Branch Chief's involvement in the Fuel Tank Advisory Committee, as well as numerous monitor well-related permitting.

Therefore, while it is true that permit processing has been delayed considerably, not all of the delay can necessarily be attributed to the change in delegation. While presenting more permit applications to the Commission may impact staff's ability to accomplish its core functions, the re-delegating of certain approvals will allow staff to more efficiently focus on issues where resources have a higher degree of potential threat.

- b) Charley Ice (formerly from DHHL and the Commission) submitted written comments that supported the June 18, 2024 staff submittal.
- c) Director John Stufflebean from Maui Department of Water Supply submitted written comments that supported the June 18, 2024 staff submittal and stated that reliance on the framework in the Water Resource Protection Plan, sustainable yield, and the Well Standards all advance guidance to determine source development feasibility and budget allocation requirements to serve planned housing developments in Maui County.

- d) The Hawai‘i County Department of Water Supply submitted written comments that supported the June 18, 2024 staff submittal.
- e) Manager and Chief Engineer Ernest Lau from Honolulu Board of Water Supply submitted written comments that supported the June 18, 2024 staff submittal and stated that delays in the current permitting process are affecting the availability of water for agricultural and urban developments including affordable housing. Mr. Lau went on to state that the permitting delays exacerbate water shortages from contamination, climate change induced drought and wildfires.
- f) Greg Barbour from Natural Energy Laboratory of Hawai‘i Authority submitted written comments and noted, in particular, that delegation of pumps less than 27 gallons per minute with salinity above 19 parts per thousand would be useful to them and their aquaculture clients.
- g) Dean Minakami from Hawai‘i Housing Finance and Development Corporation submitted written comments supporting the June 18, 2024 staff submittal, and stated that the revised delegation facilitates efficient administration of the Commission’s review process and will help to expedite the delivery of much needed affordable housing for local families.
- h) Kevin Gooding from INTERA (and formerly of Commission staff) submitted comments in support of the June 18, 2024 staff submittal.

3) Flowchart

Refer to **Exhibit 4**.

4) Consultation with Attorney General’s office

On June 26, 2024, staff met with the Attorney General’s office and they opined that the delegation of authority does not require rule-making.

**STAFF PROPOSAL FOR REVISIONS TO DELEGATION**

1. Commission will delegate authority to the Chairperson to approve all well construction permits if they are in compliance with the HWCPIS.

Staff’s rationale is that adherence to the HWCPIS for just the well construction alone will not have adverse environmental impacts because no water will be extracted, except if the well is artesian and flow can get to the surface and leak, or if two aquifer bodies are penetrated and there is the potential for short circuiting one aquifer with another.

2. All pump installation permits greater than or equal to 27 gallons per minute will need to be approved by the Commission, regardless of whether they are in or out of a ground water management area.

Staff conducted an analysis of wells that are used for individual domestic use. Staff chose individual domestic use for evaluation because they are most, if not all, of the relatively small pump installation permit applications.

It can be difficult to correlate small capacity pump capacities (gallons per *minute*; gpm) with daily demands (gallons per *day*; gpd). Pump installations are permitted on a gpm basis, whereas withdrawals are regulated on a daily basis (typically million gallons per day). See **Exhibits 1 and 2**.

Nonetheless, staff attempted to provide representative daily pumpages based on pump capacities. The data indicates that average daily pumpage for pumps sized 18-26 gallons per minute, can be up to 1,000 gallons per day.

Comparing that with the Water System Standards (for the county water supply departments; See **Exhibit 3**), daily needs for domestic uses can range from 400 to 600 gallons per day. Therefore, setting a threshold at 26 gallons per minute will effectively exclude pump installation applications for individual domestic wells from requiring full Commission approval.

However, uses for individual needs that exceed this threshold are possibly irrigating large landscape areas. While the argument can be made that individual domestic uses should include the landscape areas of a residential lot, it can also be argued that water use in excess of the Water System Standards are beyond average daily demands and should be evaluated by the Commission for adverse impacts.

Sustainable yields throughout Hawai‘i range from 1 million gallons per day (mgd) to 432 mgd. The threshold of 1,000 gallons per day is 0.001 mgd, and represents 0.1% of sustainable yield of 1 mgd, to 0.0002% of sustainable yield of 432 mgd.

In many cases, pumps greater than that 26 gpm threshold use more than 1,000 gallons per day. Staff believes it's reasonable to evaluate why an individual domestic use would need more than 1,000 gallons per day, and is therefore proposing that pumps equal to or greater than 27 gallons per minute should be approved by the Commission rather than delegated.

However, there may also be instances where pumps less than 27 gpm should be presented to the Commission for approval.

- a) Where the pump intake setting is roughly equivalent to an adjacent stream elevation and thus has the potential to reduce stream flow;
  - b) Where an aquifer has reached sustainable yield in actual withdrawal, on a 12-month moving average, for any period in the past year; and
  - c) Where objections to an application are received.
3. All pump installation permits will need to go to the Commission for approval if a water use permit is required, regardless of the pump capacity.

## DELEGATIONS TO THE DEPUTY DIRECTOR

Commission staff also believes that there are certain routine tasks that are not directly related to permitting and can be delegated to the Deputy Director for approval. These administrative tasks include:

- 1) Acceptance of complete well construction and pump installation permit applications, and routing for review by other government agencies.
- 2) Granting extensions for well and pump permits beyond the initial 2-year permit.
- 3) When all conditions of a permit are met and the well is constructed and pump is installed, approval of the well completion reports and issuance of certificates of completion.

## FOLLOW-UP ACTIONS FOR STAFF

1. Staff shall propose aquifer revisions to account for hydrogeology in the update to the Water Resource Protection Plan. Staff will update the Commission within six (6) months about the progress.
2. Staff will commence revisions to the Hawai‘i Well Construction and Pump Installation Standards and update the Commission within six (6) months about the progress.
3. Staff will develop a Ka Pa‘akai guidance document and update the Commission within three (3) months of the progress.
4. Staff will incorporate guidance for reasonable mitigation strategies into the Water Resource Protection Plan and update the Commission within six (6) months about the progress.

## RECOMMENDATION:

Staff recommends that the Commission delegate authority to the Chairperson for approval of the following items:

- 1) Well Construction Permits, where the well is in compliance with the Hawai‘i Well Construction and Pump Installation Standards, except the following conditions that will require Commission approval:
  - a) Wells that penetrate two discrete water bodies (i.e. perched and basal sources, basal and deep confined, etc.).
  - b) Artesian sources where hydrostatic pressure brings water to the surface (i.e. the well can be productive without an installed pump).
- 2) Pump Installation Permits for pumps less than 27 gallons per minute, in both designated and non-designated ground water management areas, except the following conditions will require Commission approval:
  - a) Where the pump intake setting is roughly equivalent to an adjacent stream elevation and thus has the potential to reduce streamflow;
  - b) Where an aquifer has reached sustainable yield in actual withdrawal, on a 12-month moving average, for any period in the past year;
  - c) Where objections to an application are received; and

Staff Submittal

July 23, 2024

Modification of Existing Delegation to the Chairperson, Dated December 19, 2023

- d) Pumps less than 27 gpm where a water use permit is also necessary (i.e. designated ground water management area and non-individual domestic).
- 3) None of the above delegations shall supersede Commission actions that require approval of permits by the full Commission.

Staff also recommends that the Commission delegate authority to the Deputy Director for approval of the following items:

- 1) Acceptance of complete well construction and pump installation permit applications for initial review by other government agencies;
- 2) Well construction and pump installation permit extensions not exceeding two 2-year extensions; and
- 3) Well completion report parts 1 and 2, and certificates of well construction and pump installation completion.

Respectfully submitted,



DEAN D. UYENO  
Acting Deputy Director

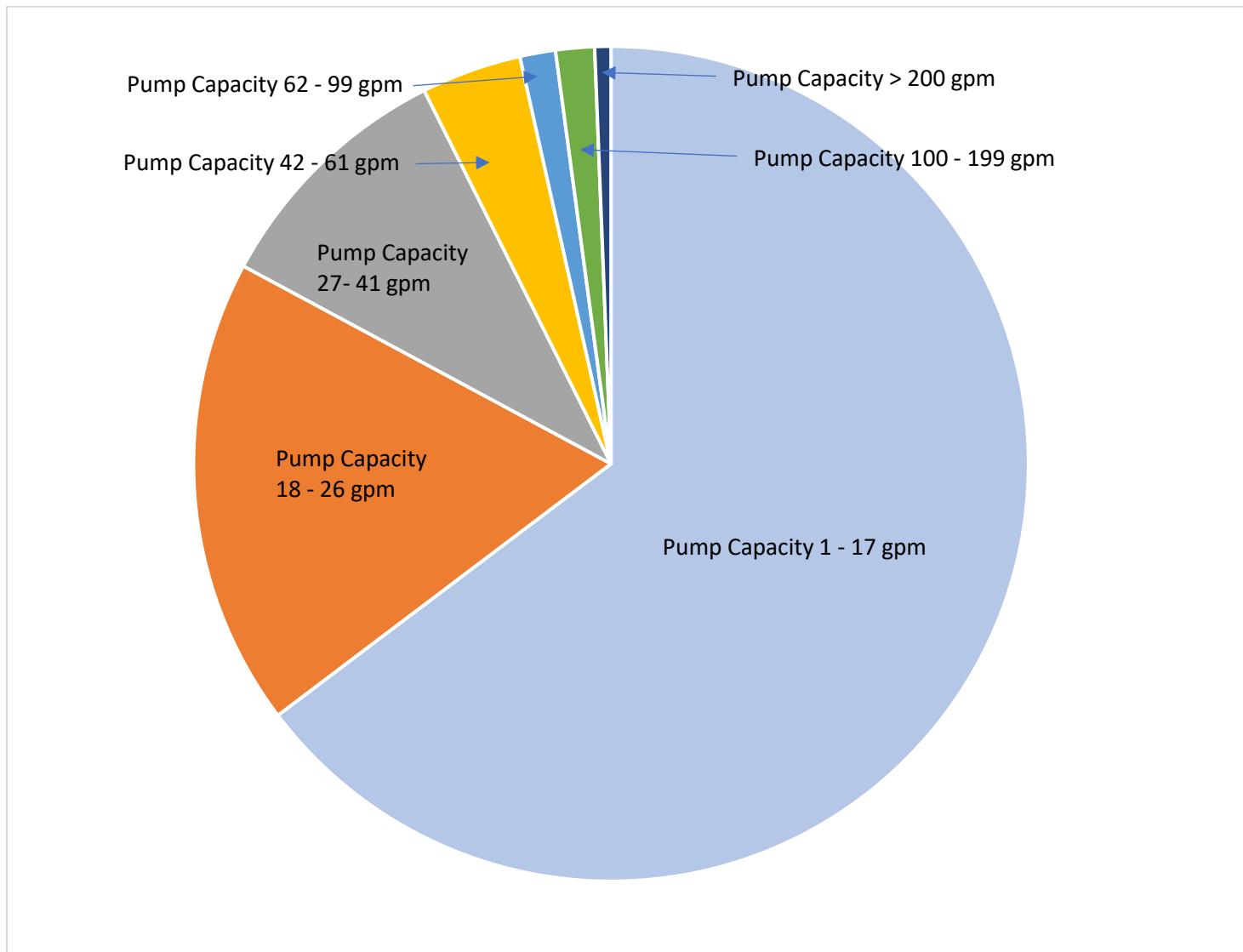
Exhibits:

- 1. Individual Domestic Ranges of Pump Sizes in Gallons per Minute
- 2. Approximate Correlations Between Pump Capacity (Gallons per Minute) and Monthly and Daily Usage (Gallons per Day)
- 3. Domestic Consumption Guidelines by County (Water System Standards)
- 4. Proposed Process Flowchart

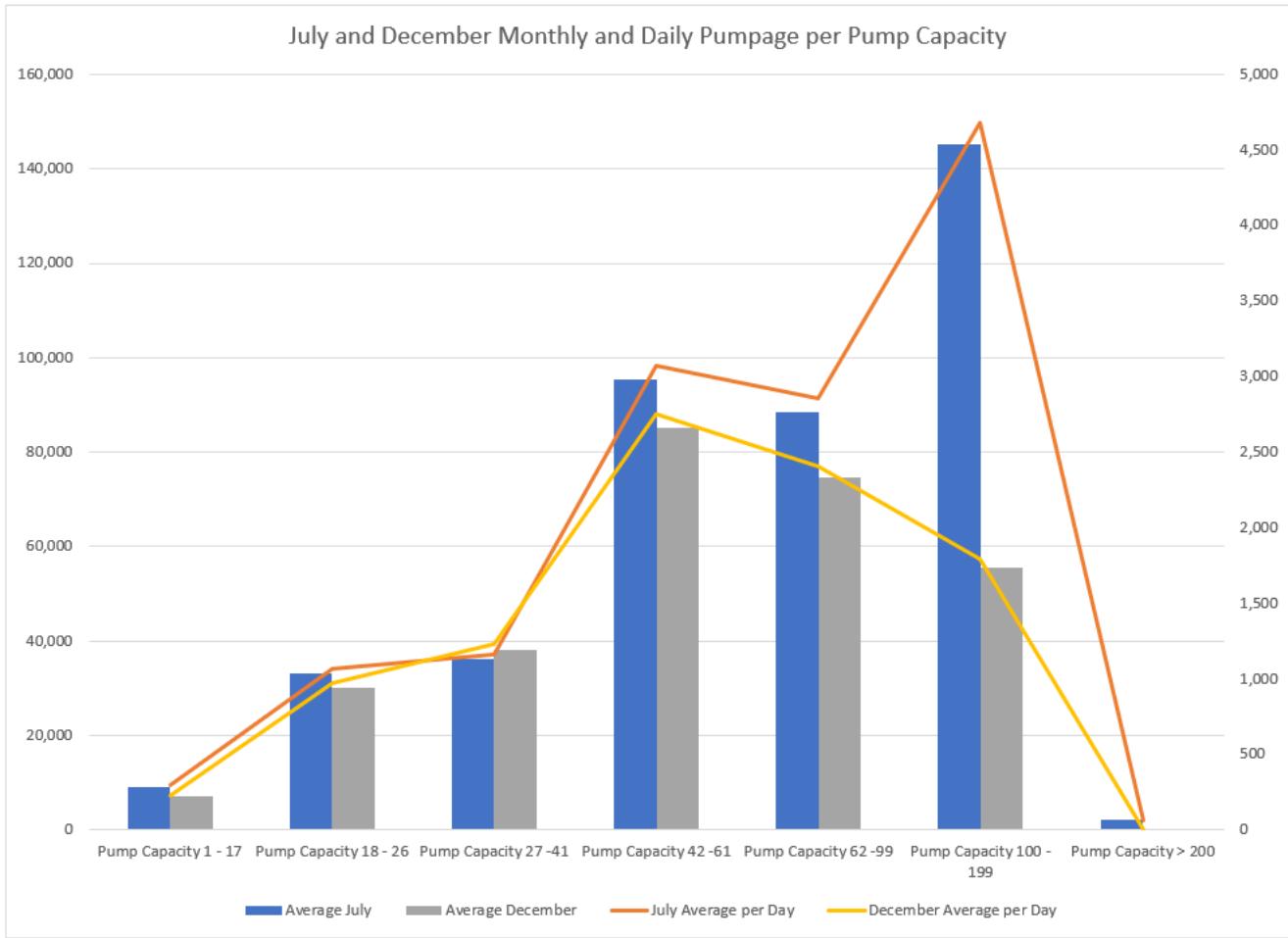
APPROVED FOR SUBMITTAL:



DAWN N. S. CHANG  
Chairperson



**EXHIBIT 1: INDIVIDUAL DOMESTIC RANGES OF PUMP SIZES IN GALLONS PER MINUTE**



**EXHIBIT 2: APPROXIMATE CORRELATIONS BETWEEN PUMP CAPACITY (GALLONS PER MINUTE) AND MONTHLY AND DAILY USAGE (GALLONS PER DAY)**

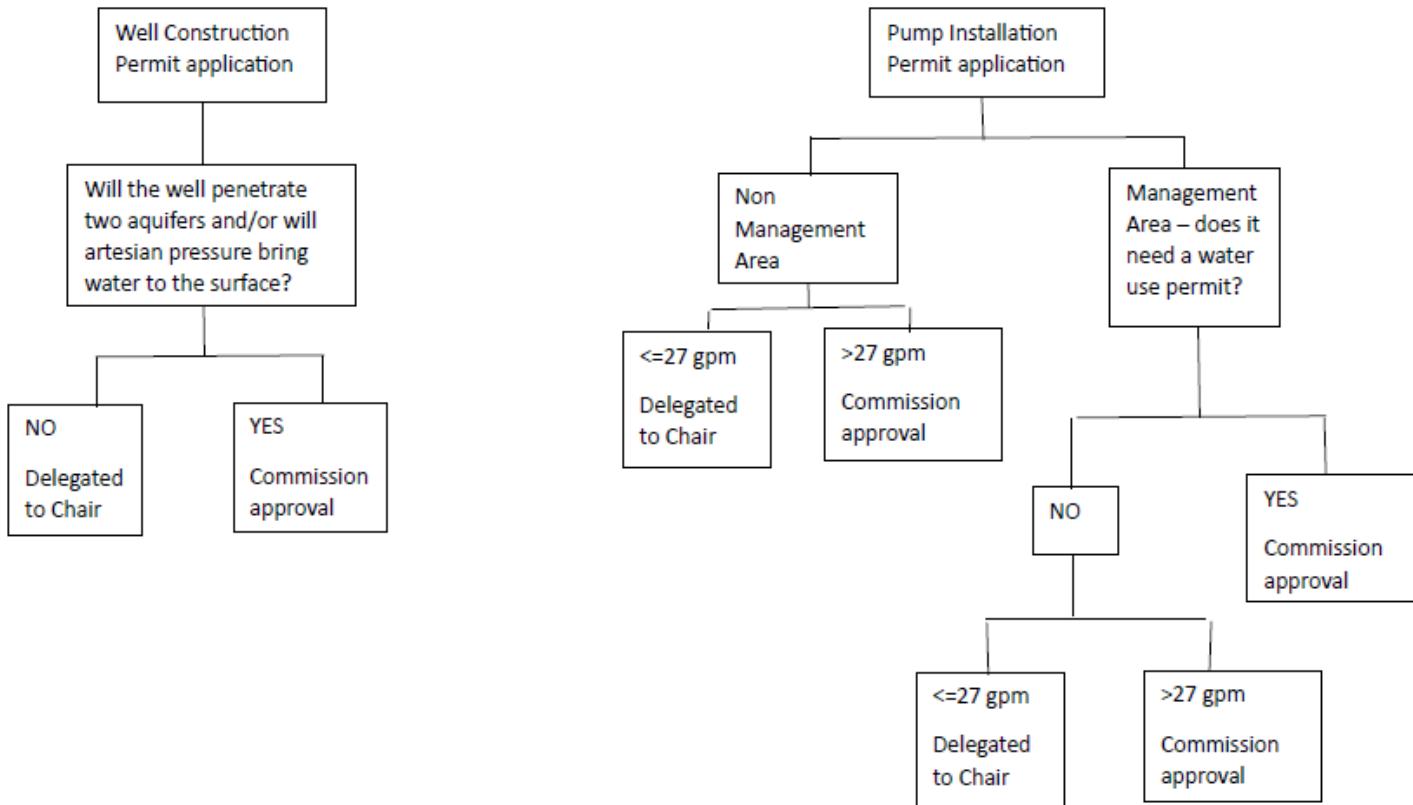
## DIVISION 100 - PLANNING

<b>Table 100-18 - DOMESTIC CONSUMPTION GUIDELINES</b>				
<b>AVERAGE DAILY DEMAND*</b>				
ZONING DESIGNATION	HAWAII	KAUAI	MAUI	OAHU
<b>RESIDENTIAL:</b>				
Single Family or Duplex	400 gals/unit	500 gals/unit	600 gals/unit or 3000 gals/acre	500 gals/unit or 2500 gals/acre
Multi-Family Low Rise	400 gals/unit	350 gals/unit	560 gals/unit or 5000 gals/acre	400 gals/unit or 4000 gals/acre
Multi-Family High Rise	400 gals/unit	350 gals/unit	560 gals/unit	300 gals/unit
<b>COMMERCIAL:</b>				
Commercial Only	3000 gals/acre	3000 gals/acre	6000 gals/acre	3000 gals/acre
Commercial/Industrial Mix	--	5000 gals/acre	140 gals/1000 sq. ft.	100 gals/1000 sq. ft.
Commercial/Residential Mix	--	3000 gals/acre	140 gals/1000 sq. ft.	120 gals/1000 sq. ft.
<b>RESORT (To include hotel for Maui only)</b>	400 gals/unit (1)	350 gals/unit	350 gals/unit or 17000 gals/acre	350 gals/unit or 4000 gals/acre
<b>LIGHT INDUSTRY:</b>	4000 gals/acre	4000 gals/acre	6000 gals/acre	4000 gals/acre
<b>SCHOOLS, PARKS:</b>	4000 gals/acre or 60 gals/student	4000 gals/acre or 60 gals/student	1700 gals/acre or 60 gals/student	4000 gals/acre or 60 gals/student
<b>AGRICULTURE:</b>		2,500 gals/acre	5000 gals/acre	4000 gals/acre

\* - Where two or more figures are listed for the same zoning, the daily demand resulting in higher consumption use shall govern the design unless specified otherwise.

(1) - Subject to special review and control by the Manager.

## EXHIBIT 3: DOMESTIC CONSUMPTION GUIDELINES BY COUNTY (WATER SYSTEM STANDARDS)



**EXHIBIT 4: PROPOSED PROCESS FLOWCHART**