BOARD OF WATER SUPPLY, COUNTY OF KAUA'I

On March 16, 2020, Governor David Y. Ige issued a Supplementary Emergency Proclamation related to COVID-19 which suspended Chapter 92 of the Hawai'i Revised Statutes ("HRS"), relating to Public Agency Meetings and Records (commonly referred to as the Sunshine Law) to the extent necessary in order to enable boards to conduct business in-person or through remote technology without holding meetings open to the public. Boards shall consider reasonable measures to allow public participation consistent with social distancing practices, such as providing notice of meetings, allowing the submission of written testimony on items which have been posted on an agenda, live streaming of meetings, and posting minutes of meetings online. No board deliberation or action shall be invalid, if such measures are not taken.

In accordance with the Governor's Proclamations including the stay-at-home order and the Mayor's Proclamations and Emergency Rules, the Board of Water Supply meetings will be conducted as follows until further notice:

- Board meetings will be held via remote technology to be consistent with social distancing practices and stay-at-home orders.
- Board members and/or resource individuals may appear via remote technology.
- Board meetings will continue to be noticed pursuant to HRS Chapter 92.
- Written testimony on any agenda item will continue to be accepted.
    - Written testimony may be submitted to the Commission Support Clerk via email at board@kauaiwater.org by the close of business the day before the Board meeting is scheduled or mailed to the Board of Water Supply at 4398 Pua Loke Street, Līhu'e, Kaua'i, Hawai'i 96766 with attention to the Commission Support Clerk. The public is asked to please provide sufficient time for receipt of the testimony if mailing in public testimony.
    - Persons wishing to testify are requested to register their name, phone number, and agenda item via email at board@kauaiwater.org or by calling (808) 245-5406.
    - If you wish to submit oral testimony prior to the Board meeting, it may be submitted by leaving a voice message at (808) 245-5406.
    - The Commission Support Clerk will provide electronic copies of public testimony received, if any, to the Board members prior to the start of the meeting.
- Board meeting minutes will continue to comply with HRS Chapter 92 and be posted to the Board's website at http://www.kauaiwater.org/cp_waterboard_agendas.asp.

For more information on COVID-19 and to access the Governor's Proclamations please visit: https://hawaiicovid19.com/.

For County of Kaua'i information, including the Mayor Kawakami's daily updates, Proclamations, and Emergency Rules, please visit: http://www.kauai.gov/COVID-19.

BOARD OF WATER SUPPLY

REGULAR MONTHLY TELECONFERENCE MEETING NOTICE AND AGENDA

Thursday, February 25, 2021
10:00 a.m. or shortly thereafter

PUBLIC ACCESS + 1-415-655-0001 US Toll, Conference ID: 182 068 9272, Password: 4398#

This meeting will be held via Microsoft Teams conferencing only. Members of the public are invited to join this meeting by calling the number above with the conference ID information. You may testify during the video conference or submit written testimony in advance of the meeting via e-mail, fax, or mail. To avoid excessive noise/feedback, please mute your microphone except when you are called to testify.

If members of the public require technical assistance please contact: informationtechnology@kauaiwater.org

CALL TO ORDER

ROLL CALL

ANNOUNCEMENTS:
Next Scheduled Meeting: Thursday, March 25, 2021 – 10:00 a.m. via Tele-Conference.

APPROVAL OF AGENDA

APPROVAL OF MEETING MINUTES:

a) Regular Board Meeting – January 21, 2021
b) Special Board Meeting – February 8, 2021
c) Executive Session – January 21, 2021
d) Executive Session – February 8, 2021

PUBLIC TESTIMONY

1. Testimony from Mr. Jeffrey Lindner, President A Kula Hawai'i regarding Water Service for Fire Protection dated February 16, 2021

CORRESPONDENCE

1. Correspondence from Mr. Jeffrey Linder, President A Kula Hawai'i regarding Kula Water Bill Leak dated January 22, 2021

OLD BUSINESS:

1. *Manager's Report No. 20-41* - Waiahi Surface Water Treatment Plant Renovation Construction Cost Progress Report *(Update)*

2. Discussion and Possible Action on the hiring of Manager and Chief Engineer (deferred December 17, 2020)

STAFF REPORTS:

1. Statement of Revenues and Expenditures
    a. January Monthly Summary Budget
    b. Accounts Receivable Aging Summary

2. Public Relations Activities

3. Operational Activities

4. Manager and Chief Engineer

TOPICS FOR FUTURE BOARD OF WATER SUPPLY MEETINGS:

1. Department of Water Performance Audit (Update)
2. Table of Organization Workshop
3. Discussion and Possible Action to establish Fiscal Policies and Procedures
4. Baseyard Master Plan Workshop
5. Employee of the Year Resolutions *(March 2021)*
6. Draft Budget for Fiscal Year 2021-2022 *(March 2021)*
    a. Fiscal Year 2021 - 2022 – Draft Operating Budget
    b. Fiscal Year 2021 - 2022 – Draft Capital Outlay Budget

EXECUTIVE SESSION:

Pursuant to Hawai'i Revised Statues (HRS) §92-7(a), the Board may, when deemed necessary, hold an executive session on any agenda item without written public notice if the Executive Session was not anticipated in advance. Any such executive session shall be held pursuant to HRS §92-4 and shall be limited to those items described in HRS §92-5(a).

1. Pursuant to Hawai'i Revised Statutes § 92-4 and § 92-5(a)(2), the purpose of this Executive Session is for the Board to consider the hiring of a Manager and Chief Engineer where consideration of matters affecting privacy will be involved; provided that if the individual concerned requests an open meeting, an open meeting shall be held, as it relates to this agenda item:

    Discussion and Possible Action on the hiring of Manager and Chief Engineer (deferred December 17, 2020)

ADJOURNMENT

WRITTEN TESTIMONY

The Board is required to afford all interested persons an opportunity to present testimony on any agenda item. The Board encourages written testimony at least two (2) business days prior to a scheduled Board meeting. At each Board meeting, the Board will accept oral and written testimony on any agenda item at item Public Testimony.

Please include:

1. Your name and if applicable, your position/title and organization you are representing
2. The agenda item that you are providing comments on; and
3. Whether you are a registered lobbyist and, if so, on whose behalf you are appearing.

Send written testimony to:
Board of Water Supply, County of Kauaʻi
C/O Administration
4398 Pua Loke Street
Līhuʻe, Hawaiʻi 96766
E-Mail: board@kauaiwater.org
Phone: (808) 245-5406
Fax: (808) 245-5813

SPEAKER REGISTRATION

Prior to the Day of the Meeting: Persons wishing to testify are requested to register their name, phone number, and identify the agenda item for which they wish to provide testimony via email at board@kauaiwater.org or by calling (808) 245-5406.

On the Day of the Meeting: Persons who have not registered to testify by the time the Board meeting begins will be given an opportunity to speak on an item following oral testimonies of registered speakers. The length of time allocated to person(s) wishing to present verbal testimony may be limited at the discretion of the chairperson.

SPECIAL ASSISTANCE

If you need an auxiliary aid/service or other accommodation due to a disability, or an interpreter for non-English speaking persons, please call (808) 245-5406 or email board@kauaiwater.org as soon as possible. Requests made as early as possible will allow adequate time to fulfill your request. Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.


Draft Minutes

MINUTES
BOARD OF WATER SUPPLY
January 21, 2021

The Board of Water Supply, County of Kauaʻi, met in regular meeting **via remote** in Līhu'e on Thursday, January 21, 2021. Chair Gregory Kamm called the meeting to order at 10:03 a.m. The following Board members were present:

BOARD: Mr. Gregory Kamm, *Chair*
Mr. Kurt Akamine, *Vice Chair*
Ms. Julie Simonton
Mr. Troy Tanigawa
Mr. Ka'aina Hull

EXCUSED: Mr. Lawrence Dill
UNEXCUSED: Mr. Elesther Calipjo

Quorum was achieved with 5 members present at Roll Call.

STAFF: Manager & Chief Engineer Mark Knoff
(via remote) Mr. Steve Kyono, Board Advisor
Mr. Michael Hinazumi
Mrs. Marites Yano
Deputy County Attorney Mahealani Krafft
Mr. Carl Arume
Mr. Val Reyna
Mrs. Mary-jane Akuna
Mrs. Jonell Kaohelaulii
Mr. Jas Banwait

GUEST: DCA Laura Barzilai, County Attorney's Office

ANNOUNCEMENTS
Next Scheduled Meeting: Thursday, February 25, 2021 – 10:00 a.m. via Tele-Conference

APPROVAL OF AGENDA
Mr. Akamine moved to approve the Agenda as distributed; seconded by Ms. Simonton; with no objections, motion carried with 5 ayes.

APPROVAL OF MEETING MINUTES
a) Regular Board Meeting – December 17, 2020

Ms. Simonton moved to approve the Regular Board Meeting minutes of December 17, 2020; seconded Mr. Mr. Akamine; with objections, motion carried with 5 ayes.

b) Executive Session – December 17, 2020

Ms. Simonton moved to approve the Executive Session minutes of December 17, 2020; seconded Mr. Akamine; with objections, motion carried with 5 ayes.

PUBLIC TESTIMONY
Private Secretary Mary-jane Akuna reported that two public callers joined and did not testify on agenda items. No registered testimonies received.

CORRESPONDENCE
1. Chairperson's Appointments for 2021 Rules Committee, Finance Committee, Committee of the Whole

Chair appointed Committee members with no objections:
Rules Committee: Ka'aina Hull (Chair) & members Julie Simonton and Gregory Kamm
Finance Committee: Lawrence Dill (Chair) & members Ka'aina Hull and Elesther Calipjo

2. Correspondence from Shawn L. Shimabukuro, Grove Farm regarding Request for Revenue Requirement Shortfall per Water Treatment and Delivery Agreement dated December 17, 2020

Received / Discussed in Executive Session.

3. Correspondence from Corey Yamashita, Goodfellow Bros. regarding Request for Equitable Adjustment, Job No. 15-07, Reorganize Water System: Kaumualiʻi Highway 16-Inch Main and Emergency Pump Connection, Hanapēpē Road 6-Inch Main Replacement, Job No. 15-07, Water Plan Project No. HE-01, HE-10, Hanapēpē, Kaua'i, Hawai'i dated December 18, 2020

Received / Discussed in Executive Session.

OLD BUSINESS

1. *Manager's Report No. 20-41* - Waiahi Surface Water Treatment Plant Renovation Construction Cost Progress Report *(Update)*

Received / No update

DISCUSSION:

Mr. Hull questioned if there would be a Grove Farm represented at today's meeting? Chair Kamm was not aware of a Grove Farm representative. Mr. Hull mentioned that the correspondence from Grove Farm stated proposals and to consider arbitration. More discussion was done in Executive Session.

NEW BUSINESS

1. *Manager's Report No. 21-18* – Discussion and Possible Action to transfer from the Water Utility funds to the Construction Management Professional Services funding in the amount of $217,815.00

BACKGROUND:

Manager Mark Knoff explained the proposed Fourth Amendment to Contract No. 637, Hanapēpē Waterline Project was for additional funds on travel restrictions, increased time and project delays. When contract Amendment #4 is fully executed, the DOW would issue and execute a Project Assignment Order #3 to complete the project management through June 30, 2021. Department recommended approval on Option 1: DOW can manage construction of existing and new projects such as Hanapēpē Waterlines (Job 15-07) and pay RMTC as required for the Project Assignment Orders issued within an active contract end date per the approved scope of work fees. They have managed the project from the beginning of construction so continuity would be maintained through completion. Details on Amendments 1, 2, 3, 4, 5 are on Pages 32 – 34.

DISCUSSION:

Chair Kamm inquired on what the petroleum problem was but would take this up at a later time.

Mr. Hull moved to approve *Manager's Report No. 21-18* – Discussion and Possible Action to transfer from the Water Utility funds to the Construction Management Professional Services funding in the amount of $217,815.00; seconded by Ms. Simonton; with no objections, motion carried with 5 ayes.

2. Discussion and Possible Action on Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer

DCA Krafft recommended the Board defer this item to after Executive Session.

At 12:03 p.m., the Regular Board meeting was called back to order.

After Executive Session, the Board deferred this agenda item to schedule a Special Board Meeting to establish a Permitted Interaction Group.

Mr. Akamine deferred Discussion and Possible Action on Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer; seconded by Ms. Simonton; with no objections, motion carried with 5 ayes.

STAFF REPORTS

1. Statement of Revenues and Expenditures
    a. December Monthly Summary Budget
    b. Accounts Receivable Aging Summary

BACKGROUND:

Waterworks Controller Mrs. Marites Yano gave a brief explanation on Fiscal report:

- Water Sales – Up 15% than expected
- Operating Expenses – 61% burn rate or 39% underbudget
- Fiscal working with Manager on the new chart reporting on:
  Page 48 – YTD Cumulative Water Consumption – 1.5 billion gallons down from previous year
  Page 49 – Monthly Consumption – down 2M gallons
  Page 50 – Water Utility Cumulative Cash Receipts – collected YTD $13M; down $3.9M. Last year collected $2.9M from State Appropriations; water sales down $1.7M
  Page 51 – Cumulative Billed Revenues – YTD billed $13.2M; down $1.2M
  Page 52 – Accounts Receivable Aging Summary – See scale 0-30 days diminished & 121 days & over increased up to 20%
  Page 53 – Statement of Net Position - showed Assets & Deferred Outflows
  Page 54 – Total Liabilities and New Position

Received

2. Public Relations Activities

BACKGROUND:

Information & Education Specialist Mrs. Jonell Kaohelaulii highlighted the following:

1. Wise Water Wednesdays – This public campaign included print ad and radio advertising on Facebook, two radio stations (FM97 & KONG Radio Group) and newspaper. The campaign promotes the Department's services and conservation.

Received

3. Operational Activities

BACKGROUND:

Chief of Operations Mr. Valentino Reyna pointed out the new format to Operation's charts:
Page 61 – Monthly Water Audit
Page 62 – Water Loss by District
Page 63 – Operations Personnel Hours
Page 64 is not part of the report

DISCUSSION:

Chair Kamm asked what are the water loss elements on Page 62? Mr. Reyna said the calculation is based on what is produced and what the meter readers billed that is deducted (Billed minus water produced = Number of gallons lost). Mr. Reyna said water loss from leaks, tank overflow, flushing lines after leak repair in subdivisions due to slow construction and unreported water leaks or fire trucks being filled.

Ms. Simonton asked about hooking up a temporary meter at Kukui'ula from the hydrants when flushing, then charge for usage? Hydrant meters are installed during flushing according to Mr. Reyna. He did not know if Kukui'ula could be charged. With small leak repairs, Operations records estimates. Ms. Simonton mentioned the charge could reflect real water lost in certain districts.

Received

4. Manager and Chief Engineer

BACKGROUND:
Manager Knoff highlighted the following items:

1. FOURTH AMENDMENT TO CONTRACT NO. 637, JOB NO. 15-07, HANAPĒPĒ WATERLINE PROJECT FOR AS NEEDED CONSTRUCTION MANAGEMENT SERVICES WITH R.M. TOWILL CORPORATIONS IN THE AMOUNT OF $217,815.00 AND A TIME EXTENSION OF 122 CALENDAR DAYS - Contract will be executed.
2. THIRD AMENDMENT TO CONTRACT NO. 627, ANNUAL LICENSE AND MAINTENANCE SUPPORT FOR COMPUTERIZED MAINTENANCE MANAGEMENT INFORMATION SYSTEM (M-PET®MMIS) WITH FOUR WINDS GROUP, INC. FOR AN ADDITIONAL $20,000 AND A CONTRACT TIME EXTENSION TO FEBRUARY 11, 2022 – Contract was executed.
3. TENTH AMENDMENT TO CONTRACT NO. 427, JOB NO. 02-14, WP2020 #WK-08, KAPA'A HOMESTEADS 0.5 MG STORAGE TANK AND KAPA'A HOMESTEADS 325' TANKS – TWO 0.5 MG TANKS AND CONNECTING PIPELINES, WAILUA-KAPA'A, WATER SYSTEM, KAPA'A, KAUA'I, HAWAI'I WITH BELT COLLINS HAWAI'I, LLC. FOR AN ADDITIONAL $37,125.00 AND A CONTRACT TIME EXTENSION FOR AN ADDITIONAL 60 DAYS – This was how to address the drainage issues on the Esaki property.
4. Personnel Matters – New chart on (Pages 70,71) provided the Board transparency on positions to be filled, total authorized positions, number of vacancies and number of pending vacancies being worked on.

Received

QUARTERLY *(October – December 2020)*

1. Build America Bond – There are projects remaining with about $10.5M remaining to spend by the fiscal year ends according to the Manager.

Received

2. Water Quality – Manager summarized the following:
   - The microbial analysis certification was completed; next inspection will be in April 2022.
   - Water Quality report will be revised to a dashboard format with highlighted bullet points.
   - There were no violations on samplings and all requirements were met.

Received

3. Claims Settled by Department of Water – The settlement on a claim was denied with no corrective action. DCA Krafft added that the claim was unsubstantiated. Waterworks Controller Mrs. Yano said the customer claimed he did not use the water. County Attorney's Office concurred with the Department's recommendation for denial. Under the Rules, DOW appeals process has a deadline if pursued. There has been no response back from the customer.

Received

At 10:34 a.m., Mr. Akamine exited the meeting.

4. Engineering – Civil Engineer Mr. Michael Hinazumi reported Engineering has consolidated sections under Engineering: Water Resources and Planning Section, Engineering Services Section and Construction Management Section (See Page 79 for details). Mr. Hinazumi summarized Water Restriction Areas, Accomplishments, Water Plan 2020 Construction Project Status, Indefinite Delivery/Indefinite Quantity (IDIQ) Services (Pages 80-83). The average time to process a water building permit is 30 to 45 days that includes the electrical plan review.

Received

5. Information Technology Division – Civil Engineer Mr. Michael Hinazumi outlined the Technology matters listed (Page 86), Business Process Improvements (Page 87), and Contract 666 with Brio Consulting which are still being used. IT support Jas Banwait has been instrumented in many improvements. The Department is preparing to execute an 8th Amendment to carry Jas to the end of March 2021.

Received

TOPICS FOR FUTURE BOAD OF WATER SUPPLY MEETINGS

1. Department of Water Performance Audit (Update)
2. Table of Organization Workshop
3. Discussion and Possible Action to establish Fiscal Policies and Procedures
4. Baseyard Master Plan Workshop
5. Employee of the Year Resolutions *(February 2021)*

At 10:50 a.m., Mr. Hull read the Executive Session language.

Mr. Hull moved to go into Executive Session; seconded by Ms. Simonton.
Mr. Hull amended his motion to go into Executive Session; seconded by Ms. Simonton; to include as resources Manager Knoff and Mr. Robert O'Brien for Executive Session items No. 1 & No. 3; with no objections, motion caried with 4 ayes.

DCA Krafft added that the Board would return to the Regular Board meeting in 45 minutes after Executive Session to address New Business Item No. 2 Creating a Permitted Interaction Group.

EXECUTIVE SESSION

1. Pursuant to Hawai'i Revised Statutes § 92-4 and § 92-5(a)(4), the purpose of this Executive Session is for the Board to consult with the Board's attorney on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities as it relates to this agenda item:

   Correspondence from Shawn L. Shimabukuro, Grove Farm regarding Request for Revenue Requirement Shortfall per Water Treatment and Delivery Agreement dated December 17, 2020

2. Pursuant to Hawai'i Revised Statues §94-4 and §92-5(a)(2) and (4), the purpose of this executive session is for the Board to consider the hiring of the Manager and Chief Engineer, where consideration of matters affecting privacy will be involved; provided that if the individual concerned requests an open meeting, an open meeting shall be held; and to consult with the Board's attorney on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities as it relates to this agenda item:

   Discussion and Possible Action on Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer

   After Executive Session, the Board deferred this agenda item to schedule a Special Board Meeting to establish a PIG.

At 11:45 a.m., Mr. Akamine re-joined the meeting.

3. Pursuant to Hawai'i Revised Statutes § 92-4 and § 92-5(a)(4), the purpose of this Executive Session is for the Board to consult with the Board's attorney on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities as it relates to this agenda item:

   Correspondence from Corey Yamashita, Goodfellow Bros. regarding Request for Equitable Adjustment, Job No. 15-07, Reorganize Water System: Kaumuali'i Highway 16-Inch Main and Emergency Pump Connection, Hanapēpē Road 6-Inch Main Replacement, Job No. 15-07, Water Plan Project No. HE-01, HE-10, Hanapēpē, Kaua'i, Hawai'i dated December 18, 2020

   No action

At 12:03 p.m., Chair Kamm called the Regular Board meeting back to order.

NEW BUSINESS

After Executive Session, the Board deferred to schedule a Special Board meeting to establish a Permitted Action Group regarding New Busines Item No. 2 Discussion and Possible Action of Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer.

ADJOURNMENT

Mr. Hull moved to adjourn the Regular Board meeting at 12:05 p.m.; seconded by Mr. Akamine; with no objections, motion carried with 5 ayes.

Respectfully submitted,

Edith Ignacio Neumiller
Commission Support Clerk

Approved,

Julie Simonton
Secretary, Board of Water Supply

SPECIAL BOARD MEETING MINUTES
BOARD OF WATER SUPPLY
Monday, February 8, 2021

The Board of Water, County of Kaua'i, met in a special meeting via remote in Līhu'e on Monday, February 8, 2021. Chair Gregory Kamm called the meeting to order at approximately 10:10 a.m.

BOARD: Mr. Gregory Kamm, *Board Chair*
Mr. Kurt Akamine, *Vice Chair*
Mr. Ka`aina Hull
Mr. Lawrence Dill
Mr. Troy Tanigawa
Mr. Elesther Calipjo
Ms. Julie Simonton *(difficulty joining via remote)*

Quorum was achieved with 6 members present at Roll Call.

STAFF: Mr. Mark Knoff, Manager & Chief Engineer
DCA Mahealani Krafft
Ms. Mary-jane Akuna
Mr. Jas Banwait

APPROVAL OF AGENDA:
Mr. Akamine moved to approve the agenda; seconded by Mr. Hull; with no objections; motion carried with 6 ayes.

APPROVAL OF MEETING MINUTES
None.

PUBLIC TESTIMONY
There were no written or phone message testimonies received.

OLD BUSINESS
1. Discussion and Possible Action on Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer

Mr. Hull moved to defer discussion of the PIG until after Executive Session; seconded by Mr. Dill; with no objections; motion carried with 6 ayes.

NEW BUSINESS
Discussion and Possible Action on the hiring of Manager and Chief Engineer

Mr. Hull read the Executive Session language at 10:13 a.m. to discuss the New Business item.

Chair moved into Executive Session; with no objections; motion carried with 6 ayes.

EXECUTIVE SESSION
Pursuant to Hawai'i Revised Statues (HRS) §92-7(a), the Board may, when deemed necessary, hold an executive session on any agenda item without written public notice if the Executive Session was not anticipated in advance. Any such executive session shall be held pursuant to HRS §92-4 and shall be limited to those items described in HRS §92-5(a).

1. Pursuant to Hawai'i Revised Statues §94-4 and §92-5(a)(2), the purpose of this executive session is for the Board to consider the hiring of the Manager and Chief Engineer, where consideration of matters affecting privacy will be involved; provided that if the individual concerned requests an open meeting, an open meeting shall be held, as it relates to this agenda item:

Discussion and Possible Action on the hiring of a Manager and Chief Engineer

Chair Kamm reconvened the Special Board meeting at 11:47 a.m., with no objections.

OLD BUSINESS (cont'd)

2. Discussion and Possible Action on Creating a Permitted Interaction Group for the Recruitment and Recommendation of a Manager and Chief Engineer

DISCUSSION:

The Board established the membership of the PIG: Ka'aina Hull, Lawrence Dill & Troy Tanigawa. DCA Krafft mentioned that the scope of the PIG needs to be determined.

The Board established the scope of the PIG to reflect the process followed by the previous PIG, specifically:

1. Establish a pool of applicants (previously done via an advertisement and procurement of Executive Search Services).
2. All applicants are routed through Department of Human Resources to ensure the minimum qualifications are met ("eligible candidates");
3. Eligible candidates are sent to the PIG who then evaluates the applications and conducts preliminary interviews; and
4. PIG will report back to the Board on their recommendations of candidates to be interviewed by the Board as a whole.

Note: If a headhunter is used to make changes to the ad, the license is no longer a requirement.

Mr. Hull moved to approve and apply the same scope that was used previously by the Permitted Interaction Group; seconded by Mr. Akamine; with no objections, motion carried with 6 ayes.

ADJOURNMENT

Mr. Hull moved to adjourn the Special Board Meeting at 11:52 a.m.; seconded by Ms. Simonton; with no objections, motion carried with 6 ayes.

Respectfully submitted,

Edith Ignacio Neumiller
Commission Support Clerk

Approved,

Julie Simonton
Secretary, Board of Water Supply

Public Testimonies

From:	lindnerji
To:	Board
Subject:	Fwd:
Date:	Tuesday, February 16, 2021 8:28:50 PM
Attachments:	Water Service for Fire Protection 215.2002.pdf Kula Fire Flow 862002 Tamm 1.pdf Hartwell Blake reply 892002.pdf Christian Acamedy Fire Flow waiver.pdf Kula School, fireflow ltr 10july2007.pdf

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Dear Chairperson Mr. Greg Kamm,

It has been explained to me that the postion charged with processing the leak rebate had been vacated and no replacement had been appointed. And that was the reason for the lack of response to our submission last May. Although we are prepared to accept that is the case, we are also aware of the past treatment by KDOW towards our school, which has been far from fair. So it is hard to take the explanation at face value. The Board has chosen in the past to not get involved and leave the issue to the Manager and County attorneys.

I believe it's appropriate to point out why we feel we have real reason to be concerned . As you can understand from the attachments below, the school ran into a problem getting approval for adequate Fire Flow standards. In 2001, Kula had been approved for a grant from the Alfred Castle foundation for construction of a library. A building permit was applied for the same year. Our local consultants were not able to resolve the Fire Flow issue with KDOW so we hired an attorney who specialized in that area. The result of our legal effort is clear from Bill Tam's letter 8/6/2002. A draft complaint was sent in 2003 but never filed. We chose to go through the Department's process that was finally resolved in 2007 at great expense and loss to school. Although permits were finally obtained, no buidling has taken place due to loss of grant and other funding. The school was forced to close a year later from lack of funds. We are currently operating on a scaled down program.

The situation would be some what understandable if the concern about the Fire Flow for schools was applied universally, but that was not the case. See attached documents regarding Christian Academy School. KDOW granted them a waiver to the Fire Flow requirements, even though they had a 6" main as opposed to our 8" main. We had pointed this out to the Manager at the time to no avail. It took us over 6 years to get approval for Fire Flow as opposed to a matter of a few months for our neighbor school. We went through 3 different managers. The reason for the special treatment has never been explained. We would like to make sure this situation is not related.

It is also not clear why the rebate is only available once every two years as was recently explained. Isn't the rebate program designed to give relief to users
who suffered leaks beyond their control? Both of our cases were caused by tree roots breaking the pipe. Considering the cost of a leak can be extemely high due to the quick ramp up in per gallon charge, and that the underground leak is likely to not be visible immediately, the Department should provide warnings or give giudelines before private water lines are

installed. In our case, without any other relief, we will need to abandon the current water line and run a new one far from any roots. The Department should consider installing smart meters where leaks can show up immediately since the leak charges are so high. Even if the Department doesn't want to fund an online meter, it could be made available to consumers at their cost. If something isn't offered to consumers when leaks become so exorbitant, the Department program takes on the appearance of revenue raising as opposed to water conserving.

Also, are their specific written guidelines provided that help in determining how much rebate a consumer is entitled to? Or is it open to an individual's
discretion in determining the amount of rebate? From my experience, it would be best to give clear guidelines justifying percents of rebate given to avoid any misunderstandings. And perhaps there would be cases where the two year time limit might be waived.

Sincerely,

Jeffrey Lindner
A Kula Hawaii

Alston Hunt Floyd &Ing

Attorneys at Law
A Law Corporation

WILLIAM M. TAM
E-MAIL:
wtam@ahfi.com
Direct Fax:
(808) 441-6588

February 15, 2002

Mr. Ernest Y. W. Lau
Manager & Chief Engineer
Kauai County Board of Water Supply
P.O. Box 1706
Lihue, Kauai, Hawai'i 96766

Re: A Kula International, a Hawai'i nonprofit corporation
Special Permit SP-93-1; Use Permit U-93-1; and
Class IV Zoning Permit Z-IV-93-1
Property: Lot 12, Waipake Subdivision, Unit 1
Waipake, Kauai, Hawai'i
Kauai TMK No. (4) 5-1-06:12
Owner: A Kula International
Water Service for Fire Protection

Dear Mr. Lau:

Thank you for talking with me on February 5, 2002, about the water supply and fire protection situation at Kula High and Intermediate School. As a follow up to our phone conversation, I am requesting that you provide me with copies of the following documents:

1. I would like a copy of the written decision and supporting documents by which the Board of Water Supply of the County of Kauai ("Board") approved and authorized the Kauai Christian Academy in Kilauea to meet its fire protection requirements through conditions other than ensuring water flow at a rate of 2000 gallons / minute for two hours. Please send me the information on which the Board based its decision to accept a different water flow than the 2000 gallons / two hours and the terms and conditions which the BWS Board imposed on the Christian Academy.

2. Part 3, Section VII, paragraph 3 of the Rules and Regulations of the Department of Water, County of Kauai ("DOW Rules") provides as follows:

> 3. Fire Protection. In fixing the standards for fire protection insofar as water supply is concerned, the Department will be guided by the standards of the National Board of Fire Underwriters in "Grading Cities and Towns of the United States with Reference to

18th Floor Pacific Tower
1001 Bishop Street
Honolulu Hawai'i 96813
Tel: (808) 524-1800
Fax: (808) 524-4591

65-1235A Opelo Road
Suite 5
Kamuela Hawai'i 96743
Tel: (808) 885-6762
Fax: (808) 885-8065

E-mail: info@ahfi.com
www.ahfi.com

Their Fire Defenses and Physical Conditions" and by any specific recommendations made by the said National Board with respect to the County.

Please send me a copy of the National Board of Fire Underwriters standard described in the rule, namely, "Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions" and any specific recommendations made by the said National Board with respect to the County.

3. I would like a copy of the Kauai County rule adopting the "2000 gallon / minute for two hours" condition as the fire flow requirement for schools in Kauai County. In particular, please provide me with the date on which the 2000 gallon / two hour figure was adopted as a "rule." As you know, Part I, Section II of the DOW Rules provides that "[a]ll rules and regulations of the Department shall be adopted and take effect in accordance with Section 91-3 and Section 91-4, Hawai'i Revised Statutes. . . ."[1] A copy of the relevant portions of Haw. Rev. Stat. §§ 91-3 and 91-4 are attached for your convenience. Finally, please provide me with a copy of any document indicating the date on which a public hearing was conducted on the proposed rule.

Please send me an invoice for all costs incurred in the reproduction of the requested materials.

Thank you for your assistance in this matter. I look forward to your early response.

Very truly yours,

William M. Tam
Counsel for A Kula International

cc: Mr. Jeffrey S. Lindner,
President, Board of Trustees
A Kula International

---

[1] See attached reprint of relevant portions of Haw. Rev. Stat. §§ 91-3 and 91-4.

189686-2 / 6710-1

Maryanne W. Kusaka
Mayor

Hartwell H. K. Blake
County Attorney

OFFICE OF THE COUNTY ATTORNEY
COUNTY OF KAUA'I, STATE OF HAWAI'I
MO'IKEHA BUILDING
4444 RICE STREET, SUITE 220
LIHU'E, KAUA'I, HAWAI'I 96766-1300
TEL (808) 241-6315
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Deputies
Amy I. Esaki, First Deputy
Galen T. Nakamura
Margaret Hanson
Laurel Loo
Wayne S. Shimizu
Curtis H. Shiramizu

August 9, 2002

William M. Tam, Esq.
Alston Hunt Floyd & Ing
18th Floor, Pacific Tower
1001 Bishop Street
Honolulu, Hawaii 96813

RE: A Kula International, a Hawaii non-profit corporation
Special Permit SP-93-1; Use Permit U-93-1 and
Class IV Zoning Permit Z-IV-93-1
Property: Lot 12, Waipake Subdivision, Unit 1
Waipake, Kauai, Hawaii
Kauai TMK No. (4) 5-1-06:12
Owner: A Kula International
Water Service for Fire Protection

Dear Mr. Tam:

You have sent me numerous items of correspondence, and you have had numerous conversations with both myself and Water Manager Ernest Lau regarding your client's Building Permit Application #00-457. At all times you have conveyed the impression that but for the Department of Water's 2,000-gallon-per-minute-2-hour fire hydrant condition, the building permit for the library/classroom building would be a fait accompli. However, it appears that your client has long standing permit deficiencies to rectify before it can reasonably expect to obtain a new building permit for a two-story library/classroom or a one-story library or a one-story classroom.

Pursuant to the suggestion contained in your 8/6/02 letter to Water Manager Ernest Lau, I checked on the status of the Kula School permits with the Planning Department. I learned that the Department wrote to your client on April 3, 2000, to remind it that as of July 1993:

- the Phase I design of the school had been reviewed and approved by the Planning Commission;
- your client was to seek design review and approval for its Phases II and III from the Planning Commission;

- the proposed library/classroom building design was not a part of Phase I, as approved by the Commission in 1993, and it appears that it would more properly be presented for approval by the Commission either as an amendment to Phase I or as part of Phase II; and, as proposed,
- the proposed library/classroom did not meet certain conditions of Special Permit SP-93-1, Use Permit U-93-1, and Class IV Zoning Permit Z-IV-93-1.

The April 3, 2000, letter stated, unequivocally, that "the proposed library/classroom design must be reviewed by the Planning Commission." Further, the building was required to be one-story or Condition #9 would have to be amended. Finally, a status report of compliance with all conditions was requested.

Based on the foregoing, your client requested that the Planning Commission amend conditions #3, 8, 9, and 20, and approve a revised Phase I to include the library/classroom. Prior to the Commission's disposition of the amendments, your client withdrew its request (on October 23,2001).

As of the July 8, 1993, Planning Commission meeting, the only buildings in Phase I were the administration building and two classrooms. The phasing plan and site model approved by the Commission on January 28 and July 8, 1993, respectively, are the only approved phasing and plan for the school. The proposed library/classroom was not part of Phase I. The building which you now propose to construct under Building Permit #00-457 has not received Final Approval from the Commission.

You may also wish to advise your client that the Planning Department is very concerned about an apparent failure to comply with conditions #2, 3, 8, 9, and 20, of the original permits. The Department is also concerned about compliance with conditions # 4, 10, 11, 12, and 21. It has received no further indication, oral or written, about how the school is complying or has complied with these conditions.

During the processing of Building Permit #00-457, the proposed structure was changed from a two-story library/classroom to a one-story library, and then to a one-story classroom (without revision notes). Since neither the library/classroom, nor library, nor classroom were reviewed and approved by the Planning Commission as part of any phase of the school, the Planning Department did not sign off on the building permit.

Building Permit #01-1740 for the addition to the pavilion building, which had already been constructed, has not been approved. The addition violates Condition #9 of the subject permits.

Finally, the County of Kauai does not consider fire protection measures, even at Kula School which is located approximately ten miles from the Princeville Fire Station, to be unrelated to student and teacher safety. Given the unpredictability of emergencies and the manner in which they occur, fire protection at Kula School cannot be viewed as "essentially an insurance issue."

In consideration of the numerous tasks to be completed by your client vis-a-vis compliance with the permits, it appears that your efforts on its behalf, relative to Building Permit #00-457 are premature and misdirected. Your client may wish to consider directing its resources to addressing Planning Department concerns relative to original-permit, non-compliance issues in existence long before this application was initiated, before seeking to secure another permit. In this manner, the cart is not placed before the horse.

Sincerely,

HARTWELL H. K. BLAKE
County Attorney

cc: Department of Water
Mayor Maryanne Kusaka
Board of Water Supply Members
Kauai County Council
A Kula International dba Kula High & Intermediate

Maryanne W. Kusaka
Mayor

Hartwell H. K. Blake
County Attorney

OFFICE OF THE COUNTY ATTORNEY
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August 9, 2002

William M. Tam, Esq.
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RE: A Kula International, a Hawaii non-profit corporation
Special Permit SP-93-1; Use Permit U-93-1 and
Class IV Zoning Permit Z-IV-93-1
Property: Lot 12, Waipake Subdivision, Unit 1
Waipake, Kauai, Hawaii
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Water Service for Fire Protection

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Pursuant to the suggestion contained in your 8/6/02 letter to Water Manager Ernest Lau, I checked on the status of the Kula School permits with the Planning Department. I learned that the Department wrote to your client on April 3, 2000, to remind it that as of July 1993:

- the Phase I design of the school had been reviewed and approved by the Planning Commission;
- your client was to seek design review and approval for its Phases II and III from the Planning Commission;

S. S. DANNAWAY ASSOCIATES, INC.
FIRE PROTECTION ENGINEERS/BUILDING CODE CONSULTANTS
720 Iwilei Road, Suite 412
Honolulu, Hawaii 96817-5316
Telephone: (808) 526-9019
Facsimile: (808) 537-5385
E-mail: ssda@hawaii.rr.com

10 July 2007

Edward Tschupp, Manager and Chief Engineer
Department of Water
County of Kauai, Hawaii

Robert Westerman, Fire Chief
Kauai County Fire Department

Project: Kula School
Use Permit U-99-19
Special Permit SP-93-1
Class IV Zoning Permit Z-IV-93-1
Building Permit 00457
TMK 5-1-06:12
Kilauea, Hawaii

Subject: Fire Flow Requirements

Gentlemen:

Pursuant to exceptions to Table 100-19A of the 2002 Water System Standards contained in the 2005 Amendments to the 2002 Water System Standards [see Annotations to Table 100-19A item (f) (ii)], it is proposed to use alternative methodology contained in NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting, 2001 edition published by the National Fire Protection Association (excerpts are attached) to establish the minimum fire protection water supply requirement for the Kula School.

The Department of Water, County of Kauai has established a fire flow requirement for the facility of 2,000 gallons per minute (gpm) for two hours. This requirement is based on the State of Hawaii Water System Standards in Kauai County for "schools, retails stores and shops, shopping centers, hotels, and hospitals."

Though 2,000 gallons per minute for 2 hours is not available on-site, it is my opinion that adequate fire protection/fire fighting water is provided for the school as it currently exists and including the proposed library building and other future buildings planned for the site. I base my opinion on the following:

Life Safety

The threat of serious injury or loss of life due to fire is extremely low for this school. All classrooms, as well as the planned library, have at least two exits. Furthermore, these exits are all direct to the outside. It takes less than one minute for all students to evacuate the buildings, thus a complete evacuation will be accomplished well before arrival of the fire department (It is noted that the closest fire station to the school is over nine miles away with an estimated 15 to 20 minute response time).

Fire drills are conducted on a monthly basis.

In addition to fire drills, a monthly fire safety inspection is performed by staff, using a checklist. Evacuation procedures are documented and escape plans are posted. Portable fire extinguishers are placed at strategic locations. Although instructed that their primary role in a fire emergency is to assure the safe evacuation of all students, the staff is also trained in the use of portable fire extinguishers.

Fire hazards within the property have been minimized. Smoking is prohibited, and there is no cooking at the site.

A fire alarm system is not required for this facility, based on the Kauai County Fire Code. Also, no fire alarm system would be required under the 1997 or 2003 Uniform Fire Code, or the 2003 International Fire Code. The floor plans are arranged such that any occurrence of fire would be immediately obvious to the students and teachers.

Exposure to Other Buildings

The existing buildings on-site do expose one another. This is accounted for in the water supply calculations below. However, the school buildings do not present any exposure hazard to buildings on adjoining property. This will also be the case for the planned library. The nearest significant structures are many hundreds of feet away.

Fire Protection Water Supply

There is an existing standpipe with a 2 ½-inch hose valve located near the front of the Classroom Buildings. This standpipe is connected to an 8-inch ductile iron water line connected to a 100,000 gallon tank. There is approximately 3,200 feet of 8-inch piping between the water tank and the hose valve. The bottom of the water tank is at elevation 545.5 feet and the tank overflow is at 563 feet. The standpipe hose valve is located at an approximate elevation of 400 feet.

Additional standard fire hydrants connected to waterlines served by the 100,000 gallon tank will be provided on the school property.

Our calculations indicate that the system is capable of providing 1,000 gpm for 50 minutes. This calculation assumes the tank is only 50% full.

Though this flow does not meet the 2,000 gpm currently required by the State Water System Standards, it is my opinion that it is adequate to fully support fire fighting operations at an incident involving this school.

I base this opinion on the following:

1. A fire hydrant flow test performed by the County of Kauai on April 20, 2007 on the nearest county fire hydrant to the school, located on Kapuna Road, indicates an available fire flow of approximately 2,500 gpm at 20 psi (see attached letter). This hydrant is not within minimum distances required by the fire code.

2. Calculations based on NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting, 2001 edition published by the National Fire Protection Association (excerpts are attached) demonstrate the adequacy of the "onsite" water supply.

   NFPA 1142 is a standard intended to establish minimum water supplies for structural fire fighting purposes in rural and suburban areas. The NFPA 1142 calculated water supply for the Classroom/Administration and planned Library are as follows:

NFPA 1142 Minimum Water Supply Calculations

Building:	**Classroom/Administration**
Building Area	5,000 square feet
Height	15 feet
Total Volume	75,000 cubic feet
Occupancy	School/Office
Occupancy Hazard Classification (OHC)	O.C. 7 (Light Hazard Occupancy where the quantity and combustibility of contents is relatively light).
Construction Classification (CC)	CC No.1.5 Type V-(000) or Type V N
Exposure Hazard	Classroom Building
Minimum water supply from Table H-1.4(b) =	16,286 gallons
Exposure Factor –	Multiply by 1.5

Total Required Water Supply (NFPA 1142) = 16,286 x 1.5 = 24,429 gallons, say 25,000 gallons

Available Flow from Standpipe/Hydrant	1,000 gallons per minute
Available duration of this flow	50 minutes

Quantity of water available = 1,000 gpm x 50 minutes = 50,000 gallons

Conclusion: The available water supply exceeds the minimum supply that would be required by NFPA 1142.

NFPA 1142 Minimum Water Supply Calculations

Building:	**Library**
Building Area	4,000 square feet
Height	15 feet
Total Volume	60,000 cubic feet
Occupancy	School/Office
Occupancy Hazard Classification (OHC)	O.C.5 (Moderate Hazard Occupancy).
Construction Classification (CC)	CC No. 1.5 Type V-(000) or Type V N
Exposure Hazard	Classroom Building
Minimum water supply from Table H-1.4(b) =	18,000 gallons
Exposure Factor –	Multiply by 1.5

Total Required Water Supply (NFPA 1142) = 18,000 x 1.5 = 27,000 gallons

Available Flow from Standpipe/Hydrant	1,000 gallons per minute
Available duration of this flow	50 minutes

Quantity of water available = 1,000 gpm x 50 minutes = 50,000 gallons

Conclusion: The available water supply exceeds the minimum supply that would be required by NFPA 1142.

Based on the availability of a public water supply on Kapuna Road with adequate fire flow, a private water supply meeting the requirements of NFPA 1142, the minimal threat to life safety and the absence of any significant fire exposure hazard to other structures or property, it is my opinion that the available water supply at the project site is adequate to afford protection for the school.

Please call if there are any questions.

Sincerely,

S. S. DANNAWAY ASSOCIATES, INC.

Samuel S. Dannaway, P.E.
President and Chief Fire Protection Engineer
State of Hawaii Professional Engineer License PE-9349 expires 04/30/2008

2. **Table 100-19 "FIRE FLOW REQUIREMENTS"**: Table 100-19 is hereby deleted from the 2002 Standards and replaced in its entirety as follows. Any and all references in the 2002 Standards to Table 100-19 shall mean this Table 100-19A:

Table 100-19A FIRE FLOW REQUIREMENTS
FOR COUNTY OF KAUA'I

LAND USE	FLOW (GPM) / DURATION (HOURS) / FIRE HYDRANT SPACING (FEET)
Agriculture	250 / 1 / 500
Rural	
Single Family	*See* Note (b) below
Duplex	*See* Note (b)below
PUD Townhouses, Apartments	*See* Note (b)below
Schools, Retail Stores or Shops, Shopping Centers, Hotels, and Hospitals	2,000 / 2 / 350
Industry	3,000 / 3 / 350

ANNOTATIONS TO TABLE 100-19A:

(a) "GPM" means gallons per minute.

(b) Fire Flow, Duration, and Fire Hydrant Spacing shall be dictated by the following zoning district designations described in the Kaua'i County Code.

R-2: 500/1/500
R-4: 750/2/500
R-6: 1000/2/500
R-10: 1250/2/350
R-20: 1500/2/350
RR-10: 1500/2/350
RR-20: 2000/2/350

(c) On dead end streets, the last fire hydrant shall be located at one-half (½) the spacing distance for fire hydrants from the last house/unit (frontage property line or to the driveway or access for the property).

(d) Spacing of fire hydrants shall be measured along the roadway.

(e) The Department may utilize State and County statutes, codes, administrative rules and other authoritative sources of law in interpreting the land use classifications described in Table 100-19A. These legal authorities include, but are not limited to, chapters 8 (Comprehensive Zoning Ordinance) and 9 (Subdivision Ordinance) of the Kaua'i County Code, and H.R.S. chapter 205.

(f) General applicability of Table 100-19A; exceptions thereto: Unless otherwise specifically adverted to in this annotation (f), the 2002 Standards, or the Department's administrative rules, the requirements of Table 100-19A shall apply to all County subdivision applications and actions, all County zoning and use permit applications, all requests for variances, all requests for building permit approval from the Department, all requests for water service from the Department, and all other actions which may fall under the jurisdiction of the Department.

As used in this annotation (f), the terms "dwelling unit" and "lot" shall have the meanings ascribed to them in K.C.C. Sec. 8-1.5.

The requirements of Table 100-19A are minimum standards; the Department may, in consultation with the Kaua'i County Fire Department, determine that additional or more stringent fire flow, flow duration, and hydrant spacing requirements are appropriate and necessary in certain cases because of heightened fire safety concerns.

(i) Building permit approval for first and second dwelling units; Applications for first and second ⅝" water meters: When County building permit approval is sought from the Department for the first and second dwelling units only on an existing lot of record, the requirements of Table 100-19A shall not apply. However, the requirements of Table 100-19A shall apply when County building permit approval is sought from the Department for any dwelling unit in excess of the second dwelling unit on an existing lot of record.

When application is made for a first or second five-eighth inch (⅝") water meter only to serve an existing lot of record, the requirements of Table 100-19A shall not apply. However, the requirements of Table 100-19A shall apply when application is made for any five-eighth inch (⅝") water meter to serve an existing lot of record in excess of the second ⅝" water meter. The foregoing exception for ⅝" water meters shall not apply to applications for any other size water meters.

(ii) Alternative methodology for satisfying fire protection requirements for non-residential structures: Where County building permit approval is sought from the Department for any structure other than a home, house, or dwelling unit, an applicant may utilize the alternative methodology described in this paragraph (ii) of annotation (f) in lieu of satisfying the requirements of Table 100-19A.

As used in this paragraph (ii) of annotation (f), "Fire Chief" or "Chief" means the Fire Chief of the County of Kaua'i. "On-site" means on the lot to which the building permit appertains. "Off-site" means off and away from the lot to which the building permit appertains.

Under this paragraph (ii) of annotation (f), an applicant need not satisfy the requirements of Table 100-19A if:

(A) The applicant submits a written analysis signed by a professional engineer licensed under H.R.S. chapter 464, in which the engineer certifies that the existing off-site water system, together with the addition of on-site fire mitigation measures, satisfy the fire protection

requirements of the National Fire Protection Association (hereafter "NFPA");

(B) The professional engineer submitting the required certification possesses, at the time the certification is provided, a minimum of three years engineering experience as a licensed professional engineer in responsible charge of fire protection engineering work or has experience, in the Department's judgment, equivalent to such engineering work; and

(C) The applicant submits the written analysis described in subparagraph (A) of this paragraph (ii) to both the Water Department and the County Fire Chief, and the Fire Chief does not reject the sufficiency of the applicant's fire mitigation measures.

The Chief may reject the sufficiency of the applicant's fire mitigation measures if the Chief determines that:

- the measures are insufficient relative to the structures to be built on the lot, or the uses which will occur in conjunction with the proposed structures, or both; or

- the measures are insufficient to prevent the spread of any potential on-site fire to off-site structures or uses, or both, surrounding or adjacent to the lot.

In evaluating the sufficiency of any mitigation measures, the Fire Chief may consider the *Fire Code of the County of Kaua'i*, the codes and standards of the NFPA, the International Code Council's *Uniform Fire Code* (as may be amended from time to time), and other nationally-recognized fire protection codes or standards, or both.

The Fire Chief may reject the sufficiency of the applicant's measures no later than one-hundred twenty (120) calendar days after the Chief has determined in writing that the applicant has submitted a complete written analysis to the Chief.[1] The burden shall be on the Applicant to provide the Chief with a complete written analysis.

If the Chief rejects the sufficiency of the applicant's measures, the Chief shall so inform the Water Department, who shall in turn inform the applicant of the rejection.

The Applicant shall have the burden of proving to the Water Department that the professional engineer submitting the certification described in this paragraph (ii) of annotation (f) has the necessary qualifications described in subparagraph (B) of this paragraph (ii).

This paragraph (ii) only of annotation (f) shall be repealed on July 1, 2008.

---

[1] *H.R.S. 91-13.5*

Department of Water
County of Kaua'i

Water has no substitute.....Conserve it

April 20, 2007

UID #3489

Mr. Eric Knutzen
4313 Kapuna Road
Kilauea, HI 96754

Dear Mr. Knutzen:

Subject: Requested Fire Flow Data Regarding Fire Hydrant Flow Test of Hydrant X-108, TMK: 5-1-06:012 Kapuna Road, Kilauea, Kaua'i, Hawaii

This is in response to your verbal request for information regarding fire hydrant flow test data on a hydrant nearest to TMK: 5-1-06:012. Our records indicate that a fire hydrant flow test for Hydrant X-108 was done on June 05, 1996.

The most recent fire hydrant flow test for Hydrant X-108 was done on April 16, 2007. The data collected reflects conditions at the time of the test. Actual flows available will be dependent on the conditions of the water system at the time of flow. Present conditions may have changed. The results of the flow test conducted on April 16, 2007 are as follows:

Static Pressure:	38 pounds per square inch (psi)
Residual Pressure:	35 pounds per square inch (psi)
Pilot Reading:	26 pounds per square inch (psi)
Flow Q:	950 gallons per minute (gpm)

Flow with 20 psi residual Q_{20} = 2500 gpm

The Department of Water (DOW) will not be held liable for the information provided. The applicant is made aware that the flow test data is for informational purposes only and shall be used at your own discretion. Data collected from Fire Hydrant Flow Testing is for DOW's system planning purposes only and the Department does not accept responsibility for your use of this information.

Please contact me at (808) 245-5421 if you have any questions regarding the information provided.

Sincerely,

Keith Konishi

Keith Konishi
Engineering Support Technician

KK:mll
WSI Fire Hydrant Test Results -KNUTZEN

NFPA 1142

Standard on

Water Supplies for Suburban and Rural Fire Fighting

2001 Edition

This edition of NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*, was prepared by the Technical Committee on Forest and Rural Fire Protection and acted on by NFPA at its May Association Technical Meeting held May 13–17, 2001, in Anaheim, CA. It was issued by the Standards Council on July 13, 2001, with an effective date of August 2, 2001, and supersedes all previous editions.

This edition of NFPA 1142 was approved as an American National Standard on August 2, 2001.

Origin and Development of NFPA 1142

This text originally was NFPA 25, *Recommended Practices for Water Supply Systems for Rural Fire Protection*, as developed by the Subcommittee on Water Supply Systems for Rural Fire Protection of the Committee on Rural Fire Protection and Prevention. It received tentative adoption in 1969 and was further amended and adopted in May 1969 as NFPA 25. The 1975 edition represented a complete revision of the previous document, included a title change to *Water Supplies for Suburban and Rural Fire Fighting*, and was renumbered NFPA 1231.

The 1984, 1989, and 1993 editions again represented complete revisions to both mandatory and advisory material. The 1999 edition was again a complete revision with some significant changes and additions and was renumbered NFPA 1142, in keeping with the Committee's plan to group all its documents within a number range.

The 2001 edition is a partial revision and incorporates much of the information about the design of dry hydrants, formerly found in the appendices, into the requirements of the standard to encourage improved design and performance.

NFPA 1142

Standard on

Water Supplies for Suburban and Rural Fire Fighting

2001 Edition

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet between the paragraphs that remain.

A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another NFPA document. The complete title and edition of the document the material is extracted from is found in Annex I. Editorial changes to extracted material consist of revising references to an appropriate division in this document or the inclusion of the document number with the division number when the reference is to the original document. Requests for interpretations or revisions of extracted text shall be sent to the appropriate technical committee

Information on referenced publications can be found in Chapter 2 and Annex I.

Chapter 1 Administration

1.1 Scope. This standard shall identify minimum requirements for water supplies for structural fire-fighting purposes in rural and suburban areas where adequate and reliable water supply systems for fire-fighting purposes, as determined by the authority having jurisdiction, do not otherwise exist. The minimum requirements identified in this standard shall be subject to increase by the authority having jurisdiction to meet particular conditions such as the following:

(1) Limited fire department resources
(2) Extended fire department response time
(3) Delayed alarms
(4) Limited access
(5) Hazardous vegetation
(6) Structural attachments, such as decks and porches
(7) Unusual terrain
(8) Special uses

1.2* Purpose. The water supply requirements developed by this standard shall be performance oriented, and the authority having jurisdiction shall specify how these water supplies are made available.

1.2.1 This standard shall not set forth fireground operational parameters.

1.2.2 This standard shall not provide details for calculating an adequate amount of water for large special fire protection problems, such as bulk flammable liquid storage, bulk flammable gas storage, large varnish and paint factories, some plastics manufacturing and storage, aircraft hangars, distilleries, refineries, lumberyards, grain elevators, large chemical plants, coal mines, tunnels, subterranean structures, and warehouses using high rack storage for flammables or pressurized aerosols.

1.2.3 This standard shall not exclude the use of this water for other fire-fighting or emergency activities.

1.2.4 This standard shall not be an installation standard.

1.2.5 This standard shall not be used to calculate water supply for structures that are fully protected by an automatic fire sprinkler system installed in compliance with NFPA 13, *Standard for the Installation of Sprinkler Systems*; NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*; or NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.*

1.3 General.

1.3.1 The requirements of Chapters 4 through 7 shall be used for determining the minimum amount of water required for fire suppression. Chapter 9 on dry hydrant construction is performance oriented and shall allow the authority having jurisdiction latitude in specifying the method by which water supplies are provided, considering local conditions and needs.

1.3.2* The water requirements developed by this standard are performance oriented and shall be considered minimum in scope. The required water determined by the water supply officer shall be delivered to the fire scene. *(See Annexes A and B.)* The authority having jurisdiction shall be permitted to determine that additional water supplies are warranted. Annex G contains water supply recommendations that can be useful where the authority having jurisdiction determines additional water supplies are necessary.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 1999 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 1999 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*, 1999 edition.

NFPA 220, *Standard on Types of Building Construction*, 1999 edition.

NFPA 285, *Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus*, 1998 edition.

NFPA 299, *Standard for Protection of Life and Property from Wildfire*, 1997 edition.

NFPA 1141, *Standard for Fire Protection in Planned Building Groups*, 1998 edition.

NFPA 1963, *Standard for Fire Hose Connections*, 1998 edition.

2.1.2 Other Publications. (Reserved)

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not included, common usage of the terms shall apply.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction. The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

3.2.3 Shall. Indicates a mandatory requirement.

3.2.4 Should. Indicates a recommendation or that which is advised but not required.

3.2.5 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

3.3 General Definitions.

3.3.1 Adequate and Reliable Water Supply. See Water Supply.

3.3.2 Automatic Aid. A plan developed between two or more fire departments for immediate joint response on first alarms.

3.3.3 Building. Any structure used or intended for supporting any occupancy.

3.3.4 Classification Number.

3.3.4.1 Construction Classification Number. A series of numbers from 0.5 through 1.5 that are mathematical factors used in a formula to determine the total water supply requirements.

3.3.4.2 Occupancy Hazard Classification Number. A series of numbers from 3 through 7 that are mathematical factors used in a formula to determine total water supply requirements.

3.3.5 Dry Hydrant. An arrangement of pipe permanently connected to a water source other than a piped, pressurized water supply system that provides a ready means of water supply for fire-fighting purposes and that utilizes the drafting (suction) capability of fire department pumpers. [**299:**2.1]

3.3.6* Exposure Hazard. A structure within 50 ft (15.24 m) of another building and 100 ft^2 (9.3 m^2) or larger in area.

3.3.7* Fire Department. An organization providing rescue, fire suppression, and related activities. [**1001:**1.4]

3.3.8* Large Diameter Hose. A hose of 3½ in. (90 mm) size or larger. [**1961:**1.3]

3.3.9 Minimum Water Supply. See Water Supply.

3.3.10 Mobile Water Supply Apparatus (Tanker, Tender). A vehicle designed primarily for transporting (pickup, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment.

3.3.11 Municipal-Type Water System. A system having water pipes serving hydrants and designed to furnish, over and above domestic consumption, a minimum flow of 250 gpm (946 L/min) at 20 psi (139 kPa) residual pressure for a 2-hour duration. [**1141:**2.1]

3.3.12* Mutual Aid Plan. A plan developed between two or more agencies to render assistance to the parties of the agreement. [**1600:**1.3]

3.3.13 Occupancy Hazard Classification Number. See Classification Number.

3.3.14 Secondary (Design) Water Supply. See Water Supply.

3.3.15 Structure. That which is built or constructed; an edifice or building of any kind.

3.3.16 Water Supply.

3.3.16.1 Adequate and Reliable Water Supply. A water supply that is sufficient every day of the year to control and extinguish anticipated fires in the municipality, particular building, or building group served by the water supply.

3.3.16.2 Minimum Water Supply. The quantity of water required for fire control.

3.3.16.3 Secondary (Design) Water Supply. The estimated rate of flow [expressed in gpm (L/min) for a prescribed time period] that is necessary to control a major fire in a building or structure.

3.3.17* Water Supply Officer (WSO). The fire department officer responsible for providing water for fire-fighting purposes.

Chapter 4 Structure Surveys

4.1 General.

4.1.1* The minimum water supply required under this standard shall be determined by obtaining the following information:

(1) Classification of occupancy hazard
(2) Classification of construction
(3) Structure dimensions
(4) Exposures, if any

4.1.2* A record of water supplies shall be prepared and periodically updated. Required water supplies shall be of suitable quality as approved by the authority having jurisdiction, and be maintained and accessible on a year-round basis.

4.1.3 The minimum fire-fighting water supply shall be determined (per Chapter 7) from the information collected in 4.1.1 and 4.1.2.

Chapter 5 Classification of Occupancy Hazard

5.1 General.

5.1.1* The authority having jurisdiction, in conjunction with the fire department, upon obtaining the information specified in 4.1.1, shall determine the occupancy hazard classification number according to this chapter. These classification numbers shall range from 3 through 7.

5.1.2 Where more than one occupancy is present in a structure, the occupancy hazard classification number for the most hazardous occupancy shall be used for the entire structure.

5.2* Occupancy Hazard Classification Number.

5.2.1* Occupancy Hazard Classification 3.

5.2.1.1* Occupancy Hazard Classification 3 shall be used for severe hazard occupancies.

5.2.1.2 When an exposing structure is of occupancy hazard classification 3, it shall be considered an exposure hazard if within 50 ft (15.24 m), regardless of size.

5.2.1.3 This classification shall include occupancies with operations or functions similar to the following:

(1) Cereal or flour mills
(2) Combustible hydraulics
(3) Cotton picker and opening operations
(4) Die casting
(5) Explosives and pyrotechnics manufacturing and storage
(6) Feed and gristmills
(7) Flammable liquid spraying
(8) Flow coating/dipping
(9) Linseed oil mills
(10) Manufactured homes/modular building assembly
(11) Metal extruding
(12) Plastic processing
(13) Plywood and particle board manufacturing
(14) Printing using flammable inks
(15) Rubber reclaiming
(16) Sawmills
(17) Solvent extracting
(18) Straw or hay in bales
(19) Textile picking
(20) Upholstering with plastic foams

5.2.2* Occupancy Hazard Classification 4.

5.2.2.1* Occupancy Hazard Classification 4 shall be used for high hazard occupancies.

5.2.2.2 When an exposing structure is of occupancy hazard classification 4, it shall be considered an exposure hazard if within 50 ft (15.24 m), regardless of size.

5.2.2.3 This classification shall include occupancies having conditions similar to the following:

(1) Barns and stables (commercial)
(2) Building materials supply storage
(3) Department stores
(4) Exhibition halls, auditoriums, and theaters
(5) Feed stores (without processing)
(6) Freight terminals
(7) Mercantiles
(8) Paper and pulp mills
(9) Paper processing plants
(10) Piers and wharves
(11) Repair garages
(12) Rubber products manufacturing and storage
(13) Warehouses, such as those used for furniture, general storage, paint, paper, and woodworking industries

5.2.3* Occupancy Hazard Classification 5.

5.2.3.1 Occupancy Hazard Classification 5 shall be used for moderate hazard occupancies, in which the quantity or combustibility of contents is expected to develop moderate rates of spread and heat release. The storage of combustibles shall not exceed 12 ft (3.66 m) in height.

5.2.3.2 This classification shall include occupancy locations similar to the following:

(1) Amusement occupancies
(2) Clothing manufacturing plants
(3) Cold storage warehouses
(4) Confectionery product warehouses
(5) Farm storage buildings, such as corn cribs, dairy barns, equipment sheds, and hatcheries
(6) Laundries
(7) Leather goods manufacturing plants
(8) Libraries (with large stockroom areas)
(9) Lithography shops
(10) Machine shops
(11) Metalworking shops
(12) Nurseries (plant)
(13) Pharmaceutical manufacturing plants
(14) Printing and publishing plants
(15) Restaurants
(16) Rope and twine manufacturing plants
(17) Sugar refineries
(18) Tanneries
(19) Textile manufacturing plants
(20) Tobacco barns
(21) Unoccupied buildings

5.2.4* Occupancy Hazard Classification 6.

5.2.4.1 Occupancy Hazard Classification 6 shall be used for low hazard occupancies, in which the quantity or combustibility of contents is expected to develop relatively low rates of spread and heat release.

5.2.4.2 This classification shall include occupancy locations similar to the following:

(1) Armories
(2) Automobile parking garages
(3) Bakeries
(4) Barber or beauty shops
(5) Beverage manufacturing plants/breweries
(6) Boiler houses
(7) Brick, tile, and clay product manufacturing plants
(8) Canneries
(9) Cement plants
(10) Churches and similar religious structures
(11) Dairy products manufacturing and processing plants
(12) Doctors' offices
(13) Electronics plants
(14) Foundries
(15) Fur processing plants
(16) Gasoline service stations
(17) Glass and glass products manufacturing plants
(18) Horse stables
(19) Mortuaries
(20) Municipal buildings
(21) Post offices
(22) Slaughterhouses
(23) Telephone exchanges
(24) Tobacco manufacturing plants
(25) Watch and jewelry manufacturing plants
(26) Wineries

5.2.5* Occupancy Hazard Classification 7.

5.2.5.1 Occupancy Hazard Classification 7 shall be used for light hazard occupancies, in which the quantity or combustibility of contents is expected to develop relatively light rates of spread and heat release.

5.2.5.2 This classification shall include occupancy locations similar to the following:

(1) Apartments
(2) Colleges and universities
(3) Clubs

(4) Dormitories
(5) Dwellings
(6) Fire stations
(7) Fraternity or sorority houses
(8) Hospitals
(9) Hotels and motels
(10) Libraries (except large stockroom areas)
(11) Museums
(12) Nursing and convalescent homes
(13) Offices (including data processing)
(14) Police stations
(15) Prisons
(16) Schools
(17) Theaters without stages

Chapter 6 Classification of Construction

6.1 General.

6.1.1 The authority having jurisdiction shall obtain the information specified in 4.1.1 and shall determine the classification number according to this chapter.

6.1.2 For purposes of this standard, structures shall be classified by type of construction and shall be assigned a construction classification number.

6.1.3 Where more than one type of construction is present in a structure, the higher construction classification number shall be used for the entire structure.

6.2* Construction Classification Number.

6.2.1* Guide to Classification of Types of Building Construction. Classification of types of building construction shall be in accordance with NFPA 220, *Standard on Types of Building Construction.*

6.2.2 Type I (443 or 332) Construction [Construction Classification Number 0.5]. Type I construction shall be that type in which the structural members, including walls, columns, beams, girders, trusses, arches, floors, and roofs, are of approved noncombustible or limited-combustible materials and shall have fire resistance ratings not less than those specified in Table 6.2.2 (Table 3.1 in NFPA 220).

Table 6.2.2 Fire Resistance Ratings (in hours) for Type I through Type V Construction

	Type I		Type II			Type III		Type IV	Type V	
	443	332	222	111	000	211	200	2HH	111	000
Exterior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting one floor only	4	3	2	1	0[1]	2	2	2	1	0[1]
Supporting a roof only	4	3	1	1	0[1]	2	2	2	1	0[1]
Interior Bearing Walls										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	2	1	0
Supporting one floor only	3	2	2	1	0	1	0	1	1	0
Supporting roofs only	3	2	1	1	0	1	0	1	1	0
Columns										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Beams, Girders, Trusses, and Arches										
Supporting more than one floor, columns, or other bearing walls	4	3	2	1	0	1	0	H[2]	1	0
Supporting one floor only	3	2	2	1	0	1	0	H[2]	1	0
Supporting roofs only	3	2	1	1	0	1	0	H[2]	1	0
Floor Construction	3	2	2	1	0	1	0	H[2]	1	0
Roof Construction	2	1½	1	1	0	1	0	H[2]	1	0
Exterior Nonbearing Walls[3]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]	0[1]

Those members that shall be permitted to be of approved combustible material.

[1]See NFPA 220, A.3.1 (Table).
[2]"H" indicates heavy timber members; see NFPA 220 for requirements.
[3]Exterior nonbearing walls meeting the conditions of acceptance of NFPA 285, *Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus,* shall be permitted to be used.

6.2.3 Type II (222, 111, or 000) Construction [Construction Classification Number 0.75]. Type II construction shall be that type not qualifying as Type I construction in which the structural members, including walls, columns, beams, girders, trusses, arches, floors, and roofs, are of approved noncombustible or limited-combustible materials and shall have fire resistance ratings not less than those specified in Table 6.2.2. [**220**:3.2]

6.2.4* Type III (211 or 200) Construction [Construction Classification Number 1.0]. Type III construction shall be that type in which exterior walls and structural members that are portions of exterior walls are of approved noncombustible or limited-combustible materials, and interior structural members, including walls, columns, beams, girders, trusses, arches, floors, and roofs, are entirely or partially of wood of smaller dimensions than required for Type IV construction or of approved noncombustible, limited-combustible, or other approved combustible materials. In addition, structural members shall have fire resistance ratings not less than those specified in Table 6.2.2. [**220**:3.3]

6.2.5 Type IV (2HH) Construction [Construction Classification Number 0.75]. Type IV construction shall be that type in which exterior and interior walls and structural members that are portions of such walls are of approved noncombustible or limited-combustible materials. Other interior structural members, including columns, beams, girders, trusses, arches, floors, and roofs, shall be of solid or laminated wood without concealed spaces and shall comply with the provisions of 6.2.5.1 through 6.2.5.5. In addition, structural members shall have fire resistance ratings not less than those specified in Table 6.2.2.

Exception No. 1: Interior columns, arches, beams, girders, and trusses of approved materials other than wood shall be permitted, provided they are protected to provide a fire resistance rating of not less than 1 hour.

Exception No. 2: Certain concealed spaces shall be permitted by the exception to 6.2.5.3. [**220**:3.4.1]

6.2.5.1 Wood columns supporting floor loads shall be not less than 8 in. (203 mm) in any dimension; wood columns supporting roof loads only shall be not less than 6 in. (152 mm) in the smallest dimension and not less than 8 in. (203 mm) in depth. [**220**:3.4.2]

6.2.5.2 Wood beams and girders supporting floor loads shall be not less than 6 in. (152 mm) in width and not less than 10 in. (254 mm) in depth; wood beams and girders and other roof framing, supporting roof loads only, shall be not less than 4 in. (102 mm) in width and not less than 6 in. (152 mm) in depth. [**220**:3.4.3]

6.2.5.3 Framed or glued laminated arches that spring from grade or the floor line and timber trusses that support floor loads shall be not less than 8 in. (203 mm) in width or depth. Framed or glued laminated arches for roof construction that spring from grade or the floor line and do not support floor loads shall have members not less than 6 in. (152 mm) in width and not less than 8 in. (203 mm) in depth for the lower half of the member height and not less than 6 in. (152 mm) in depth for the upper half of the member height. Framed or glued laminated arches for roof construction that spring from the top of walls or wall abutments and timber trusses that do not support floor loads shall have members not less than 4 in. (102 mm) in width and not less than 6 in. (152 mm) in depth.

Exception: Spaced members shall be permitted to be composed of two or more pieces not less than 3 in. (76 mm) in thickness where blocked solidly throughout their intervening spaces or where such spaces are tightly closed by a continuous wood cover plate not less than 2 in. (51 mm) in thickness, secured to the underside of the members. [**220**:3.4.4]

6.2.5.3.1 Splice plates shall be not less than 3 in. (76 mm) in thickness. [**220**:3.4.4]

6.2.5.4 Floors shall be constructed of splined or tongue-and-groove plank not less than 3 in. (76 mm) in thickness that is covered with 1-in. (25-mm) tongue-and-groove flooring, laid crosswise or diagonally to the plank, or with ½-in. (12.7-mm) plywood; or they shall be constructed of laminated planks not less than 4 in. (102 mm) in width, set close together on edge, spiked at intervals of 18 in. (457 mm), and covered with 1-in. (25-mm) tongue-and-groove flooring, laid crosswise or diagonally to the plank, or with ½-in. (12.7-mm) plywood. [**220**:3.4.5]

6.2.5.5 Roof decks shall be constructed of splined or tongue-and-groove plank not less than 2 in. (51 mm) in thickness; or of laminated planks not less than 3 in. (76 mm) in width, set close together on edge, and laid as required for floors; or of 1⅛-in. (28.6-mm) thick interior plywood (exterior glue); or of approved noncombustible or limited-combustible materials of equivalent fire durability. [**220**:3.4.6]

6.2.6 Type V (111 or 000) Construction [Construction Classification No. 1.5]. Type V construction shall be that type in which exterior walls, bearing walls, columns, beams, girders, trusses, arches, floors, and roofs are entirely or partially of wood or other approved combustible material smaller than material required for Type IV construction. In addition, structural members shall have fire resistance ratings not less than those specified in Table 6.2.2. [**220**:3.5]

Chapter 7 Calculating Minimum Water Supplies

7.1 General.

7.1.1 After completing the structure survey and determining the construction classification number and the occupancy hazard classification number, the authority having jurisdiction shall compute the required minimum water supply.

7.1.2 A structure shall be considered an exposure hazard if it is 100 ft^2 (9.29 m^2) or larger in area and is within 50 ft (15.24 m) of another structure. However, if a structure, regardless of size, is of occupancy hazard classification number 3 or 4, it shall be considered an exposure hazard if within 50 ft (15.24 m) of another structure.

7.2 Structures Without Exposure Hazards. For structures with no exposure hazards, the minimum water supply, in gallons, shall be determined by the total cubic footage of the structure, including any attached structures, divided by the occupancy hazard classification number as determined from Chapter 5, and multiplied by the construction classification number as determined from Chapter 6. *(See Annex H for sample calculations for structures without exposure hazards.)*

$$\text{minimum water supply} = \frac{\left(\begin{matrix}\text{total volume}\\ \text{of structure}\end{matrix}\right)}{\left(\begin{matrix}\text{occupancy hazard}\\ \text{classification number}\end{matrix}\right)} \times \begin{matrix}\text{construction}\\ \text{classification}\\ \text{number}\end{matrix}$$

7.2.1 The minimum water supply required for any structure without exposure hazards shall not be less than 2000 gal (7570 L). *[See Table H.1.4(b).]*

7.2.2 The minimum water supply, as determined for any structure that is specified in Section 7.2 and 7.2.1, shall be provided for emergency operations.

7.3 Structures with Exposure Hazards.

7.3.1 For structures with unattached structural exposure hazards, the minimum water supply, in gallons, shall be determined by the cubic footage of the structure, divided by the occupancy hazard classification number as determined from Chapter 5, multiplied from the construction classification number as determined from Chapter 6, and multiplied by 1.5. *(See Annex H for sample calculations for structures with exposure hazards.)*

$$\text{minimum water supply} = \frac{\left(\text{total volume of structure}\right)}{\left(\text{occupancy hazard classification number}\right)} \times \text{construction classification number} \times 1.5$$

7.3.2 The minimum water supply required for structure with exposure hazards specified in 7.3.1 shall not be less than 3000 gal (11,355 L). *[See Table H.1.4(b).]*

7.4 Structures with Automatic Sprinkler Protection.

7.4.1 The authority having jurisdiction shall be permitted to waive the water supply required by this standard when a structure is protected by an automatic sprinkler system that fully meets the requirements of NFPA 13, *Standard for the Installation of Sprinkler Systems*; NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*; or NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height. (See Annex F.)*

7.4.2 If a sprinkler system protecting a building does not fully meet the requirements of NFPA 13, NFPA 13D, or NFPA 13R, a water supply shall be provided in accordance with this standard.

7.5 Structures with Other Automatic Fire Suppression Systems. For any structure fully or partially protected by an automatic fire suppression system other than as specified in Section 7.4, the authority having jurisdiction shall determine the minimum water supply required for fire-fighting purposes.

Chapter 8 Water Supply

8.1 Water Source Approval. Any water source used to meet the requirement of this standard shall be of suitable quality as approved by the authority having jurisdiction and be maintained and accessible on a year-round basis.

8.2 Water Use Agreements. The authority having jurisdiction shall enter into water use agreements when a private source of water is used to meet the requirements of this standard.

8.3 Identifying Water Sources. A water source indicator approved by the authority having jurisdiction shall be erected at each water point identifying the site for fire department emergency use.

8.4 Fire Department Connections. Any connection provided at a water source required by this standard shall be approved by the authority having jurisdiction and shall conform to NFPA 1963, *Standard for Fire Hose Connections.*

8.5 Access to Water Sources. Means of access to any required water supply shall be constructed and maintained according to NFPA 299, *Standard for Protection of Life and Property from Wildfire;* NFPA 1141, *Standard for Fire Protection in Planned Building Groups;* and local regulations.

Chapter 9 Dry Hydrants

9.1* General. The authority having jurisdiction shall ensure that generally accepted design practices are employed during the following:

(1) Dry hydrant planning
(2) The permit process
(3) Design criteria
(4) Construction

9.2* Planning and Permits. The planning, permitting, and design processes shall be completed before the actual construction begins.

9.2.1 Planning. Planning shall involve all affected agencies and private concerns so that a coordinated effort is undertaken.

9.2.2 Permits. Required permits to install a dry hydrant shall be obtained from the authorities having jurisdiction prior to installation.

9.3* Dry Hydrant Design and Location.

9.3.1* Design Criteria. To ensure safety of design, functionality, installation, maintenance, and proper appropriation of financial resources, the authority having jurisdiction shall approve all aspects of construction design, type of materials, pipe, and system fittings.

9.3.2* The authority having jurisdiction shall determine which materials are best suited to meet fire flow needs and installation conditions. In no case shall less than Schedule 40 pipe and component fittings be used.

9.3.3* All dry hydrant systems shall be designed and constructed to provide a minimum flow of 1000 gpm (3780 L/min) at draft.

9.3.4* Dry hydrant systems shall be designed and constructed so that slope and piping configuration does not impede drafting capability.

9.3.5* All exposed surfaces and all underground metal surfaces shall be protected to prevent deterioration.

9.3.6* Subject to alternative engineering practices, no more than the equivalent of two 90-degree elbows shall be used in the total system.

9.3.7 Dry hydrant(s) shall be designed and constructed to include a suitable protective cap. Steamer connection(s) shall be compatible with the fire department's hard suction hose size and shall conform to NFPA 1963, *Standard for Fire Hose Connections.*

9.3.8* An acceptable system design formula shall be developed that reflects the various requirements outlined in this

(901.1 m^2). Both buildings are operated as moderate hazard. The basements have light-hazard and low-hazard contents. The effective area for the building is as follows:

7300 + 9700 + 0.5 [2(7300) + 4(9700)] =
43,700 ft^2 (4059.7 m^2)

The (C_i) (O_i) for the building is based on the predominant construction class of the building. In this case, more than 66⅔ percent of the total floor and roof area is of ordinary construction. The predominant construction class is ordinary construction. Therefore, under occupancy hazard classification 5, the value for (C_i) (O_i) for an effective area of 43,700 ft^2 (4059.7 m^2) = 3750 gpm (14,213 L/min).

G.1.6.3 Example 3. A one-story, ordinary-construction building occupied as moderate hazard without basement has an area of 210,000 ft^2 (19,509 m^2). The effective total area is 210,000 ft^2 (19,509 m^2). Table G.1.5.2(c) indicates a $(C_i)(O_i)$ of 8000 gpm (30,280 L/min); however, this is a one-story building, and, therefore, the value for $(C_i)(O_i)$ = 6000 gpm (22,710 L/min).

G.1.6.4 Example 4. A two-story, wood-frame building occupied as moderate hazard has an area of 60,000 ft^2(5574 m^2) and communicates through unprotected openings to a one-story, noncombustible building with an area of 45,000 ft^2 (4180.5 m^2). The effective area is 45,000 + 60,000 + 0.5 (60,000) = 135,000 ft^2 (12,541.5 m^2).

The $(C_i)(O_i)$ for the building is based on the predominant construction class of the building. In this case, more than 33⅓ percent of the total wall area is of combustible construction. Therefore, the predominant construction class is wood-frame construction.

Therefore, under hazard occupancy classification 5, the value for $(C_i)(O_i)$ for an effective area of 135,000 ft^2 (12,541.5 m^2) = 8000 gpm (30,280 L/min).

G.1.6.5 Example 5. The subject building, a two-story building of 175 ft × 100 ft (53.3 m × 30.5 m), is located 15 ft (4.6 m) east of an exposed building identical in construction and area. Both buildings have unprotected openings. The length–height value of the exposed building is 2 × 175 ft = 350. From Table G.1.5.3.1, the exposure factor (X_i) is 0.19 or 19 percent.

G.1.6.6 Example 6. The subject building, a one-story wood-frame building of 75 ft × 100 ft (22.9 m × 30.5 m), communicates on the long side through an enclosed frame passageway 25 ft (7.6 m) in length, to an ordinary-construction building. Both buildings have unprotected window openings. The length–height value is 1 × 100 = 100. The exposure factor (X_i) for this side from Table G.1.5.3.1 is 0.15. The communication factor (P_i) for this side from Table G.1.5.3.2 is 0.30. The exposure and communication factor for this side $(X_i) + (P_i)$ for the sum of 0.15 and 0.30 = 0.45.

G.2 Fire Hydrants.

G.2.1 Hydrant Distribution. The fire flow requirement for the building and occupancy to be protected is calculated using the procedure outlined in G.1.6. Hydrants should be placed so that the total allowance for hydrants within 1000 ft (304.8 m) of the building is at least equal to the fire flow calculated. Up to 1000 gpm (3785 L/min) should be allowed from each hydrant within 300 ft (91.4 m) of the building, up to 670 gpm (2536 L/min) from each hydrant within 301 ft (91.7 m) to 600 ft (182.9 m) of the building, and up to 250 gpm (945 L/min) from hydrants within 601 ft to 1000 ft (183.2 m to 304.8 m) of the building.

G.2.2 Hydrant Design. All fire hydrants should be three-way hydrants having two hose outlets and a pumper outlet. When a hydrant has two or more hose outlets with no pumper outlet, the maximum allowance is to be 75 percent of that allowed for a hydrant within 300 ft (91.4 m) of the building. Therefore, for hydrants with two or more hose outlets and with no pumper outlet, up to 750 gpm (2835 L/min) is to be allowed for each such hydrant within 300 ft (91.4 m) of the building; however, 670 gpm (2536 L/min) is to be allowed for such hydrants within 301 ft to 600 ft (91.7 m to 182.9 m) of the building and 250 gpm (945 L/min) from hydrants within 601 ft to 1000 ft (183.2 m to 304.8 m) of the building.

Annex H Calculating Minimum Water Supplies

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

H.1 Structures Without Exposure Hazards. The following are examples for calculating minimum water supply.

H.1.1 Residential. For a dwelling with the following characteristics: (1) 50 ft by 24 ft; (2) 2 stories of 8 ft each; (3) with a pitched roof, 8 ft from attic floor to ridgepole; and (4) wood frame construction, the following calculations can be done:

$$50 \times 24 = 1200 \text{ ft}^2$$

Height = 8 + 8 + 4 = 20 ft (For pitched roofs, use half the distance from attic floor to ridgepole.)

$$1200 \times 20 = 24{,}000 \text{ ft}^3$$

The occupancy hazard classification number is 7 *(see 5.2.5)* and the construction classification number is 1.0, for a frame dwelling *(see 6.2.6)*, resulting in the following calculations:

$$(24{,}000 / 7) \times 1.0 = 3429 \text{ gal}$$

Minimum water supply equals 3429 gal.

For SI units: 1 ft = 0.305 m; 1 ft^2 = 0.092 m^2; 1 ft^3 = 0.028 m^3; 1 gal = 3.785 L.

If a structure is of occupancy hazard classification 3 or 4, it is considered an exposure hazard if within 50 ft, regardless of size. *(See Section 5.2.)* For a dwelling, the construction classification number is no larger than 1.0.

H.1.2 Commercial. For a farm equipment shed with the following characteristics: (1) 125 ft by 100 ft; (2) height of 14 ft; (3) 1 story; (4) flat roof; and (5) noncombustible construction, the following calculations can be done:

$$125 \times 100 = 12{,}500 \text{ ft}^2$$

$$\text{Height} = 14 \text{ ft}$$

$$12{,}500 \times 14 = 175{,}000 \text{ ft}^3$$

The occupancy hazard classification number is 5 *(see 5.2.3)* and the construction classification number is 0.75 *(see 6.2.3)*, resulting in the following calculations:

$$(175{,}000 / 5) \times 0.75 = 26{,}250 \text{ gal}$$

Minimum water supply equals 26,250 gal.

For SI units: 1 ft = 0.305 m; 1 ft^2 = 0.092 m^2; 1 ft^3 = 0.028 m^3; 1 gal = 3.785 L.

If a structure is of occupancy hazard classification 3 or 4, it is considered an exposure hazard if within 50 ft, regardless of size.

H.1.3 Multiple Structure Calculations. For a church with the following characteristics: 130 ft by 60 ft; height of 25 ft to ridgepole (15 ft from ground to eaves, with pitched ridgepole 10 ft above the eaves); brick construction with fire resistive constructed office building within 40 ft of church, the following calculations can be done:

$$130 \times 60 = 7800 \text{ ft}^2$$

Height = 15 + 10 = 20 ft^2 (For pitched roofs, use half the distance from attic floor to ridgepole.)

$$7800 \times 20 = 156{,}000 \text{ ft}^3$$

The occupancy hazard classification number is 6 *(see 5.2.4)* and the construction classification number is 1.0 *(see 6.2.6)*, resulting in the following calculation:

$$(156{,}000/6) \times 1.0 = 26{,}000 \text{ gal}$$

The church has an exposure of a brick office building, so multiply by the exposure factor of 1.5 as follows:

$$26{,}000 \times 1.5 = 39{,}000 \text{ gal}$$

Minimum water supply equals 39,000 gal.

For the fire-resistive office building with the following characteristics: (1) 175 ft × 100 ft; (2) 2 stories, each floor 10 ft; and (3) with a flat roof, the following calculations can be done:

$$175 \times 100 = 17{,}500 \text{ ft}^2$$

$$\text{Height} = 10 + 10 = 20 \text{ ft}$$

$$17{,}500 \times 20 = 350{,}000 \text{ ft}^3$$

The occupancy hazard classification number is 7 *(see 5.2.5)* and the construction classification number is 0.5 *(see 6.2.2)*, resulting in the following calculations:

$$(350{,}000 / 7) \times 0.5 = 25{,}000 \text{ gal}$$

Minimum water supply equals 25,000 gal.

Because this is a multiple structure location served from a single water point with the supply computed from the structure having the larger water supply requirement, the church will control the water supply requirement.

The water supply for the church is 39,000 gal and the water supply for the office is 25,000 gal; therefore, the church has the larger water supply requirement.

Minimum water supply equals 39,000 gal for these multiple structures.

For SI units: 1 ft = 0.305 m; 1 ft^2 =0.092 m^2; 1 ft^3 = 0.028 m^3; 1 gal = 3.785 L.

H.1.4 Precalculated Water Supply. Table H.1.4(a) and Table H.1.4(b) provide a quick method for determining the water requirements of this standard for structures without exposures.

To use the tables, first determine the total volume in cubic feet of the structure. Then, locate the closest corresponding volume in the left-hand column and read across (to the right) to find the total gallons of water required for the occupancy hazard classification and the construction classification of the structure.

For example, a farm storage building housing a barn (occupancy hazard classification 4) of ordinary construction (construction classification 1.0) with a cubic area of 160,000 ft^3 (4480 m^3) will produce, using Table H.1.4(a), a water requirement of 40,000 gal (151,400 L).

Table H.1.4(a) Precalculated Minimum Water Supplies by Occupancy Hazard (3 and 4) and Construction Classification (no exposures)

Occupancy Hazard Classification	3				4			
Construction Classification	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5
Volume (ft^3)	Gallons				Gallons			
8,000		2,000	2,667	4,000			2,000	3,000
1,000	2,000	3,000	4,000	6,000		2,250	3,000	4,500
16,000	2,667	4,000	5,333	8,000	2,000	3,000	4,000	6,000
20,000	3,333	5,000	6,667	10,000	2,500	3,750	5,000	7,500
24,000	4,000	6,000	8,000	12,000	3,000	4,500	6,000	9,000
28,000	4,667	7,000	9,333	14,000	3,500	5,250	7,000	10,500
32,000	5,333	8,000	10,667	16,000	4,000	6,000	8,000	12,000
36,000	6,000	9,000	12,000	18,000	4,500	6,750	9,000	13,500
40,000	6,667	10,000	13,333	20,000	5,000	7,500	10,000	15,000
44,000	7,333	11,000	14,667	22,000	5,500	8,250	11,000	16,500
48,000	8,000	12,000	16,000	24,000	6,000	9,000	12,000	18,000
52,000	8,667	13,000	17,333	26,000	6,500	9,750	13,000	19,500
56,000	9,333	14,000	18,667	28,000	7,000	10,500	14,000	21,000
60,000	10,000	15,000	20,000	30,000	7,500	11,250	15,000	22,500
64,000	10,667	16,000	21,333	32,000	8,000	12,000	16,000	24,000
68,000	11,333	17,000	22,667	34,000	8,500	12,750	17,000	25,500
72,000	12,000	18,000	24,000	36,000	9,000	13,500	18,000	27,000
76,000	12,667	19,000	25,333	38,000	9,500	14,250	19,000	28,500
80,000	13,333	20,000	26,667	40,000	10,000	15,000	20,000	30,000
84,000	14,000	21,000	28,000	42,000	10,500	15,750	21,000	31,500

(continues)

Table H.1.4(a) *Continued*

Occupancy Hazard Classification	3				4			
Construction Classification	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5
Volume (ft^3)	Gallons				Gallons			
88,000	14,667	22,000	29,333	44,000	11,000	16,500	22,000	33,000
92,000	15,333	23,000	30,667	46,000	11,500	17,250	23,000	34,500
96,000	16,000	24,000	32,000	48,000	12,000	18,000	24,000	36,000
100,000	16,667	25,000	33,333	50,000	12,500	18,750	25,000	37,500
104,000	17,333	26,000	34,667	52,000	13,000	19,500	26,000	39,000
108,000	18,000	27,000	36,000	54,000	13,500	20,250	27,000	40,500
112,000	18,667	28,000	37,333	56,000	14,000	21,000	28,000	42,000
116,000	19,333	29,000	38,667	58,000	14,500	21,750	29,000	43,500
120,000	20,000	30,000	40,000	60,000	15,000	22,500	30,000	45,000
124,000	20,667	31,000	41,333	62,000	15,500	23,250	31,000	46,500
128,000	21,333	32,000	42,667	64,000	16,000	24,000	32,000	48,000
132,000	22,000	33,000	44,000	66,000	16,500	24,750	33,000	49,500
136,000	22,667	34,000	45,333	68,000	17,000	25,500	34,000	51,000
140,000	23,333	35,000	46,667	70,000	17,500	26,250	35,000	52,500
144,000	24,000	36,000	48,000	72,000	18,000	27,000	36,000	54,000
148,000	24,667	37,000	49,333	74,000	18,500	27,750	37,000	55,500
152,000	25,333	38,000	50,667	76,000	19,000	28,500	38,000	57,000
156,000	26,000	39,000	52,000	78,000	19,500	29,250	39,000	58,500
160,000	26,667	40,000	53,333	80,000	20,000	30,000	40,000	60,000
175,000	29,167	43,750	58,333	87,500	21,875	32,813	43,750	65,625
200,000	33,333	50,000	66,667	100,000	25,000	37,500	50,000	75,000
225,000	37,500	56,250	75,000	112,500	28,125	42,188	56,250	84,375
250,000	41,667	62,500	83,333	125,000	31,250	46,875	62,500	93,750
275,000	45,833	68,750	91,667	137,500	34,375	51,563	68,750	103,125
300,000	50,000	75,000	100,000	150,000	37,500	56,250	75,000	112,500
325,000	54,167	81,250	108,333	162,500	40,625	60,938	81,250	121,875
350,000	58,333	87,500	116,667	175,000	43,750	65,625	87,500	131,250
375,000	62,500	93,750	125,000	187,500	46,875	70,313	93,750	140,625
400,000	66,667	100,000	133,333	200,000	50,000	75,000	100,000	150,000
425,000	70,833	106,250	141,667	212,500	53,125	79,688	106,250	159,375
450,000	75,000	112,500	150,000	225,000	56,250	84,376	112,500	168,750
475,000	79,167	118,750	158,333	237,500	59,375	89,063	118,750	178,125
500,000	83,333	125,000	166,667	250,000	62,500	93,751	125,000	187,500
525,000	87,500	131,250	175,000	262,500	65,625	98,438	131,250	196,875
550,000	91,667	137,500	183,333	275,000	68,750	103,126	137,500	206,250
575,000	95,833	143,750	191,667	287,500	71,875	107,813	143,750	215,625
600,000	100,000	150,000	200,000	300,000	75,000	112,501	150,000	225,000
625,000	104,167	156,250	208,333	312,500	78,125	117,188	156,250	234,375
650,000	108,333	162,500	216,667	325,000	81,250	121,876	162,500	243,750
675,000	112,500	168,750	225,000	337,500	84,375	126,563	168,750	253,125
700,000	116,667	175,000	233,333	350,000	87,500	131,251	175,000	262,500
725,000	120,833	181,250	241,667	362,500	90,625	135,938	181,250	271,875
750,000	125,000	187,500	250,000	375,000	93,750	140,626	187,500	281,250
775,000	129,167	193,750	258,333	387,500	96,875	145,313	193,750	290,625
800,000	133,333	200,000	266,667	400,000	100,000	150,001	200,000	300,000
825,000	137,500	206,250	275,000	412,500	103,125	154,688	206,250	309,375
850,000	141,667	212,500	283,333	425,000	106,250	159,376	212,500	318,750
875,000	145,833	218,750	291,667	437,500	109,375	164,064	218,750	328,125
900,000	150,000	225,000	300,000	450,000	112,500	168,751	225,000	337,500
925,000	154,167	231,250	308,333	462,500	115,265	173,439	231,250	346,875
950,000	158,333	237,500	316,667	475,000	118,750	178,126	237,500	356,250
975,000	162,500	243,750	325,000	487,500	121,875	182,814	243,750	365,625
1,000,000	166,667	250,000	333,333	500,000	125,000	187,501	250,000	375,000

Note: For structures with exposures, multiply the water requirements in the table by 1.5.

Table H.1.4(b) Precalculated Minimum Water Supplies by Occupancy Hazard (5, 6, and 7) and Construction Classification (no exposures)

Occupancy Hazard Classification	5				6				7			
Construction Classification	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5
Volume (ft^3)	Gallons				Gallons				Gallons			
8,000				2,400				2,000				
1,000			2,400	3,600			2,000	3,000				2,571
16,000		2,400	3,200	4,800		2,000	2,667	4,000			2,286	3,429
20,000	2,000	3,000	4,000	6,000		2,500	3,333	5,000		2,143	2,857	4,286
24,000	2,400	3,600	4,800	7,200	2,000	3,000	4,000	6,000		2,571	3,429	5,143
28,000	2,800	4,200	5,600	8,400	2,333	3,500	4,667	7,000	2,000	3,000	4,000	6,000
32,000	3,200	4,800	6,400	9,600	2,667	4,000	5,333	8,000	2,286	3,429	4,571	6,857
36,000	3,600	5,400	7,200	10,800	3,000	4,500	6,000	9,000	2,572	3,857	5,143	7,714
40,000	4,000	6,000	8,000	12,000	3,333	5,000	6,667	10,000	2,857	4,286	5,714	8,571
44,000	4,400	6,600	8,800	13,200	3,667	5,500	7,333	11,000	3,143	4,714	6,286	9,429
48,000	4,800	7,200	9,600	14,400	4,000	6,000	8,000	12,000	3,429	5,143	6,857	10,286
52,000	5,200	7,800	10,400	15,600	4,333	6,500	8,667	13,000	3,715	5,571	7,429	11,143
56,000	5,600	8,400	11,200	16,800	4,667	7,000	9,333	14,000	4,000	6,000	8,000	12,000
60,000	6,000	9,000	12,000	18,000	5,000	7,500	10,000	15,000	4,286	6,429	8,571	12,857
64,000	6,400	9,600	12,800	19,200	5,333	8,000	10,667	16,000	4,572	6,857	9,143	13,714
68,000	6,800	10,200	13,600	20,400	5,667	8,500	11,333	17,000	4,857	7,286	9,714	14,571
72,000	7,200	10,800	14,400	21,600	6,000	9,000	12,000	18,000	5,143	7,714	10,286	15,429
76,000	7,600	11,400	15,200	22,800	6,333	9,500	12,667	19,000	5,429	8,143	10,857	16,286
80,000	8,000	12,000	16,000	24,000	6,667	10,000	13,333	20,000	5,715	8,571	11,429	17,143
84,000	8,400	12,600	16,800	25,200	7,000	10,500	14,000	21,000	6,000	9,000	12,000	18,000
88,000	8,800	13,200	17,600	26,400	7,333	11,000	14,667	22,000	6,286	9,429	12,571	18,857
92,000	9,200	13,800	18,400	27,600	7,667	11,500	15,333	23,000	6,572	9,857	13,143	19,714
96,000	9,600	14,400	19,200	28,800	8,000	12,000	16,000	24,000	6,857	10,286	13,714	20,571
100,000	10,000	15,000	20,000	30,000	8,333	12,500	16,667	25,000	7,143	10,714	14,286	21,429
104,000	10,400	15,600	20,800	31,200	8,667	13,000	17,333	26,000	7,429	11,143	14,857	22,286
108,000	10,800	16,200	21,600	32,400	9,000	13,500	18,000	27,000	7,715	11,571	15,429	23,143
112,000	11,200	16,800	22,400	33,600	9,333	14,000	18,667	28,000	8,000	12,000	16,000	24,000
116,000	11,600	17,400	23,200	34,800	9,667	14,500	19,333	29,000	8,286	12,429	16,571	24,857
120,000	12,000	18,000	24,000	36,000	10,000	15,000	20,000	30,000	8,572	12,857	17,143	25,714
124,000	12,400	18,600	24,800	37,200	10,333	15,500	20,667	31,000	8,857	13,286	17,714	26,571
128,000	12,800	19,200	25,600	38,400	10,667	16,000	21,333	32,000	9,143	13,714	18,286	27,429
132,000	13,200	19,800	26,400	39,600	11,000	16,500	22,000	33,000	9,429	14,143	18,857	28,286
136,000	13,600	20,400	27,200	40,800	11,333	17,000	22,667	34,000	9,715	14,571	19,429	29,143
140,000	14,000	21,000	28,000	42,000	11,667	17,500	23,333	35,000	10,000	15,000	20,000	30,000
144,000	14,400	21,600	28,800	43,200	12,000	18,000	24,000	36,000	10,286	15,429	20,571	30,857
148,000	14,800	22,200	29,600	44,400	12,333	18,500	24,667	37,000	10,572	15,857	21,143	31,714
152,000	15,200	22,800	30,400	45,600	12,667	19,000	25,333	38,000	10,857	16,286	21,714	32,571
156,000	15,600	23,400	31,200	46,800	13,000	19,500	26,000	39,000	11,143	16,714	22,286	33,429
160,000	16,000	24,000	32,000	48,000	13,333	20,000	26,667	40,000	11,429	17,143	22,857	34,286
175,000	17,500	26,250	35,000	52,500	14,583	21,875	29,167	43,750	12,500	18,750	25,000	37,500
200,000	20,000	30,000	40,000	60,000	16,667	25,000	33,333	50,000	14,286	21,429	28,571	42,857
225,000	22,500	33,750	45,000	67,500	18,750	28,125	37,500	56,250	16,071	24,107	32,143	48,214
250,000	25,000	37,500	50,000	75,000	20,833	31,250	41,667	62,500	17,857	26,786	35,714	53,571
275,000	27,500	41,250	55,000	82,500	22,917	34,375	45,833	68,750	19,643	29,464	39,286	58,929
300,000	30,000	45,000	60,000	90,000	25,000	37,500	50,000	75,000	21,429	32,143	42,857	64,286
325,000	32,500	48,750	65,000	97,500	27,083	40,625	54,167	81,250	23,214	34,821	46,429	69,643
350,000	35,000	52,500	70,000	105,000	29,167	43,750	58,333	87,500	25,000	37,500	50,000	75,000
375,000	37,500	56,250	75,000	112,500	31,250	46,875	62,500	93,750	26,786	40,179	53,571	80,357
400,000	40,000	60,000	80,000	120,000	33,333	50,000	66,667	100,000	28,571	42,857	57,143	85,714
425,000	42,500	63,750	85,000	127,500	35,417	53,125	70,833	106,250	30,357	45,536	60,714	91,071

(continues)

Table H.1.4(b) *Continued*

Occupancy Hazard Classification	5				6				7			
Construction Classification	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5	0.5	0.75	1.0	1.5
Volume (ft^3)	Gallons				Gallons				Gallons			
450,000	45,000	67,500	90,000	135,000	37,500	56,250	75,000	112,500	32,143	48,214	64,286	96,429
475,000	47,500	71,250	95,000	142,500	39,583	59,375	79,167	118,750	33,929	50,893	67,857	101,786
500,000	50,000	75,000	100,000	150,000	41,667	62,500	83,333	125,000	35,714	53,571	71,429	107,143
525,000	52,500	78,750	105,000	157,500	43,750	65,625	87,500	131,250	37,500	56,250	75,000	112,500
550,000	55,000	82,500	110,000	165,000	45,833	68,750	91,667	137,500	39,286	58,929	78,571	117,857
575,000	57,500	86,250	115,000	172,500	47,917	71,875	95,833	143,750	41,071	61,607	82,143	123,214
600,000	60,000	90,000	120,000	180,000	50,000	75,000	100,000	150,000	42,857	64,286	85,714	128,571
625,000	62,500	93,750	125,000	187,500	52,083	78,125	104,167	156,250	44,643	66,964	89,286	133,929
650,000	65,000	97,500	130,000	195,000	54,167	81,250	108,333	162,500	46,429	69,643	92,857	139,286
675,000	67,500	101,250	135,000	202,500	56,250	84,375	112,500	168,750	48,214	72,321	96,429	144,643
700,000	70,000	105,000	140,000	210,000	58,333	87,500	116,667	175,000	50,000	75,000	100,000	150,000
725,000	72,500	108,750	145,000	217,500	60,417	90,625	120,833	181,250	51,786	77,679	103,571	155,357
750,000	75,000	112,500	150,000	225,000	62,500	93,750	125,000	187,500	53,571	80,357	107,143	160,714
775,000	77,500	116,250	155,000	232,500	64,583	96,875	129,167	193,750	55,357	83,036	110,714	166,071
800,000	80,000	120,000	160,000	240,000	66,667	100,000	133,333	200,000	57,143	85,714	114,286	171,429
825,000	82,500	123,750	165,000	247,500	68,750	103,125	137,500	206,250	58,929	88,393	117,857	176,786
850,000	85,000	127,500	170,000	255,000	70,833	106,250	141,667	212,500	60,714	91,071	121,429	182,143
875,000	87,500	131,250	175,000	262,500	72,917	109,375	145,833	218,750	62,500	93,750	125,000	187,500
900,000	90,000	135,000	180,000	270,000	75,000	112,500	150,000	225,000	64,286	96,429	128,571	192,857
925,000	92,500	138,750	185,000	277,500	77,083	115,625	154,167	231,250	66,071	99,107	132,143	198,214
950,000	95,000	142,500	190,000	285,000	79,167	118,750	158,333	237,500	67,857	101,786	135,714	203,571
975,000	97,500	146,250	195,000	292,500	81,250	121,875	162,500	243,750	69,643	104,464	139,286	208,929
1,000,000	100,000	150,000	200,000	300,000	83,333	125,000	166,667	250,000	71,429	107,143	142,857	214,286

Note: For structures with exposures, multiply the water requirements in the table by 1.5.

H.2 Structures with Exposure Hazards. The following are examples for calculating minimum water supply.

H.2.1 Residential. For a dwelling with the following characteristics: (1) 50 ft by 24 ft; (2) 1 story, 8 ft high; (3) with pitched roof, 8 ft from attic floor to ridgepole; and (4) brick construction, exposed on one side by a frame dwelling with a separation of less than 50 ft and with areas greater than 100 ft^2, the following calculations can be done:

$$50 \times 24 = 1200 \text{ ft}^2$$

Height = 8 + 4 = 12 ft (For pitched roofs, use half the distance from attic floor to ridgepole.)

$$1200 \times 12 = 14{,}000 \text{ ft}^2$$

The occupancy hazard classification number is 7 *(see 5.2.5)* and the construction classification number is 1.0, for a brick dwelling *(see 6.2.6)*, resulting in the following calculation:

$$(14{,}000/7) \times 1.0 = 2057$$

Because the dwelling exposure is a frame dwelling, then multiply by the exposure factor of 1.5 *(see 7.3.1)* as follows:

$$2057 \times 1.5 = 3086 \text{ gal}$$

Minimum water supply equals 3086 gal.

For SI units: 1 ft = 0.305 m; 1 ft^2 = 0.092 m^2; 1 ft^3 = 0.028 m^3; 1 gal = 3.785 L.

If a structure is of occupancy hazard classification 3 or 4, it is considered an exposure hazard if within 50 ft, regardless of size. For a dwelling, the construction classification number is no larger than 1.0.

H.2.2 Multiple Structure Calculations. The following can be used as an example of a multiple structure for the purpose of calculation: a row of five dwellings, identical to the residential occupancy in Section H.1, except one has a brick barn measuring 80 ft by 40 ft located 35 ft from the dwelling. The barn is larger than 100 ft^2 in area and is closer than 50 ft to the dwelling. Therefore, the minimum water supply for this dwelling, 3429 gal, should be multiplied by 1.5 for the exposure.

$$3429 \times 1.5 = 5144 \text{ gal}$$

If the dwellings and barn are to be protected by the same water supply, as is likely, the water supply should be calculated based on the structure that requires the largest minimum water supply, which is the barn in this case. Thus, if the barn has no hay storage and is 25 ft in height to the pitched ridgepole, and the ridgepole is 10 ft above the eaves, the calculations would be as follows:

$$80 \times 40 = 3200 \text{ ft}^2$$

Alston Hunt Floyd & Ing

August 6, 2002

Ernest Y. W. Lau
Manager & Chief Engineer
Kauai County Board of Water Supply
P.O. Box 1706
Lihue, Kauai, Hawaii 96766

Re: Kula International School, Kilauea, Kauai
Water Service for Fire Protection

Dear Mr. Lau:

We are writing once again with regard to the long delayed decision by the Kauai Board of Water Supply ("BWS") whether the proposed Kula School library project has sufficient water flow for fire protection under the Department of Water Supply's rules.

As you know, the school is in a rural area along Kuhio Highway southeast of Kilauea, Kauai. The property is the State Land Use Commission Agricultural District and County CZO Open District and Agriculture District. The proposed library will be a single story, two room building (approximately 2,300 sq. ft.). Each room will have a separate exit that opens directly to the lawn outside. There are no interior hallways. The building will be separate from all other buildings. In case of a fire, students and teachers will simply walk out of the room by either exit to the lawn. That can be accomplished in a few seconds. Student and teacher safety is not an issue. The fire protection issues have nothing to do with the ability of students or teachers to exit the building. This is not a multi-storied building with internal hallways in an urban environment.

The only purpose of the fire protection measures are to prevent damage to the building itself. This is essentially an insurance issue. The library will be equipped with fire extinguishers. A 100,000 gallon water tank supplies water to the premises through an 8 inch pipe and is elevated above the school to provide the appropriate water pressure.

We have repeatedly requested that you confirm to the Planning Department and Planning Commission that the water flow is adequate under the Department's rules to meet the fire flow requirements. We supplied you with all the information you need to respond. We have explained in detail how the proposed library meets the Department's rules.

Attorneys at Law
A Law Corporation

18th Floor Pacific Tower
1001 Bishop Street
Honolulu Hawai'i 96813
Tel: (808) 524-1800
Fax: (808) 524-4591

65-1235A Opelo Road
Suite 5
Kamuela Hawai'i 96743
Tel: (808) 885-6762
Fax: (808) 885-8065

E-mail: info@ahfi.com
www.ahfi.com

You have failed to answer this simple question. We have waited for more than five (5) months. We are still waiting for your answer. Without your answer Kula School is unable to obtain a building permit and construct the library. The funding sources may soon withdraw their support if construction does not begin soon. The school would then be left without a library because you refuse to answer a simple question. It is really inexcusable.

You may answer the question by writing a one sentence letter to the Planning Department and the Planning Commission that provides simply that "[t]he proposed Kula International School library has adequate water flow to meet the fire protection requirements under the Department of Water Supply rules."

If you believe otherwise, please explain the reasons in writing promptly. We have had no answer, let alone a satisfactory answer or even a reasoned one.

To refresh your recollection, on March 20, 2002, the Board of Water Supply ("BWS") met and considered the question of fire protection water flow standards for the proposed Kula School library in Kilauea, Kauai. The Board discussed the issue and then delegated resolution of the question to the Corporation Counsel Hartwell Blake and to you as the Manager and Chief Engineer.

On April 29, 2002, after hearing no response from you for more than a month, we wrote the Corporation Counsel Hartwell Blake requesting that the matter be resolved quickly.

On May 28, 2002, we again wrote Hartwell Blake explaining in detail why the Kula School meets the fire flow protection standards in the Kauai Department of Water Supply Rules (Part III, Section VII, paragraph 3).[1] We again requested an early resolution of this issue and reconfirmed Mr. Blake's promise to discuss the matter with you.

---

[1] "3. Fire Protection. In fixing the standards for fire protection insofar as water supply is concerned, the Department will be guided by the standards of the National Board of Fire Underwriters in "Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions" and by any specific recommendations made by the said National Board with respect to the County."

On June 13, 2002, we wrote Mr. Blake confirming his promise in phone conversations on April 29 and 30 and May 22, 2002, to discuss the fire protection requirements for the Kula International School Library with you.

On June 17, 2002, we wrote Mr. Blake confirming a June 14, 2002, phone conversation in which he said the Kauai Department of Water Supply and the Fire Department had met during the week of June 3-7, 2002 to discuss the fire flow for the Kula International School. He stated that the officials had not reached a resolution, but planned to meet again during the week of June 24, 2002.

We explained to Mr. Blake why the 2000 gallon / hour rule (which you had earlier claimed was required) was never adopted as a rule and could not have been adopted. It is not and can not be a valid rule and may not be the basis for your decision. The corporation counsel has a duty to explain the requirements of Hawaii Revised Statute chapter 91 to you. Apparently he did not. The relevant sections of that letter states:

> To reiterate our May 28 , 2002 letter, where the department has not followed the Hawai'i Administrative Procedures Act in adopting proposed rules, the "proposed rules" **are not valid and may not be enforced.** The Hawai'i Supreme Court is clear on this issue.
>
> In *Burk v. Sunn*, 68 Haw. 80, 705 P.2d 17, *recon. den.*, 68 Haw. 687 (1985), the Court held that administrative rules not promulgated in accordance with the Hawaii Administrative Procedures Act (HAPA) are invalid and unenforceable. In *Ainoa v. Unemployment Comp. Appeals Div.*, 62 Haw. 286, 614 P.2d 380 (1980), the Court found that there was no dispute that HAPA is binding upon the Department and no excuse for failing to follow the requirements of HAPA.
>
> In *Hawai'i Prince Hotel Waikīkī Corp. v. City of Honolulu*, 89 Haw. 381, 974 P.2d 21 (1999), the City and County of Honolulu's unwritten methodology for calculating golf course tax assessment fell within definition of a rule and should have been promulgated pursuant to administrative rule-making procedures. The tax assessment was vacated.
>
> The Kauai Department of Water did not adopt the 1985 "blue book" provisions in accordance with Haw. Rev. Stat. chapter 91. I personally inspected the valid Kauai Department of Water Supply Rules in the

> Lieutenant Governors' Office. The 1985 blue book provisions are not to be found anywhere. The are not valid. They are not enforceable "rules." No rhetoric can cure that deficiency. There is no legal basis for disagreement. . . .

On June 20, 2002, Mr. Blake finally sent me some of the background materials I had requested three months earlier in March, 2002. He did not respond to the substance of our May 28, 2002 letter which explained how the proposed library meets the Department's rules. Nor did Mr. Blake say if the Fire Department and Department of Water Suppiy had arranged to meet as promised after June 24, 2002. We have heard nothing further on this since early June. Construction of the library is now seriously threatened by the County's delays.

On July 10, 2002, we again wrote Mr. Blake explaining the potential personal liability of Board members (and yourself) in attempting to enforce an invalid rule once you are informed that the rule is invalid. A copy of that letter is enclosed in case you did not receive it. You are on notice of its contents.

Still, we have received no substantive response to our May 28, 2002 letter.

Your refusal to follow the law renders the Department and the County liable. If we bring suit, we will seek our costs and attorneys fees.

Very truly yours,

William M. Tam

William M. Tam
Attorney for Kula International School

cc Hartwell Blake, Esq., Corporation Counsel
Kauai County Mayor
Board of Water Supply members
Members, Kauai County Council
A Kula International dba Kula High & Intermediate

ATTACHMENT

§ 91-3. Procedure for adoption, amendment, or repeal of rules. Unless a different procedure is authorized by law, before the adoption, amendment or repeal thereof, the adopting agency shall:

(1) Give at least thirty days' notice for a public hearing. The notice shall include:

(A) A statement of the topic of the proposed rule adoption, amendment, or repeal or a general description of the subjects involved; and

(B) A statement that a copy of the proposed rule to be adopted, the proposed rule amendment, or the rule proposed to be repealed will be mailed to any interested person who requests a copy, pays the required fees for the copy and the postage, if any, together with a description of where and how the requests may be made;

(C) A statement of when, where. and during what times the proposed rule to be adopted, the proposed rule amendment, or the rule proposed to be repealed may be reviewed in person; and

(D) The date, time, and place where the public hearing will be held and where interested persons may be heard on the proposed rule adoption, amendment, or repeal.

The notice shall be mailed to all persons who have made a timely written request of the agency for advance notice of its rule-making proceedings, given at least once statewide for state agencies and in the county for county agencies. Proposed state agency rules shall also be posted on the internet as provided in section 91-2.6; and

(2) Afford all interested persons opportunity to submit data, views, or arguments, orally or in writing. The agency shall fully consider all written and oral submissions respecting the proposed rule. The agency may make its decision at the public hearing or announce then the date when it intends to make its decision. Upon adoption, amendment, or repeal of a rule, the agency, if requested to do so by an interested person, shall issue a concise statement of the principal reasons for and against its determination.

§ 91-4. Filing and taking effect of rules.

(a) Each agency adopting, amending, or repealing a rule, upon approval thereof by the governor or the mayor of the county, shall file forthwith certified copies thereof with the lieutenant governor in the case of the State, or with the clerk of the county in the case of a county. In addition, the clerks of all of the counties shall file forthwith certified copies thereof with the lieutenant governor. A permanent register of the rules, open to public inspection, shall be kept by the lieutenant governor and the clerks of the counties.

ATTACHMENT
(Continued)

(b) Each rule hereafter adopted, amended, or repealed shall become effective ten days after filing with the lieutenant governor in the case of the State, or with the respective county clerks in the case of the counties.

(1) If a later effective date is required by statute or specified in the rule, the later date shall be the effective date; provided that no rule shall specify an effective date in excess of thirty days after the filing of the rule as provided herein.

(2) An emergency rule shall become effective upon filing with the lieutenant governor in the case of the State, or with the respective county clerks in the case of the counties, for a period of not longer than one hundred twenty days without renewal unless extended in compliance with the provisions of subdivisions (1) and (2) of section 91-3(a), if the agency finds that immediate adoption of the rule is necessary because of imminent peril to the public health, safety, or morals. The agency's finding and brief statement of the reasons therefor shall be incorporated in the rule as filed. The agency shall make an emergency rule known to persons who will be affected by it by publication at least once in a newspaper of general circulation in the State for state agencies and in the county for county agencies within five days from the date of filing of the rule.

Alston Hunt Floyd & Ing

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July 10, 2002

By Fax (808) 822-7329

Hartwell H. K. Blake, Esq.
Corporation Counsel
County of Kauai
4444 Rice Street, Suite 220
Lihue, Kauai, Hawai'i 96766

Re: Kula School Water Requirements For Fire Protection

Dear Mr. Blake:

Thank you for your June 20, 2002 letter and materials.

The materials you sent are interesting, but they do not change in any way the analysis in our letters to you or the position of Kula International School. They in fact reinforce precisely what we have been trying to explain to you.

As your materials confirm, on June 30, 1970, the Board of Water Supply adopted the Department of Water Rules and Regulations, Part 3, Section X which states that subdivision water systems shall be in accordance with the "Standard Specifications for Waterworks Construction" "dated 10/1/63, or as later amended." The certification states that the 1970 rules were subject to a public hearing on June 24, 1970. That is fine, but irrelevant to the situation today. The "Standards" dated 10/1//63 do not contain any 2000 gallon / minute flow rule. In fact, the 1963 "Standards" are completely silent on the gallon/ minute flow for fire protection.

The 1970 hearing was on the 1970 rule which proposed to adopt the 1963 standards. The 1970 hearings and rules did not adopt the Insurance Services Office 1973 Grading Schedule. The 1970 hearing and rules could not approve something three years in the future which no one had seen or even knew would exist.

Nor could the 1970 hearing and rules adopt a standard that had yet to be conceived, much less articulated or written until 16 years later (i.e. 1985 "Blue Book"). Any standards proposed after 1970 could not have been the subject of a hearing in 1970. That is beyond the Board's authority. The Board could not adopt a blank check that will be written sometime in the future. That is absurd.

291169-1/ 6710-1

That would violate the most basic premise of due process and would be irrational on its face. The Hawaii Supreme Court would throw out any such claim.

The phrase "or as later amended" in the 1970 rules can not be read to include standards that any subsequent Board, Manager, Chief Engineer, Mayor . . . or anyone writes down and calls a standard at any time in the future (let alone for all times in the future). That would be an ultra vires action directly contrary to established Hawaii Supreme Court case law. Rules may not incorporate by reference later amendments without going through the rule making process. That action would constitute an unlawful delegation of authority to some future person at some undefined future time and be invalid. *State v. Christie*, 70 Haw. 158, 766 P.2d 1198 (1988); *State v. Tengan*, 67 Haw. 451, 691 P.2d 365 (1984). *A fortiori*, the phrase "or as later amended" in Part 3, Section X is void on its face.

We pointed this out to you in our May 28, 2002 letter (see footnote 5), but you seemed not to have grasped its full import. It is not an open legal question. If the Board and its Manager persist in their belief that the 1985 "Blue Book" standards were legally adopted under Haw. Rev. Stat. chapter 91, you must inform them otherwise now. They are not free to ignore the law when they act. If they do so, they will lose their official or quasi-official immunity. When they act beyond their authority, they are no longer clothed as a government actor. They are only private individuals, stripped of public immunity.

You should immediately advise the members of the Board of Water Supply that their continuing effort to enforce a rule that on its face is ultra vires or beyond their authority could make them individually and personally liable. They would no longer be protected and they would no longer have the benefit of public legal counsel.

There has been a continuing pattern of delay and avoidance in addressing the simple question of fire flow protection for a single story two room elementary school library in a rural agricultural district. For more than six (6) months the Board of Water Supply and its Manager have refused to grasp the situation. The school is operating, yet the children are being denied the benefits of a school library. The private money that was committed to build this library is now in jeopardy.

This is happening because of your client's refusal to follow the law.

Very truly yours,

William M. Tam
Attorney for Kula International School

cc: Mayor, County of Kauai
Manager, Kauai Board of Water Supply

WMT:lc

DEPARTMENT OF WATER
County of Kauai

"Water has no Substitute -- Conserve It!"

Memorandum

DATE: July 14, 1998

TO: Dee Crowell, Planning Director (George)

FROM: Ernest Lau, Manager and Chief Engineer

CC: Water Resources & Planning

RE: Z-IV-98-47, U-98-38 AND SP-98-9, KAUAI CHRISTIAN ACADEMY, TMK: 5-2-04:102, KILAUEA, KAUAI -- REPORT TO PLANNING

Any actual development of this area will be dependent on the adequacy of the source, storage and transmission facilities existing at that time. At the present time, the source facilities are near capacity; the storage facilities are at capacity; and, the transmission facilities are not adequate for the proposed use.

Prior to building permit or water meter approval, the developer must:

1. Prepare and receive Department of Water's approval of construction drawings for necessary water system facilities, and construct said facilities. These facilities shall also include:
   a. An extension of a main 12 inches in diameter, approximately 4,400 feet in length, from Kuhio Highway to the development site. The new mainline extension will begin at the existing 12-inch mainline along Kuhio Highway, then run across Kuhio Highway, then along Pukalani Place and Kolo Road, and finally along Kilauea Lighthouse Road to the proposed development site.
   b. The domestic service connections.
   c. The fire service connections.
   d. The interior plumbing plans with the appropriate backflow preventer, if applicable
2. Pay the applicable fees at the time of receipt. At the present time, this includes the Facilities Reserve Charge. This charge will be determined by the approved construction drawings or approved water meter size.
3. Submit a request for water meter size and water demand calculations for review and approval by the Department of Water.
4. The developer is made aware that water service for this parcel will be limited to five(5) 5/8-inch water meters, or the equivalent of five(5) 5/8-inch water meters until adequate storage for the area is provided.

The applicant is also made aware that prior to building permit approvals, the above conditions must be met and a "Certification of Completion" issued by the Department of Water for any necessary water system facilities construction required.

... 4398 Pua Loke Street, Lihue, Kauai, Hawaii or P. O. Box 1706, Lihue, HI 96766-5706 ...

Re: Proposed "Kauai Christian Academy School", TMK: 5-2-04:102, Kilauea Lighthouse Road, Kilauea, Kauai

Manager Lau reported that this project involved the development of a K-12 private school facility in conjunction with a pre-school/day care center. The proposed school site was planned to be developed over a 10-year period in phases. Also, involved was the request for a sixth 5/8-inch water meter for this lot to service the proposed school site.

In order to provide adequate domestic and fire flow demands of the proposed school, the developer was required to provide an extension of main 12-inches in diameter, approximately 4,400 feet. This new mainline extension will begin at the existing 12-inch mainline along Kuhio Highway, then run across Kuhio Highway, and along Pukalani Place and Kolo Road, then finally along Kilauea Lighthouse Road to the proposed development site.

The existing storage facilities for the area are at capacity, however, the Department's present policy was to allow a maximum of five(5) 5/8-inch water meters per lot of record until adequate storage facilities can be provided for the area.

Mr. Larry Dill testified as a board member on behalf of the Kauai Christian Academy and requested that the Department waive the requirement for the construction of 4,400 feet of 12-inch water main, which was beyond the school's financial capability for the proposed Phase I (maximum students totalling 100). He also requested that the sixth 5/8-inch water meter be allowed.

Manager Lau recommended that the Department's original conditions for the proposed development be adhered to provide adequate fire protection for the health and safety of those involved and to ensure consistency in our present policy to allow a maximum of five(5) 5/8-inch water meter per lot of record for this area.

Also submitted was the following written testimony from Jim O'Connor who could not be present at the August 20, 1998 Board meeting:

"On the agenda for your meeting of August 20, 1998, the Kauai Christian Academy is seeking Board approval for its request to defer installation of a twelve inch water main extension and obtain permission for a 5/8" water meter for its new school site.

Most of the Board members will recall that this school location was part of larger, now defunct, comprehensive Ag Park Plan approved by the Board of Water Supply in August of 1996. More specifically, the Kauai Christian Academy was also approved by the Board for its Special Permit, Use Permit, and Class IV Zoning permit application for this specific site within the overall plan. At that time,t he Board concluded that, based on recommendations from the Fire Department, the installation of the 12" water line extension could be deferred until school enrollment exceed 100 students. The conditions today, relating to enrollment, phasing and buildings, are identical to the situation at the time of the previous approval.

The requested water meter is a deviation from the previous approval. The Ag Park plan allowed an additional twelve meters (one which would service this school site), which will now not be placed in service. It should be noted, however, that the overall plan included an irrigation system, the installation of which would have allowed a major DOW user to come off the system, thereby, at least partially offsetting the expected demand of the additional meters. The situation today necessitates consideration only of the impact of a single meter, the demand of which should not overly burden the present Kilauea water system. Understanding that the Board may be further obliged to consider the precedent consequences of this approval, may I suggest that the likely incident of replication of this situation is statistically small and therefore inconsequential.

The Kauai Christian Academy was granted approval of its application by the County Planning Commission on August 13, 1998 and requires only approval by this Board to begin the school year in its new home. Your favorable consideration would be most appreciated."

Upon query by Ms. Penhallow, Mr. Dill replied that there are presently 25 students at Kauai Christian Academy.

Ms. Penhallow moved to approve a sixth meter provided that Kauai Christian Academy provide an indemnification agreement to hold harmless the County of Kauai, Department of Water, seconded by Mr. Portugal.

Mr. Portugal stated that Kauai Christian Academy's request was a special case and will not set a precedent.

Mr. Portugal asked Manager Lau about the five meter policy? Manager Lau stated that this policy had been in place for one year.

Motion was carried.

Ms. Penhallow moved to approve the deferment of the water requirement of approximately 4,400 feet of 12-inch waterline extension with the provision that the Kauai Christian Academy provide an indemnification agreement to hold harmless the County of Kauai, Department of Water, and the Kauai Christian Academy to ensure that the enrollment does not exceed 100 students and to inform the Department annually on the total enrollment of the school, seconded by Mr. Portugal.

The language of the indemnification agreement will be worked on by the Manager and County Attorney's Office.

Motion was carried. Recess: 1:03 p.m. to 1:48 p.m.

OLD BUSINESS

Re: Job No. 94-2, Reconstruction of Operations Building and Garage, Lihue, Kauai

Manager Lau reported that five bids were received and opened for the subject project on August 11, 1998. The bid amounts were as follows:

Special Permit SP-98-9

APPLICANT: Kauai Christian Academy

The applicant is proposing the development of a private school along Lighthouse Road, within the Agriculture Zoning District, and Agricultural State Land Use District.

ADDITIONAL FINDINGS

The previously presented Staff Report for the proposed project discussed Department of Water requirements generated in connection with a 1996 proposal to establish the school. The Department of Water has now submitted the attached current requirements for the proposed development. (Comments also were recently received from the State Office of Planning.) The Water Department states that at the present time, source facilities are near capacity, storage facilities are at capacity, and transmission facilities are not adequate for the proposed use.

Prior to building permit or water meter approval, the applicant will be required to receive Water Department approval of water system improvement plans, and construct water system facilities, including extension of a water main from Kuhio Highway, domestic and fire service connections, and interior plumbing. The applicant will be required to pay applicable fees including a Facilities Reserve Charge, submit a request for a water meter size with demand calculations, and be aware that water service for the subject parcel will be limited to five meters until adequate storage is provided. A Certification of Completion must be obtained from the Water Department prior to building permit approval.

The applicant has indicated that alternative methods of complying with these requirements are currently being discussed with Department of Water staff. The applicant will be presenting alternatives to the Water Board at their next meeting on August 20, 1998.

George Kalisik

George Kalisik, Planner

C.3.

system facilities ...

Correspondence

Ignacio-Neumiller, Edith

From: lindnerji [redacted]
Sent: Friday, January 22, 2021 1:22 PM
To: Board
Subject: Fwd: letter
Attachments: IMG_0504.JPG; IMG_0502.JPG; IMG_0503.JPG; Kula 3-12-2020 Water Bill.pdf; receipt.pdf; Kula Water Bill - Leak.pdf

A Kula Hawaii
[redacted]

Dear Chairperson Mr. Greg Kamm,

Kula High and Intermediate is seeking clarity of KDOW's review process and criteria regarding rebate in water leak charges; and would like to be added to the Board Agenda.

Kula is an educational non-profit on the North Shore that operates a 7 to 12 grade secondary school. As part of the condition placed upon the school by the County, we are required to have an agricultural program that involved planting trees. Those trees have grown in size over the last 25 years and have caused the pipes to break and leak over the years. There was a leak in the March 2020 billing cycle creating a charge of approximately $1500 (invoice attached). The administrator, Christina Zimmerman, sent in all the necessary documents (see photos and receipt attached) at the beginning of April 2020. We have called several times and were told they have the paperwork but it is still being processed. We have heard nothing to date, either a denial or the application was filled in wrong.

In the November billing cycle we experienced another leak. This amounted to approximately $5000 on the November bill (see attached). Again, this was due to roots busting the PVC pipe. Since the line runs through a wooded area, we were not able to detect the leak until the meter reader noticed after so much time. The school runs a deficit and does not have the money to pay the latest leak. We have not applied for the Rebate as it doesn't appear we will be given any consideration or how long it will take.

Kula is asking the Board to review what the policies of the Rebate program are? And if the leak invoicing is mainly a revenue generating program, are there specific considerations spelled out within that policy to accommodate for non-profits? As we understand, leaks caused by tree roots is a legitimate justification for rebate. We don't understand why the school has not been granted any relief to date.

Sincerely,

Jeffrey Lindner
President
A Kula Hawaii

Department of Water
County of Kaua'i

4398 Pua Loke St.
Lihu'e, HI 96766

808-245-5400 - General Inquiry
808-245-5442 - Billing Inquiry

Customer Name:	LINDNER,JEFFREY S
Account Number:	[redacted]
Service Address:	[redacted]
Bill Date:	03/12/2020
Billing Period:	02/10/2020 to 03/11/2020

Important Information

To receive water service notifications and emergency weather announcements by phone, text or email, sign up for the county's BlackBoard Connect notification service at www.kauai.gov/KEMA or call 245-5455.

PAST DUE
$0.00

TOTAL DUE
$1,498.20

*ABP Amount will be deducted on **04/01/2020***

USAGE PROFILE

DATE	THOUS. GAL	DAYS	WATER CHARGES
03/11/2020	155	30	$1,498.20
02/10/2020	9	32	$61.95
01/09/2020	26	30	$208.20
12/10/2019	7	32	$50.65
11/08/2019	7	29	$50.65
10/10/2019	6	29	$45.80
09/11/2019	6	30	$45.80
08/12/2019	3	32	$31.25
07/11/2019	2	29	$26.40
06/12/2019	3	30	$31.25
05/13/2019	5	32	$40.95
04/11/2019	4	29	$36.10
03/13/2019	5	30	$40.95

METER INFORMATION

Meter Number:	08110864	Previous Read:	1564
Start Date:	02/10/20	Current Read:	1719
End Date:	03/11/20	Usage in Kgals:	155

ACCOUNT ACTIVITY

Previous Balance	$61.95
Payments Received - **THANK YOU**	-$61.95
Balance Forward	**$0.00**

CURRENT ACTIVITY

Current Charges and Adjustments	**Amount**
5/8" Tier 1 1 Kgals @ $3.80	$3.80
5/8" Tier 2 6 Kgals @ $4.85	$29.10
5/8" Tier 3 7 Kgals @ $5.65	$39.55
5/8" Tier 4 4 Kgals @ $9.50	$38.00
5/8" Tier 5 137 Kgals @ $10.00	$1,370.00
Water Meter Service Charge	$17.75
Total Current Charges and Adjustments	**$1,498.20**
Total Amount Due	**$1,498.20**

Your Kilauea 2019 (Covering the period of January 1, 2018 to December 31, 2018) Water Quality Report is now available at: www.kauaiwater.org/wqr_kilauea.pdf

Customer Service Announcements — Go Green! www.kauaiwater.org

NEW! To make a payment using a debit or credit card or to view live account updates of your water bill, sign up for the Customer Account Portal at www.kauaiwater.org. Register using your Account Number and email address. For more info, contact us at 808-245-5442. Mahalo.

2/2

Please detach and return this portion with your payment

Department of Water
County of Kaua'i
4398 Pua Loke Street
Lihue, HI 96766-1600

5381360871000014982

Account Number	[redacted]
Due Date	04/01/2020
Amount Due	**$1,498.20**
Enter Amount Paid	**DO NOT PAY**

00000000

220 1 AV 0.389 0130508-HBKS147416-SP.1GRP-000220
LINDNER, JEFFREY S
[redacted]
T:1

DEPARTMENT OF WATER
COUNTY OF KAUA'I
P.O. BOX 29970
HONOLULU HI 96820-2370

4000053813608710000149820000000008

EXPLANATION OF CHARGES
GENERAL USE RATE

1. SERVICE CHARGE: For each service, there shall be a charge per month based on the size of the meter, regardless of the amount of water used.
2. USE CHARGE: In addition, you are charged for each 1,000 gallons of water you use based on block threshold rates.
3. For Current Charges, please visit http://www.kauaiwater.org/RulesAndRegsPart4.pdf

HOW TO PAY YOUR BILL

1. By mail using the enclosed envelope. Please allow sufficient time for payment to arrive by the PAYMENT MUST REACH US BY date.
2. By Automatic Bill Payment from your checking or savings account.
3. In person at our office or at our 24 hour dropbox located at 4398 Pua Loke Street, Lihue.
4. There is a $30.00 charge for all dishonored payments made by check or Automatic Bill Payment.

MOVING/VACATING, START/STOP SERVICE, CHANGE NAME/ADDRESS

All water charges will continue to be your responsibility until you notify us to close your account under your name.

NOT PAYING YOUR BILL ON TIME

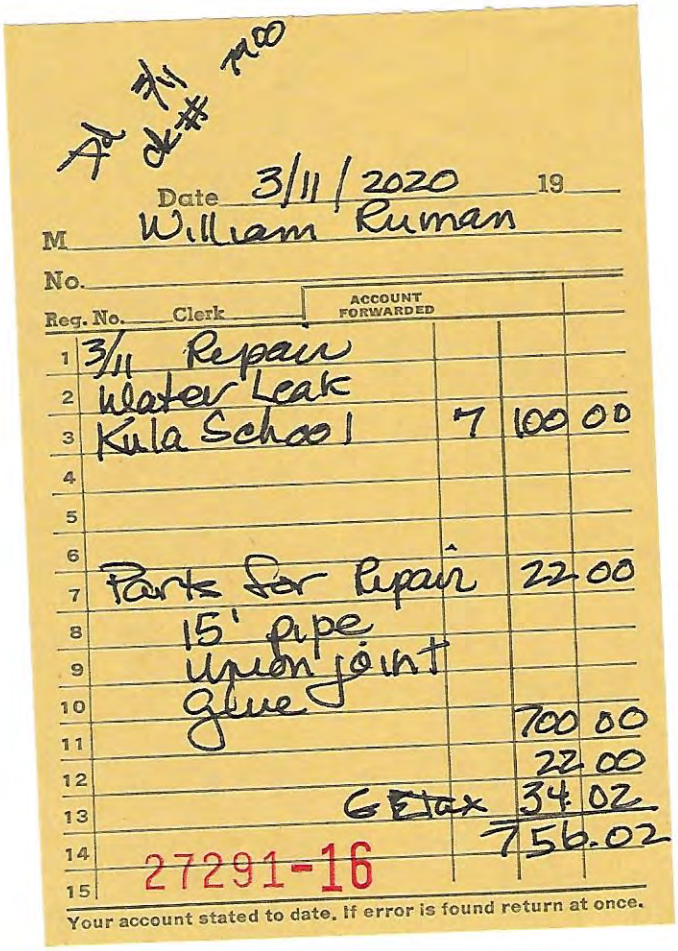
1. If payment is not received by the PAYMENT MUST REACH US BY date on your bill, the entire amount shall become past due and a Final Notice will be issued.
2. If you receive a Final Notice, please pay all past due payments at our Business Office at 4398 Pua Loke Street, Lihue.
3. If your water is turned off for non-payment you will be required to pay your bill in full plus a turn-on charge before your water can be restored, if applicable. You may also be required to pay a cash deposit.

ESTIMATED READING

We try to read your meter each billing period. However, if it is not possible to do so, we will estimate your consumption based on your recent average water usage. Please help us by keeping your meter accessible and clear of cars, debris, foliage, and dogs.

DIRECT LINE NUMBERS

Water Bills & Existing Water Service Questions. 808-245-5442
New Water Service Applications. 808-245-5430
Public Relations/Conservation 808-245-5461
Report a Leak (6:00 am to 4:30 pm). 808-245-5444
Call Police Dispatch (After hours, holidays, weekends) . 808-241-1711



Pd 3/11 ck# 7100

Date 3/11/2020 19

M William Ruman

No.

Reg. No. Clerk | ACCOUNT FORWARDED

1	3/11 Repair			
2	Water Leak			
3	Kula School	7	100	00
4				
5				
6				
7	Parts for Repair		22	00
8	15' Pipe			
9	Union joint			
10	glue			
11			700	00
12			22	00
13		GE tax	34	02
14			756	02
15	27291-16			

Your account stated to date. If error is found return at once.

Department of Water
County of Kaua'i

4398 Pua Loke St.
Lihu'e, HI 96766

808-245-5400 - General Inquiry
808-245-5442 - Billing Inquiry

Customer Name: LINDNER, JEFFREY S
Account Number: [redacted]
Service Address: [redacted]
Bill Date: 11/12/2020
Billing Period: 10/09/2020 to 11/10/2020

Important Information

To receive water service notifications and emergency weather announcements by phone, text or email, sign up for the county's BlackBoard Connect notification service at www.kauai.gov/KEMA or call 245-5455.

PAST DUE
$0.00

TOTAL DUE
$4,968.20
*ABP Amount will be deducted on **12/02/2020***

USAGE PROFILE

DATE	THOUS. GAL	DAYS	WATER CHARGES
11/10/2020	502	32	$4,968.20
10/09/2020	9	29	$61.95
09/10/2020	3	30	$31.25
08/11/2020	3	32	$31.25
07/10/2020	0	30	$17.75
06/10/2020	0	30	$17.75
05/11/2020	0	32	$17.75
04/09/2020	1	29	$21.55
03/11/2020	155	30	$1,498.20
02/10/2020	9	32	$61.95
01/09/2020	26	30	$208.20
12/10/2019	7	32	$50.65
11/08/2019	7	29	$50.65

METER INFORMATION

Meter Number:	08110864	Previous Read:	1735
Start Date:	10/09/20	Current Read:	2237
End Date:	11/10/20	Usage in Kgals:	502

ACCOUNT ACTIVITY

Previous Balance	$61.95
Payments Received - **THANK YOU**	-$61.95
Balance Forward	**$0.00**

CURRENT ACTIVITY

Current Charges and Adjustments	**Amount**
5/8" Tier 1 1 Kgals @ $3.80	$3.80
5/8" Tier 2 6 Kgals @ $4.85	$29.10
5/8" Tier 3 7 Kgals @ $5.65	$39.55
5/8" Tier 4 4 Kgals @ $9.50	$38.00
5/8" Tier 5 484 Kgals @ $10.00	$4,840.00
Water Meter Service Charge	$17.75
Total Current Charges and Adjustments	**$4,968.20**
Total Amount Due	**$4,968.20**

Your Kilauea 2020 (Covering the period of January 1, 2019 to December 31, 2019) Water Quality Report is now available at: www.kauaiwater.org/wqr_kilauea.pdf

Customer Service Announcements

Go Green! www.kauaiwater.org

To make an online payment via credit/debit card, please log-in to the Customer Account Portal at www.kauaiwater.org.

1/1

Please detach and return this portion with your payment

Department of Water
County of Kaua'i
4398 Pua Loke Street
Lihue, HI 96766-1600

5381360871000049682O

Account Number	[redacted]
Due Date	12/02/2020
Amount Due	**$4,968.20**
Enter Amount Paid	**DO NOT PAY**

000000

212 1 AV 0.389 0142208-HBKS164790-SP.1GRP-000212
LINDNER, JEFFREY S
KULA HIGH AND INTERMEDIATE
[redacted]
T:1

DEPARTMENT OF WATER
COUNTY OF KAUA'I
P.O. BOX 29970
HONOLULU HI 96820-2370

40000538136087100004[redacted]000000009


CAT

Old Business

DEPARTMENT OF WATER

County of Kaua‘i

“Water has no Substitute – Conserve It!”

MANAGER’S REPORT No. 20-41 *(Update)*

February 25, 2021

Re: Waiahi Surface Water Treatment Plant Renovation Construction Cost Progress Report

RECOMMENDATION:
There is no action necessary; for Board review and discussion purposes only.

FUNDING: N/A.

BACKGROUND:
As requested by the Board of Water during its January 24, 2020 and February 28, 2020 Regular Board meetings, the Board requested the Department to provide a monthly update on the status of payments to Grove Farm in accordance with the project’s budget. Please refer to Attachment 1.

There are no updates to report since the August 27, 2020 Board meeting; however, it is anticipated that work will resume on the project sometime in the first quarter of 2021. Per Grove Farm, the next phase of the project is expected to be put out to bid in February, 2021.

BW/ein

Attachment(s): Waiahi Surface Water Treatment Plant Renovation Construction Cost Progress Report as of January 25, 2021.

Mgrrp/February 25, 2021/20-41/Waiahi Surface Water Treatment Plant Renovation Project Construction Cost Progress Report (Update) (1-24-20, 2-28-20, 6-25-20, 7-23-20, 8-27-20, 9-24-20, 10-22-20, 11-19-20, 12-17-20, 1-21-21, 2-25-21):ein

Waiahi SWTP Renovation
Maintaining 3.0 MGD
Construction Costs

ATTACHMENT 1

Item No.	Qty.	Unit	Cost Per Unit	Description	Total Cost Estimate	Grove Farm Total (1/3) 33.33%	BWS Total (2/3) 66.67%	BWS Total Amount Due to Date ($)	BWS Amount Paid to Date ($)	Estimate Total to Date (% Line Item)	All Payments Received by Grove Farm within 15 days?
SITEWORK[1]											
1	1	LS	$100,000	Mobilization & Demobilization	$100,000	$33,333	$66,667	$0	$0	0.00%	N/A
2	1.44	Acre	$14,876	Clearing & Grubbing, including demolition of existing shed at Off-site Detention Basins, in place complete	$21,421	$7,140	$14,281	$0	$0	0.00%	N/A
3	4151	CY	$30	Excavation, in place complete	$124,530	$41,510	$83,020	$0	$0	0.00%	N/A
4	2673	CY	$15	Embankment, in place complete.	$40,095	$13,365	$26,730	$0	$0	0.00%	N/A
5	1	LS	$11,950	Erosion Control, including temp silt fence, temp wheel wash area, temp ground cover & erosion control fabric	$11,950	$3,983	$7,966	$0	$0	0.00%	N/A
6	16	SY	$450	Rip-rap Lined Embankment Swale, in place complete	$7,200	$2,400	$4,800	$0	$0	0.00%	N/A
7	956	LF	$80	Chain Link Fence, including warning signs, in place complete	$76,480	$25,493	$50,987	$0	$0	0.00%	N/A
8	1	EA	$2,500	Chain Link Gate, 18' Wide X 6' High at Off-site Detention Basins, in place complete.	$2,500	$833	$1,667	$0	$0	0.00%	N/A
9	1	EA	$1,000	Chain Link Pedestrain Gate, 30" Wide X 6' High at Drain/Reject Water Pump Station, in place complete	$1,000	$333	$667	$0	$0	0.00%	N/A
10	2434	SY	$80	Asphalt Concrete Pavement, including base course, in place complete	$194,720	$64,907	$129,813	$0	$0	0.00%	N/A
11	1055	LF	$55	Concrete curb, in place complete	$58,025	$19,342	$38,683	$0	$0	0.00%	N/A
12	1321	LF	$45	Concrete header, in place complete	$59,445	$19,815	$39,630	$0	$0	0.00%	N/A
13	8	EA	$250	Concrete drop curb, in place complete	$2,000	$667	$1,333	$0	$0	0.00%	N/A
14	13	EA	$800	Bollards, in place complete.	$10,400	$3,467	$6,933	$0	$0	0.00%	N/A
15	2	EA	$500	Ring Buoy, including pipe stand, in place complete	$1,000	$333	$667	$0	$0	0.00%	N/A
YARD PIPING[1]											
1	1	LS	$58,000	Pre-lube Line for Existing Reservoir Intake Pumps, including fittings and appurtenances, in place complete	$58,000	$19,333	$38,667	$0	$0	0.00%	N/A
2	1	LS	$123,000	Flocculation Tank Inlet Line, including fittings, valves, and appurtenances, cutting, removing and relocating	$123,000	$41,000	$82,000	$0	$0	0.00%	N/A

Waiahi SWTP Renovation
Maintaining 3.0 MGD
Construction Costs

Item No.	Qty.	Unit	Cost Per Unit	Description	Total Cost Estimate	Grove Farm Total (1/3) 33.33%	BWS Total (2/3) 66.67%	BWS Total Amount Due to Date ($)	BWS Amount Paid to Date ($)	Estimate Total to Date (% Line Item)	All Payments Received by Grove Farm within 15 days?
3	1	LS	$29,000	Drainline "A", including connection to existing drain manholes & modifications to existing DMH "A-2"	$29,000	$9,667	$19,333	$0	$0	0.00%	N/A
4	1	LS	$150,000	Drainline "B," including headwall with ungrouted rip rap, & drain manholes, in place complete	$150,000	$50,000	$100,000	$0	$0	0.00%	N/A
5	1	LS	$24,000	Drainline "C", including headwalls, in place complete	$24,000	$8,000	$16,000	$0	$0	0.00%	N/A
6	1	LS	$130,000	Force Mains "A", "B" & "C", including fittings, valves & appurtenances, & concrete blocks	$130,000	$43,333	$86,667	$0	$0	0.00%	N/A
7	1	LS	$69,182	Off-Site Detention Basin Inlet & Outlet Lines, including residuals discharge connection	$69,182	$23,061	$46,121	$0	$0	0.00%	N/A
8	1	LS	$28,302	Residuals Disharge Lines "A" & "B", including fittings, valves & appurtenances & concrete blocks	$28,302	$9,434	$18,868	$0	$0	0.00%	N/A
9	1	LS	$75,472	Residuals Drying Beds Inlet Lines, including fittings, valves & appurtenances, concrete blocks	$75,472	$25,157	$50,315	$0	$0	0.00%	N/A
STRAINER SYSTEM[1]											
1	1	LS	$120,000	16" Automatic Backwashing Strainer, including removal & disposal of ex. strainer, drain & backwash lines	$120,000	$40,000	$80,000	$0	$0	0.00%	N/A
PUMP GALLERY IMPROVEMENTS[1]											
1	1	LS	$5,000	Liquid Level Sensor Alarm System, in place complete	$5,000	$1,667	$3,333	$0	$0	0.00%	N/A
2	1	LS	$5,000	8" Butterfly Valve on Permeate Line to Backpulse Tank, in place complete	$5,000	$1,667	$3,333	$0	$0	0.00%	N/A
3	1	LS	$10,000	Replace Existing Membrane Tank Level Transmitters. (Transmitters furnished by SUEZ. See Bid Item G-1.)	$10,000	$3,333	$6,667	$0	$0	0.00%	N/A
4	1	LS	$10,000	Combined Permeate Turbidimeter, including sampling line & revisions to sample drains & control wiring	$10,000	$3,333	$6,667	$0	$0	0.00%	N/A
DRAIN/REJECT WATER PUMP STATION[1]											
1	1	LS	$44,025	Drain/Reject Water Pump Station Concrete Wet Well & Pipe Support, including structural excavation	$44,025	$14,675	$29,350	$0	$0	0.00%	N/A

Waiahi SWTP Renovation
Maintaining 3.0 MGD
Construction Costs

Item No.	Qty.	Unit	Cost Per Unit	Description	Total Cost Estimate	Grove Farm Total (1/3) 33.33%	BWS Total (2/3) 66.67%	BWS Total Amount Due to Date ($)	BWS Amount Paid to Date ($)	Estimate Total to Date (% Line Item)	All Payments Received by Grove Farm within 15 days?
2	1	LS	$69,182	Drain/Reject Water Pump System, including liquid level sensor, transducer, pump accessories, access hatch	$69,182	$23,061	$46,121	$0	$0	0.00%	N/A
3	1	LS	$62,893	Drain/Reject Water Piping, including fittings, valves & appurtenances, & connection to existing drain line	$62,893	$20,964	$41,929	$0	$0	0.00%	N/A
MEMBRANE UNIT REPLACEMENT[2]											
1	1	LS	$1,015,545	Membrane Unit Upgrades by SUEZ, all in accordance with SUEZ's proposal dated 9/6/2019.	$1,015,545	$338,515.00	$677,030	$677,030.00	$677,030.00	100.00%	Yes
2	1	LS	$160,941	Installation of Membrane Unit Upgrades by SUEZ, in place complete. Aqua Engineers, proposal dated 9/16/2019	$160,941	$53,647.00	$107,294	$107,294.00	$107,294.00	100.00%	Yes
3	1	LS	*Initial estimate $0	Taxes & Additional US Customs Duty Fees, in accordance with SUEZ's proposal (*estimate was $0)	$47,852.48	$15,950.83	$31,901.65	$31,901.65	$31,901.65	100.00%	Yes
LINER FOR OFF-SITE DETENTION BASINS[1]											
1	1	LS	$119,497	Liner for Off-Site Detention Basins, including geotextile fabric, anchoring battens & trenches	$119,497	$39,832	$79,665	$0	$0	0.00%	N/A
PORTABLE PUMP FOR RESIDUALS TRANSFER[3]											
1	1	LS	$41,024	Portable Pump for Residuals Transfer, including wheel kit & hoses, in place complete.	$41,024	$13,675	$27,349	$0	$0	0.00%	N/A
GENERATOR BUILDING[1]											
1	1	LS	$350,000	Generator Building	$350,000	$116,667	$233,333	$0	$0	0.00%	N/A
2	1	LS	$300,000	Emergency Generator System	$300,000	$100,000	$200,000	$0	$0	0.00%	N/A
3	1	LS	$28,000	Painting and Coating	$28,000	$9,333	$18,667	$0	$0	0.00%	N/A
ELECTRICAL WORK[1]											
1	1	LS	$493,192	Electrical Work, in place complete.	$493,192	$164,397	$328,795	$0	$0	0.00%	N/A

Waiahi SWTP Renovation
Maintaining 3.0 MGD
Construction Costs

Item No.	Qty.	Unit	Cost Per Unit	Description	Total Cost Estimate	Grove Farm Total (1/3) 33.33%	BWS Total (2/3) 66.67%	BWS Total Amount Due to Date ($)	BWS Amount Paid to Date ($)	Estimate Total to Date (% Line Item)	All Payments Received by Grove Farm within 15 days?

Summary for February 25, 2021 Board Meeting

	Total Cost Estimate	GF Total 1/3 (33.33%)	BWS Total 2/3 (66.67%)	BWS Total Amount Due to Date ($)	BWS Total Amount Paid to Date ($)	Estimate Total to Date (% of total project)	All Payments Received by Grove Farm within 15 days?
Project Total Estimates =	$4,279,874	$1,426,625	$2,853,249	$816,226	$816,226	28.61%	Yes

DOW NOTES

***Payments due within 15 calendar days of receipt of invoice.**

***DOW will not be withholding 5% retainage.**

OLD BUSINESS

2. Discussion and Possible Action on the hiring of Manager and Chief Engineer (deferred December 17, 2020)

Executive Session

Discussion

Staff Reports

DEPARTMENT OF WATER

County of Kaua'i

"Water has no Substitute – Conserve It!"

FISCAL REPORT: MONTHLY SUMMARY HIGHLIGHTS – JANUARY 2021

I. BUDGET SUMMARY VS. ACTUAL (see attached report for details)

YEAR TO DATE (YTD) BUDGET & ACTUAL EXPENSES SUMMARY – AS OF DECEMBER, 2020

	BUDGET	vs	EXPENSED
· Operating Expenses	$20,627,786		$13,066,405
· Debt Principal Payment	4,014,034		4,266,231
· Capital Projects	33,138,702		5,792,206
TOTAL	$57,780,522		$23,124,842

REVENUES: VARIANCE = "ACTUAL" LESS "BUDGET"; POSITIVE INDICATES HIGHER PERFORMANCE THAN EXPECTED.

- Total Revenue as of January 2021 was 7% below projection.
  - Water sales of $15.1 million ("M") was $1.7M or 12% higher than projected.
  - Other Water Revenue - Receipts of $93.8 thousand ("K") was $81.2K below projection or (46%).
  - Capital Contributions: Contributions from Federal & State Grants – $467.3K receipts from BAB Subsidy.
  - Investment Income & Net Increase in FV of Investments –$300.7K.
  - Miscellaneous Revenues - $1.3K.

OPERATING EXPENSES: VARIANCE = BUDGET LESS ACTUAL

EXPENSES; POSITIVE INDICATES LESS SPENDING THAN PLANNED. **REVISED YTD BUDGET COLUMNS INCLUDE PO ROLLOVER FROM FY ENDING 2020.**

- YTD Operating Expenses before depreciation and amortization was $13.1M. Total spending was $7.6M less than the total of the approved operating budget and FY 2020 PO rollovers. This returned a positive variance of 37%.
  - Employee Related Expenses was $6M with a 9% positive variance.
  - Contracts & Services was $2.8M with a 67% positive variance.
    - Professional Services, Other Services – Billing, Communication, Insurance and Repairs and Maintenance for non-water systems are the main items contributing to the 67% positive variance.
  - Exceptional Expenses – None.
  - Fuel & Utilities was $1.5M with 19% positive variance.
  - Bulk Water Purchase was $611.6K with a 42% positive variance.
  - Office & Operating Supplies was $519.3K with 46% positive variance.
  - Training, Travel & Meeting Expenses – $13.9K with 85% positive variance.
  - Debt Service – Interest Expense - $1.7M with 3% positive variance.
  - Depreciation & Amortization (non-cash expenses) is $4.2M with 1% positive variance.

NET OPERATING INCOME:

- Net Operating Income before depreciation and amortization - $4.1M.
- Net Operating Income (loss) after depreciation & amortization was $(47.9)K.

NON-OPERATING PROCEEDS & DISBURSEMENTS

- SRF Loan Proceeds – None.
- FRC – Facility Reserve Charge –$880.2K.
- YTD Debt Principal Payment is $4.26M.

CAPITAL PROJECTS BUDGET: YTD DISBURSEMENTS = $5,792,206.18

- Capital Projects: Water Utility Fund - $5.75M
- Capital Projects: FRC Fund – None
- Capital Projects: BAB Fund - $43.3K
- Capital Projects: SRF Loan Fund - None

II. FY 2020 – 2021 CERTIFICATION OF FUNDS YTD $1,979,999.32 (NO CHANGE FROM PREVIOUS MONTH)

	REPORT TO MANAGER (with approved Budget)	MANAGER'S REPORT (New Budget Requests)
Water Utility Fund	$374,870.62	$1,519,150.00
FRC Fund	$.00	$.00
BAB Fund	$.00	$85,978.70
Total	**$374,870.62**	**$1,605,128.70**

III. COMPARATIVE CHARTS:

METERED CONSUMPTION:

- January 2021 monthly metered consumption was 267.3 million gallons (mg); decreased by 22.6 mg or 8% as compared from the same month of FY 2020.
- Year to Date (YTD) metered consumption as of 1/31/21 was 2,118.6 mg with a YTD cumulative decrease of 198.2 mg or 9% as compared from the same month of FY 2020.

IV. COMPARATIVE BALANCE SHEET: SEE ATTACHED.

Statement of Net Positions as of January 31, 2021.

V. OTHER FISCAL ONGOING ACTIVITIES/INITIATIVES:

- Annual Proposed Operating & Capital Outlay Budgets – FY 2021-2022.
- On-going; Great Plains (GP) planned live implementation on 4/12/21 to switch over to the cloud.
- The 2007 Depreciation Study was also updated as part of the GP upgrade and implementation.

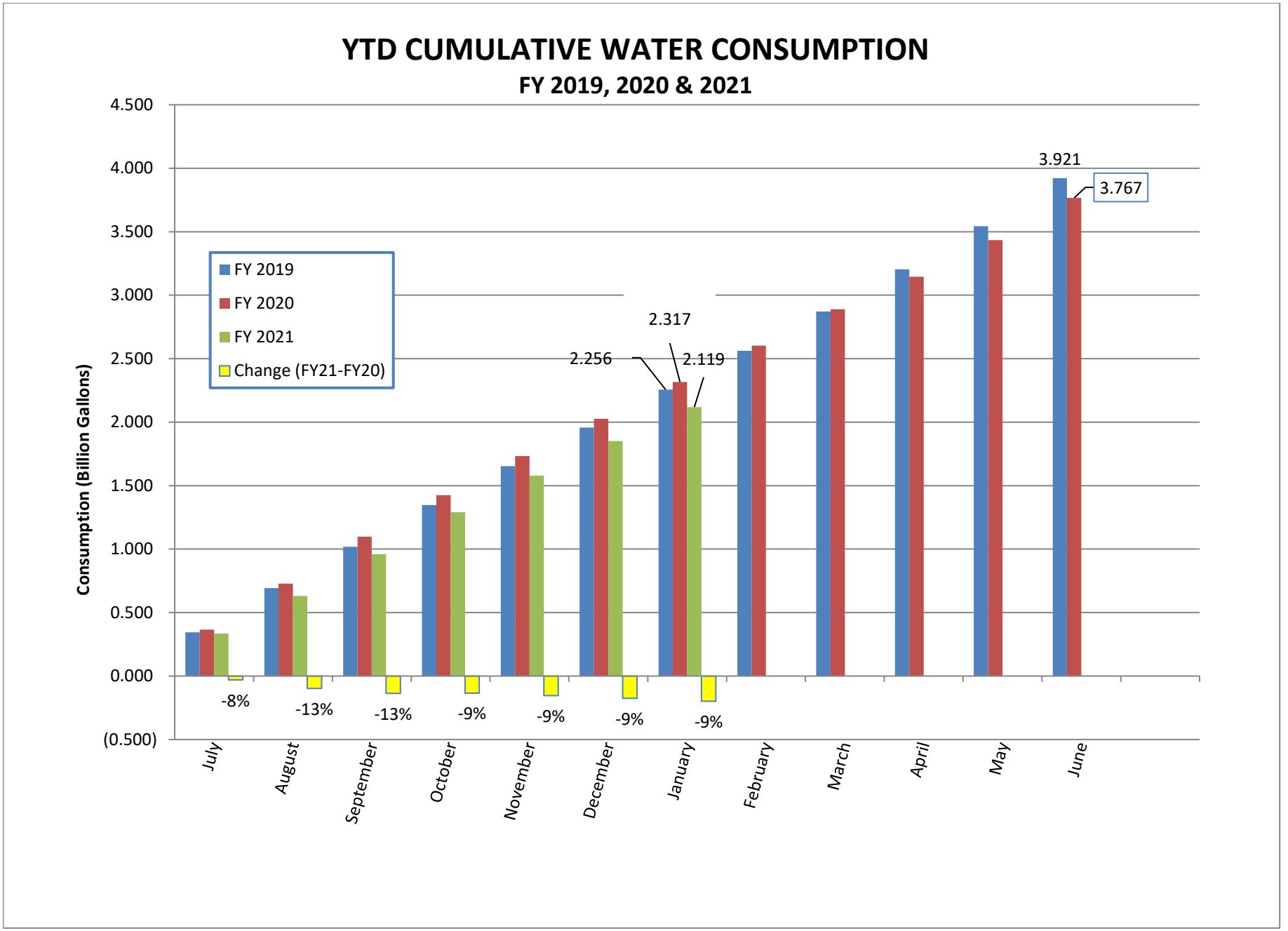
- New Beacon Meters: testing and validation - Ongoing.
- Develop Financial Policies for DOW – Statement of Qualifications were solicited for FY 2021, DOW will proceed with procurement.
- Budget Program Solution – It will be addressed concurrently with the Financial Policies Development procurement.
- Five (5) years Water Rate Study terminated; DOW will restart with an updated consumer database. Foresee procurement beginning of FY 2022.
- FEMA update: DOW submitted a request for an additional 30 months' extension to complete two outstanding projects for FEMA grant funding reimbursement; the Makaleha tunnel and Mānoa Stream.

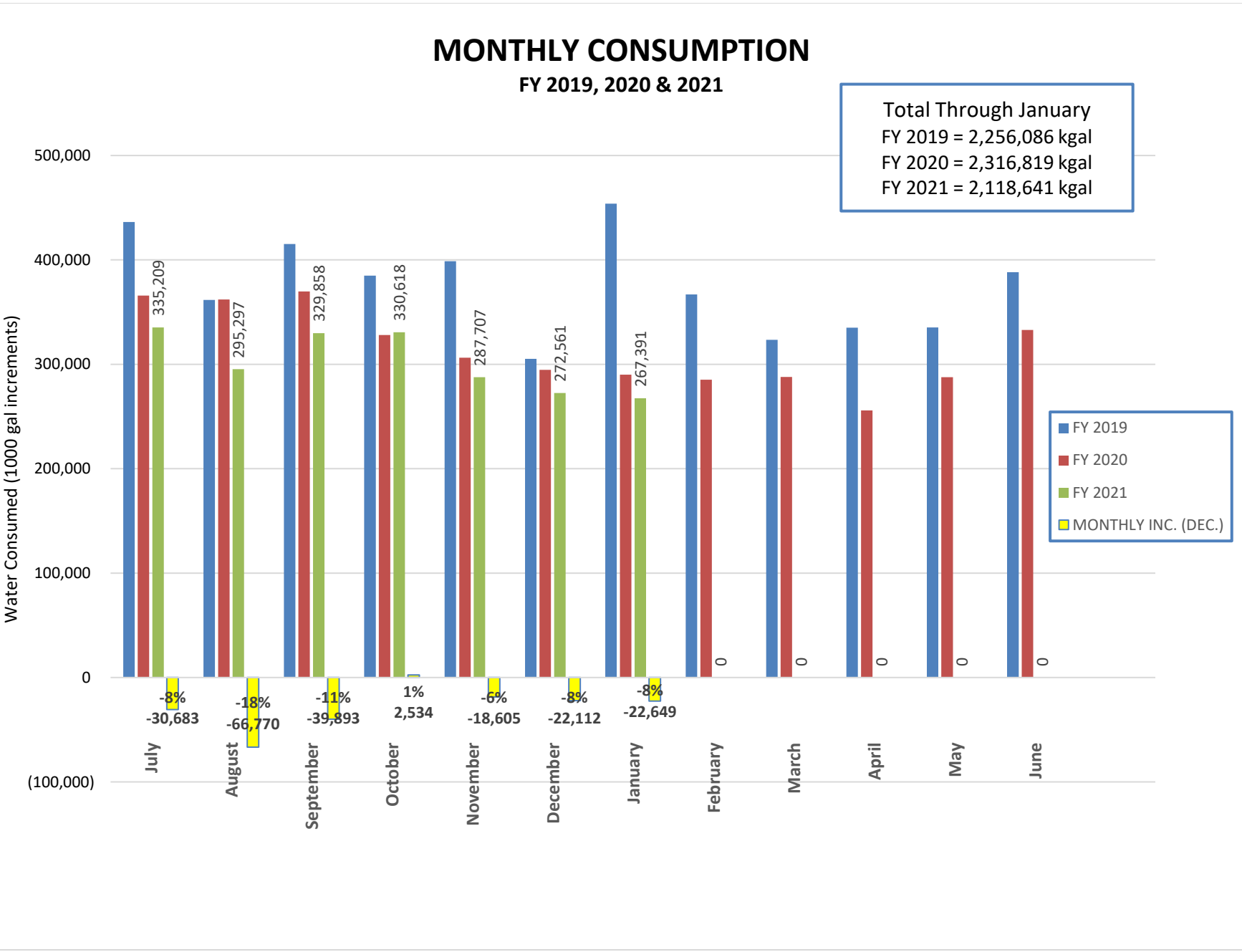
MY/ein

Monthly Budget Summary vs Actual

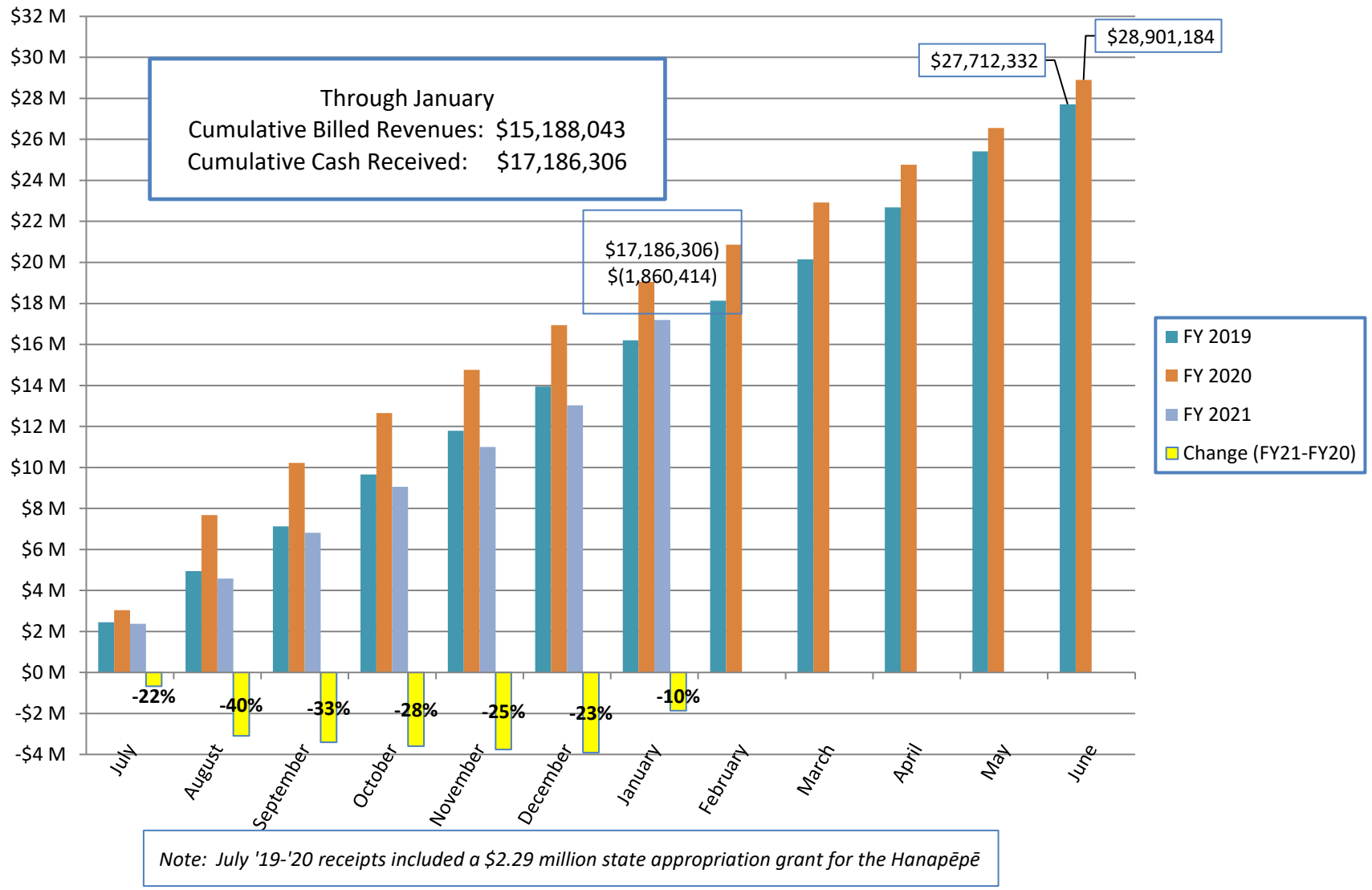
1/31/2021

	January				FY 2021			
I. OPERATING BUDGET	**Original Budget**	**Revised Budget**	**Actual**	**Variance**	**Revised YTD Budget**	**YTD Actual**	***Variance**	**Variance %**
Total Revenue	**$2,647,358**	**$2,647,358**	**$2,244,633**	**($402,724)**	**$18,531,506**	**$17,215,898**	**($1,315,608)**	**(7%)**
Total Employee-Related Expenses	**$935,356**	**$935,356**	**$853,634**	**$81,722**	**$6,547,492**	**$5,986,767**	**$560,725**	**9%**
Total Contracts & Services	**$597,969**	**$597,969**	**$409,445**	**$188,524**	**$8,405,455**	**$2,753,564**	**$5,651,891**	**67%**
Total Fuel & Utilities		**$248,865**	**$194,427**	**$54,438**	**$1,798,019**	**$1,464,185**	**$333,834**	**19%**
Total Bulk Water Purchase	**$151,681**	**$151,681**	**$126,563**	**$25,118**	**$1,061,767**	**$611,641**	**$450,126**	**42%**
Total Office & Operating Supplies	**$86,282**	**$86,282**	**$71,072**	**$15,210**	**$957,470**	**$519,262**	**$438,208**	**46%**
Total Training, Travel & Meeting Expense	**$13,260**	**$13,260**	**$7,234**	**$6,026**	**$92,820**	**$13,932**	**$78,888**	**85%**
Total Interest Expense	**$252,109**	**$252,109**	**$245,293**	**$6,816**	**$1,764,763**	**$1,717,054**	**$47,709**	**3%**
TOTAL OPERATING EXPENSES	**$2,285,522**	**$2,285,522**	**$1,907,668**	**$377,854**	**$20,627,786**	**$13,066,405**	**$7,561,382**	**37%**
Net Operating Income (loss) Before Depreciation & Amortization	**$361,836**	**$361,836**	**$336,965**	**-$24,871**	**-$2,096,280**	**$4,149,494**	**$6,245,774**	**(298%)**
Total Depreciation & Amortization	**$604,388**	**$604,388**	**$599,391**	**$4,997**	**$4,230,716**	**$4,197,410**	**$33,306**	**1%**
Net Operating Income (Loss)	**-$242,552**	**-$242,552**	**-$262,426**	**-$19,874**	**-$6,326,996**	**-$47,916**	**$6,279,080**	**(99%)**
Total Non-Operating Proceeds		**$33,333**	**$58,575**	**$25,242**	**$233,331**	**$880,209**	**$646,878**	**277%**
Net Proceeds		**-$209,219**	**-$203,851**	**$5,368**	**-$10,107,699**	**-$3,433,939**	**$6,673,761**	**(66%)**
Total Capital Projects		**$2,350,620**	**$2,741,552**	**-$390,932**	**$33,138,702**	**$5,792,206**	**$27,346,496**	**83%**


YTD CUMULATIVE WATER CONSUMPTION
FY 2019, 2020 & 2021
Consumption (Billion Gallons)
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
(0.500)
FY 2019
FY 2020
FY 2021
Change (FY21-FY20)
3.921
3.767
2.317
2.256
2.119
-8%
-13%
-13%
-9%
-9%
-9%
-9%
July
August
September
October
November
December
January
February
March
April
May
June


MONTHLY CONSUMPTION
FY 2019, 2020 & 2021
Total Through January
FY 2019 = 2,256,086 kgal
FY 2020 = 2,316,819 kgal
FY 2021 = 2,118,641 kgal
Water Consumed (1000 gal increments)
500,000
400,000
300,000
200,000
100,000
0
(100,000)
335,209
295,297
329,858
330,618
287,707
272,561
267,391
0
0
0
0
0
-8%
-30,683
-18%
-66,770
-11%
-39,893
1%
2,534
-6%
-18,605
-8%
-22,112
-8%
-22,649
July
August
September
October
November
December
January
February
March
April
May
June
FY 2019
FY 2020
FY 2021
MONTHLY INC. (DEC.)

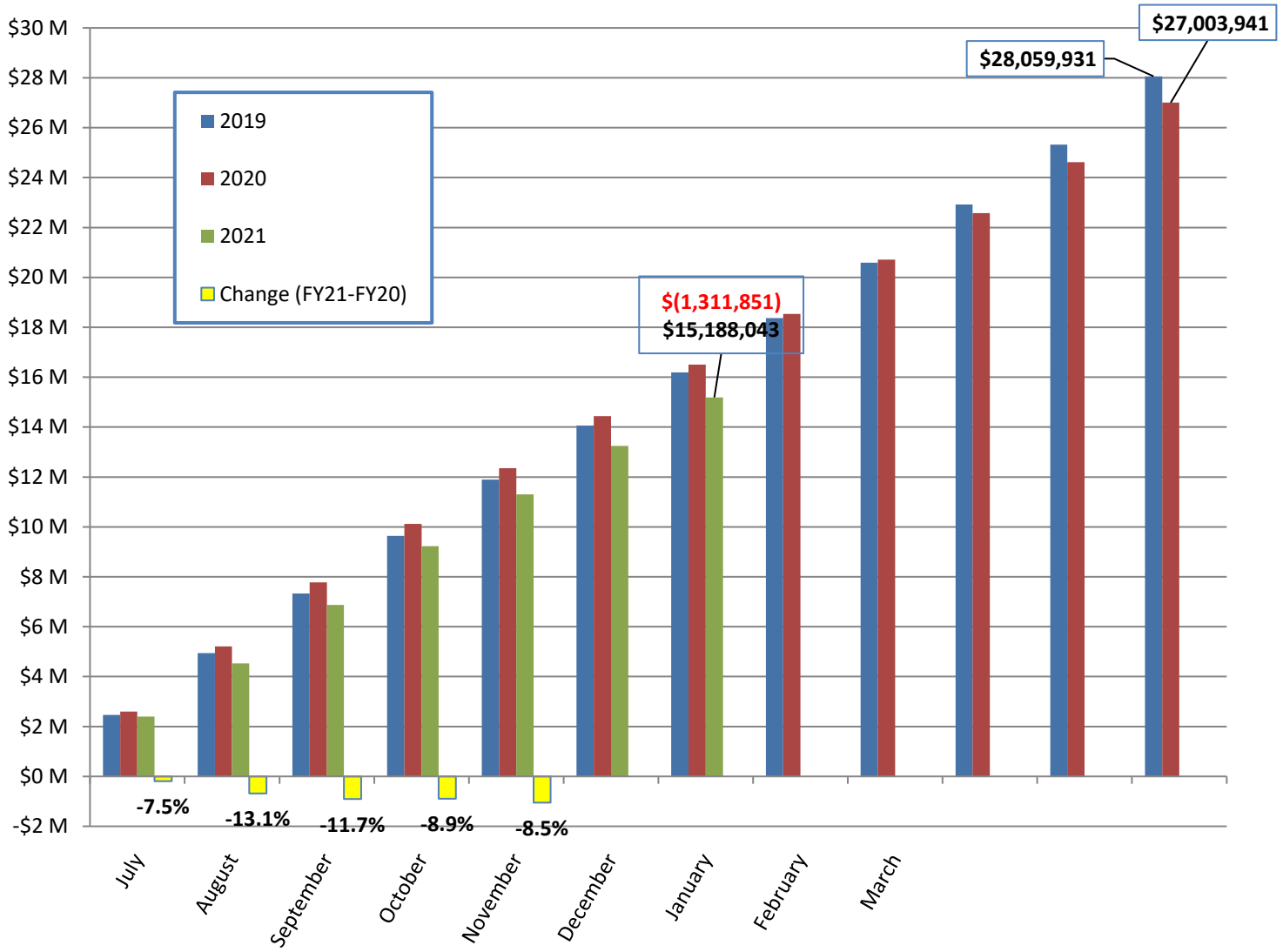
WU CUMULATIVE CASH RECEIPTS
FY 2019, 2020 & 2021

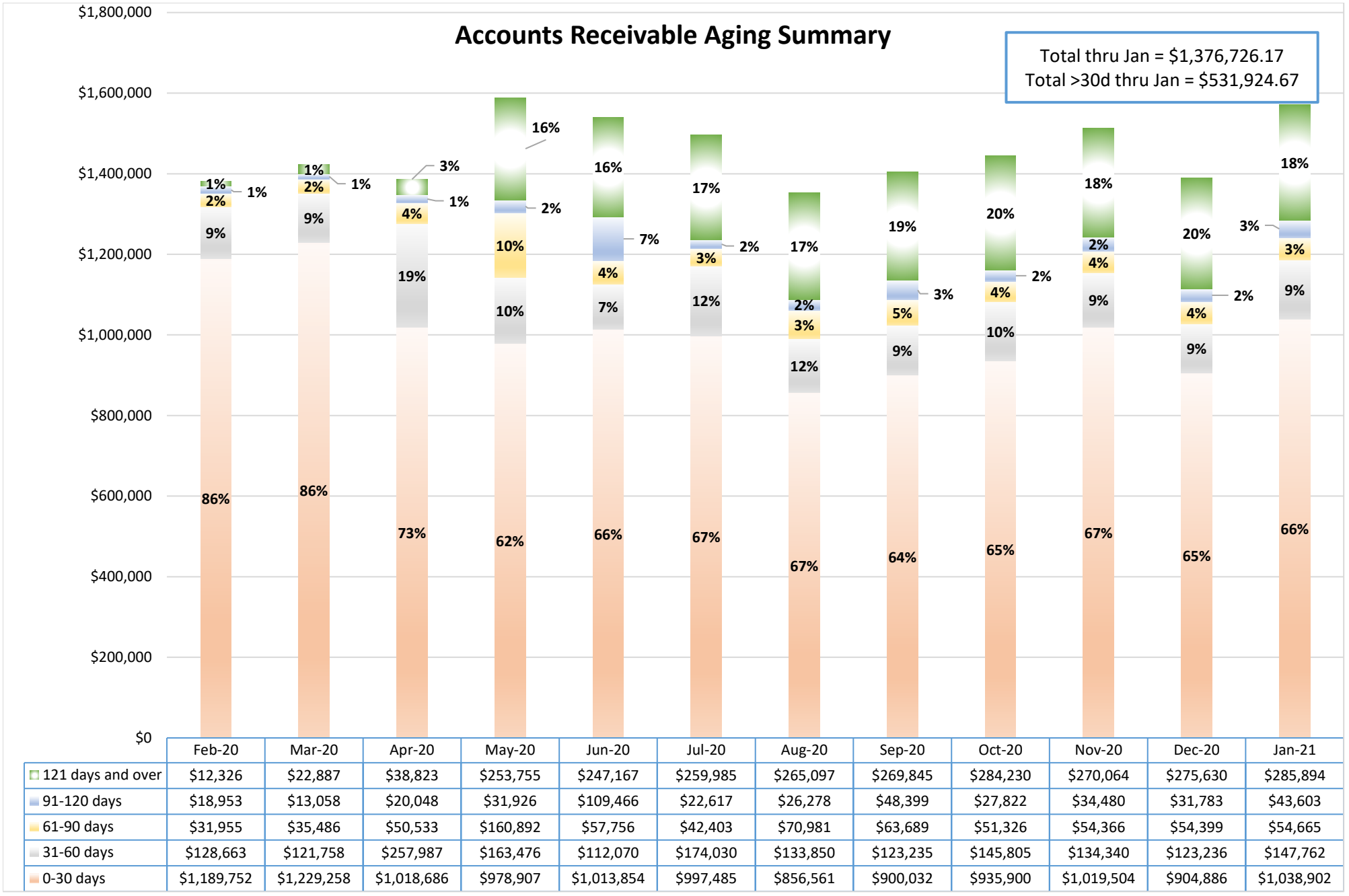


Note: July '19-'20 receipts included a $2.29 million state appropriation grant for the Hanapēpē

CUMULATIVE BILLED REVENUES

FY 2019, 2020 & 2021





	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21
121 days and over	$12,326	$22,887	$38,823	$253,755	$247,167	$259,985	$265,097	$269,845	$284,230	$270,064	$275,630	$285,894
91-120 days	$18,953	$13,058	$20,048	$31,926	$109,466	$22,617	$26,278	$48,399	$27,822	$34,480	$31,783	$43,603
61-90 days	$31,955	$35,486	$50,533	$160,892	$57,756	$42,403	$70,981	$63,689	$51,326	$54,366	$54,399	$54,665
31-60 days	$128,663	$121,758	$257,987	$163,476	$112,070	$174,030	$133,850	$123,235	$145,805	$134,340	$123,236	$147,762
0-30 days	$1,189,752	$1,229,258	$1,018,686	$978,907	$1,013,854	$997,485	$856,561	$900,032	$935,900	$1,019,504	$904,886	$1,038,902

DEPARTMENT OF WATER

County of Kaua'i

"Water has no Substitute – Conserve it!"

INFORMATION & EDUCATION SPECIALIST REPORT

February 25, 2021

Public Notices and Announcements

All news releases were published online via the Department's Facebook page and on the County of Kaua`i's website at www.kauai.gov/press-releases. Additionally, all roadwork notices are emailed to the Department of Transportation (DOT) communications office.

Service Announcements:

Date Issued	*Water System & Affected Service Areas*	*Announcement*	*Effective Date & Times*	*Other Notices*
01/13/21	KOLOA – Portion of Koloa Road; between Omao Road and Poipu Road.	Water service shutdown: water line improvements	Jan. 21- 22 9 p.m. to 5 a.m.	BlackBoard CTY
01/14/21	KOLOA – Portion of Koloa Road; between Omao Road and Poipu Road	Water service cancelled. Crews isolated the work are to avoid service disruption.	n/a	BlackBoard CTY
01/14/21	Hanapepe-Eleele Water System Improvements Project Road affected: Puolo Road, between Kaumualii Highway and Hanapepe road in Hanapepe.	Partial road closure: waterline improvements.	Jan. 21- 22 7:30 a.m. to 3:30 p.m.	
01/18/21	WAINIHA – Wainiha to Haena, all customers	Water Conservation Request: power outage in Wainiha	Jan. 18 Issued 11:30 a.m. Lifted 8:45 p.m.	BlackBoard CTY
01/19/21	KAPA'A – Portion of Kuhio Highway; between Hoi Road and Wana Road.	Emergency water service shutdown: damaged distribution line	Issued 12:30 p.m. Est. duration 3-4 hours	BlackBoard CTY
01/25/21	Hanapepe-Eleele Water Systems Improvements Project	Hanapepe Bridge closure schedule: Weekly closure to conduct waterline work	Feb. 1-Apr. 30 7:30 a.m. to 5 p.m. Mon-Fri, except holidays	Email notice to Hanapepe Community.
01/25/21	KAPA'A Road affected: on Kuhio Highway, between Aleka Loop and the Kapa'a Bypass Road.	Lane Closure on Kuhio Highway: emergency repairs to main line break	Issued 12:30 p.m. Est. duration 6 hours	
01/26/21 & 02/01/21	HANAPEPE – Hana Road	Water service shutdown: waterline installation and improvements works Reminder notice issued on 02/01.	Feb. 2-3 9 p.m. to 5 a.m.	Door to door notices, electronic message board
02/06/21 PSA	KILAUEA – Portion of Kilauea Road; from Kauapea Road to the Kilauea Lighthouse.	Emergency water service shutdown: main line break	Feb. 6 Issued 11 a.m. Est. duration 2-3 hours	BlackBoard CTY

02/07/21 PSA	WAILUA – Lulo Road	Emergency water service notice: damaged service lateral	Feb. 6. Issued at 10 a.m., updated to 1112 p.m. 1st estimate: 2-3 hrs. Extended to 4 p.m. Restored at 2:15 p.m.	BlackBoard CTY
02/09/21	Hanapepe Water Systems Improvements Project	Partial lane closure on Hanapepe Road: new main line installation	Feb. 16-Mar. 1 7 a.m. to 5:30 p.m. Mon-Fri only	Email notice to Hanapepe Community, door to Door notice to impacted area

PSA: Public Service Announcement

Other Media:

- The Department was mentioned in an article published in the Garden Island Newspaper on Jan 22, 2021 entitled "Water outage at Kalepa Village Thursday" by Stephanie Shinno. The article explained the Department of Water's assistance during an emergency repair at the Kalepa Village Apartments complex in Hanamaulu. The Department provided access to potable water via water trailer to their tenants and assisted the complex with a leak investigation. (*Attached*)

Public Relations Program

Community Outreach & Education

- Jonell Kaohelauli'i completed the 2020 WaterSense Partner annual report. The report was submitted online on Feb. 10, 2021. As a partner of the Environmental Protection Agency's (EPA) WaterSense Program, the Department has access to valuable partnership resources, such as; conservation and educational programs, national campaigns and recognition via the WaterSense website.
- Wise Water Wednesday campaign: Jonell designed and published weekly advertisements for the Garden Island Newspaper for the month of January and ads for Feb. 3 and 10th as of this report date. Advertising topics included; the customer service portal, reporting water leaks, water conservation tips and promotion of the Department's convenient bill pay options.

Upcoming Community Outreach & Educational Events

- March 15-19, 2021 – EPA's Fix a Leak Awareness Week

Project WET Hawaii

- Jonell attended the bi-monthly coordinator's newsletter meeting on Feb. 4, 2021.
- A Project WET Hawaii Facilitator training is being scheduled on April 22-23, 2021.

Miscellaneous

- Jenny Paleracio published the January 2021 edition of the employee newsletter, "As the Water Flows".

JK/ein

Attachments: *The Garden Island* (Water outage at Kalepa Village Thursday)

Mgrrp/February 2021/Information & Education Specialist (2-25-21):ein

Published on 01-22-2021 in the Garden Island Newspaper

Water outage at Kalepa Village Thursday

By Stephanie Shinno The Garden Island | Friday, January 22, 2021, 12:05 a.m.

Share this story

Stephanie Shinno / The Garden Island

Kalepa Village resident Kawena Bagano and children Kalino Bagano and Wailea Bagano smile while filling up their five-gallon water containers at a county Department of Water portable unit Thursday in Hnama'ulu.

-continued-

HANAMA'ULU — Residents at Kalepa Village Apartments in Hanamau'ulu woke up on Thursday morning to low water pressure. After and initial investigation The Department of Water (DOW) notified property maintenance of the leak that was on Kalepa Village property.

Resident Kawena Bagano was refilling her three five-gallon water containers with water provided by the DOW's water tanks in front of Kalepa Village's office at around 2 p.m.

"It's been a bit frustrating," Bagano said. I work from home remotely and I home-school my kids today. That's why we are getting water right now. We have been using the bathroom, they told us this morning that they think it was going to be done by half-day, and its been half-day already and still no water."

Resident Manager Lee Yasutake sent out a letter to all residents early Thursday morning. According to Yasutake, an underground water pipe burst fronting the Kuhio Highway.

"As most of you know the water department shut off the water to the Kalepa units," Yasutake said. "We are in the process of getting it repaired. Once the plumbing company gets their equipment here and digs up the ground, we will know more information at that time. We can then tell you how long the repairs will take. You can call the office periodically for updates. In the event it takes longer than we hope, the water department will be bringing out a water buffalo later today."

Yasutake advised and encouraged Kalepa Village residents to take advantage of the two buffalo tanks in front of his office.

-continued-

"It's a water tank to supply water for our tenants for their toilet so it can operate," Yasutake said. "You'll need to furnish your own container. We can assist our elderly or handicapped tenants that have no family members or friends to help them. Call the office if you need our assistance to fill your container and have it delivered to your unit. Please purchase bottled water for your drinking and cooking needs at the store."

By the afternoon an EARTHWORKS PACIFIC INC. crew were found drilling, working in front of the main entrance of Kalepa Village.

"Hopefully we will be done within the next hour or two," EARTHWORKS PACIFIC INC. representative Kawika Moniz said.

DOW confirmed the water leak was only happening on Kalepa Village and no other communities were affected. Over 140 families were affected.

For more information, please contact the Department of Water at 245-5461.

###

Operations Services Dashboard

Month	Leak Repairs	Calls for Service	Meters Installed	Temporary Hydrant Meters	Work Orders Issued	Work Orders Closed	One Call Requests	Hydrants Hit
July								
August								
September								
October								
November	20	205	63	4	129	91	14	0
December	38	217	68	4	165	102	33	2
January	33	183	64	2	178	172	36	2
February								
March								
April								
May								
June								

Operations Contract Dashboard

Open for Bid

Type	Contract Number	Job Number	Title	Contractor/Vendor
Equipment	GS-2021-03		Compact Track Loader/Addendum #1	Resolicited, award pending
Equipment	GS-2021-01		Sewage Lift Station Control System	Resolicited, award posted

Awaiting Board Approval

Type	Contract Number	Job Number	Title	Contractor

Processing/Notice to Proceed

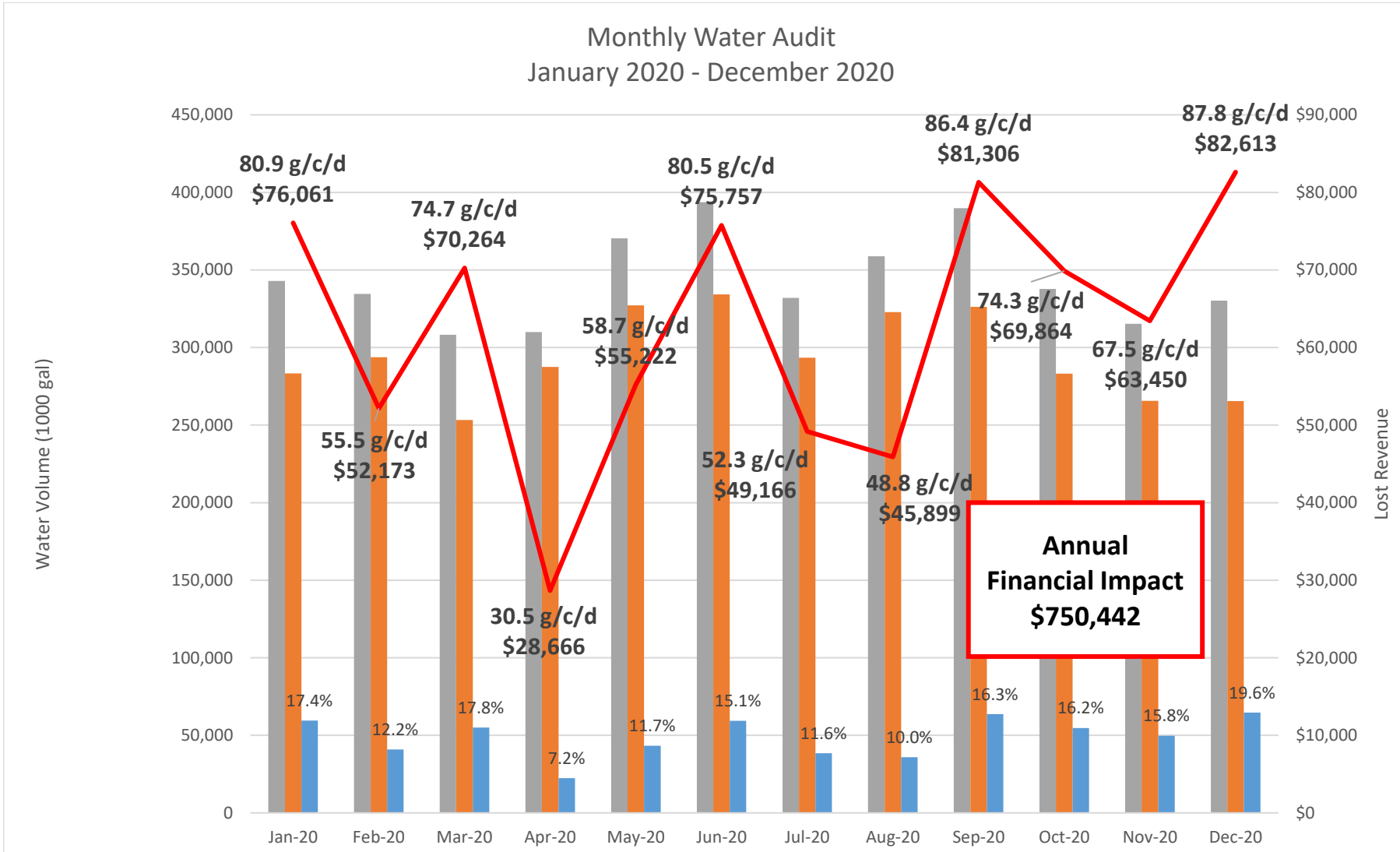
Type	Contract Number	Job Number	Title	Contractor
Services	703	20-50	Waimea Well B Repair NTP 1/11/2021	Oasis Water Systems, Inc.
Equipment	705	GS-2021-02	Emergency Generator NTP 2/08/2021	Allied Machinery Corp.
Services	627		MMIS/MPET Amendment No.3	Four Winds Group

Highlights

1. Estimated non-revenue water due to flushing and reported leaks for the month of January is 143,242 gallons

OPERATIONS PERSONNEL HOURS

	FY16	FY17	FY18	FY19	FY20	FY21
Overtime	8,128	6,749	5,889	6,122	7,012	4,744
Time-off	15,927	15,275	15,650	14,595	12,002	6,913
Regular Hours	56,629	53,605	53,745	49,705	52,742	34,131



	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
Produced	342,849	334,596	308,281	309,984	370,458	393,627	331,959	358,841	389,892	337,846	315,350	330,207
Customer Meter Read	283,286	293,740	253,258	287,536	327,214	334,303	293,457	322,898	326,223	283,136	265,663	265,514
Waterloss	59,563	40,856	55,023	22,448	43,244	59,324	38,502	35,943	63,669	54,710	49,687	64,693
Waterloss	$76,061	$52,173	$70,264	$28,666	$55,222	$75,757	$49,166	$45,899	$81,306	$69,864	$63,450	$82,613

MANAGER'S UPDATE

February 25, 2021

Pursuant to Board Policy No. 3

CONTRACTS AWARDED/EXTENSION/AMENDMENTS:

1 SECOND AMENDMENT TO CONTRACT NO. 685, JOB NO. 19-01, ISLAND-WIDE VULNERABILITY AND RESILIENCY JOB ASSESSMENT WITH BROWN AND CALDWELL FOR A CONTRACT TIME EXTENSION OF 305 CALENDAR DAYS WITH NO ADDITIONAL FUNDING

FUNDING:

Account No.	10-20-10-540-010				
Acct Description	WU/Eng/Admin/Professional Services				
Funds Available	*Verified by WWC*			$	N/A
Contract No.	685				
Vendor	Brown and Caldwell				
	Original Contract Amount	$	629,686.00		
	First Amendment	$	83,000.00		
	Total Funds Certified To Date	$	712,686.00		
Second Amendment:					
Contract Time Extension		$	0.00		
	Total Amendment	$	0.00		
Contract Amount To Date		$	712,686.00		
Fund Balance				$	N/A

BACKGROUND:

Contract NTP Date: June 10, 2019
Original Contract End Date: October 2, 2020
New Contract End Date: December 31, 2021

The DOW entered into Contract No. 685 on May 24, 2019 for the purposes of assessing the vulnerability and resiliency of the Board's thirteen (13) water systems island-wide against disasters to identify and recommend projects that will support the Board's goal of providing safe, affordable, and adequate drinking water for all water consumers of Kaua'i.

The Department has nine water systems serving more than 70,000 residents and visitors on Kaua'i, and this vulnerability assessment was undertaken in early 2019 as a proactive measure by the Department to evaluate, and if necessary, improve its system's resiliency against disasters or malevolent acts. The

County of Kaua'i has experienced significant damages associated with natural disasters including two previous hurricanes and most recently, major flooding due to storm events that have hit the island of Kaua'i. The island wide vulnerability assessment and identification of recommended projects will support the Department's goal of providing safe, affordable, and adequate drinking water for all water consumers on Kaua'i.

Concurrently, the America's Water Infrastructure Act (AWIA) 2018 law went into effect on February 7, 2019, requiring community water systems serving a population greater than 3,300 persons to conduct an assessment of the risks to, and reliance of, its system(s) from natural hazards and malevolent acts. The assessment requires that utilities evaluate the resilience of their water system's pipes, conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage, distribution facilities, electronic, computer, and other automated systems. The AWIA 2018 also requires an evaluation of the water system monitoring practices, financial infrastructure, use and handling of chemicals, and operation and maintenance practices.

First Contract Amendment:
The AWIA 2018 requires the preparation or revision of a water utility's Emergency Response Plan (ERP). Specifically, the AWIA requires that the ERP: incorporate the findings of the vulnerability and resiliency assessment, identify strategies and resources to improve the resilience of the system, include standard plans and procedures to implement, and identify equipment that can be utilized in the event of a natural hazard or malevolent act that threatens the ability to deliver safe drinking water.

The initial contract scope was to satisfy the minimum AWIA 2018 requirements; however, the DOW identified a need to reformat and overhaul its ERP, which was last updated in 2005. The current ERP (from 2005) is an invaluable tool, but needs to be presented in a manner that is useful for all staff who can be called upon to serve during an emergency. The first contract amendment added the development of the Emergency Response Plan to the scope of the contract and increased the fee and time of performance accordingly.

Second Contract Amendment (time extension only):
The DOW and its consultant for the project, Brown and Caldwell, continue to make progress on the risk and resiliency assessment as well as updates to the DOW's Emergency Response Plan in accordance with the requirements of the America's Water Infrastructure Act (AWIA) of 2018. Per the AWIA 2018, the critical deadlines related to the DOW's water systems are:

1. June 30, 2021 – completion of the Risk and Resiliency Assessment.
2. December 31, 2021 – completion of the updated Emergency Response Plan

The AWIA of 2018 requires that Utilities update and submit their Risk and Resiliency Assessment and Emergency Response Plan five (5) years from the date(s) in which they are submitted; therefore, it is not advantageous for the DOW to submit these documents earlier than the deadlines shown above per the AWIA of 2018. The DOW and its consultant, Brown and Caldwell, have agreed that it is in the best interest of the DOW to extend this contract to December 31, 2021 to allow for these two submittals to be made on or near the required submittal deadlines. There is no additional scope of work nor any changes to the contract fees for this amendment.

WAIVER, RELEASE & INDEMNITY APPLICATIONS:

None

STAFF REPORTS - FY 20-21:

PERSONNEL MATTERS

February 16, 2021

Please reference attachment.

Pursuant to Board Policy No. 24

CONVEYANCE OF WATER FACILITIES

None

CUSTOMER CARE AND BILLING (CC&B) SYSTEM *UPDATE*:

None

I.T. INITIATIVES *UPDATE:*

None

ADVISOR REPORT TO THE BOARD OF WATER SUPPLY *UPDATE*

Period ending January 31, 2021

The following is a list of tasks which the Board Advisor worked on for the DOW during the month of January:

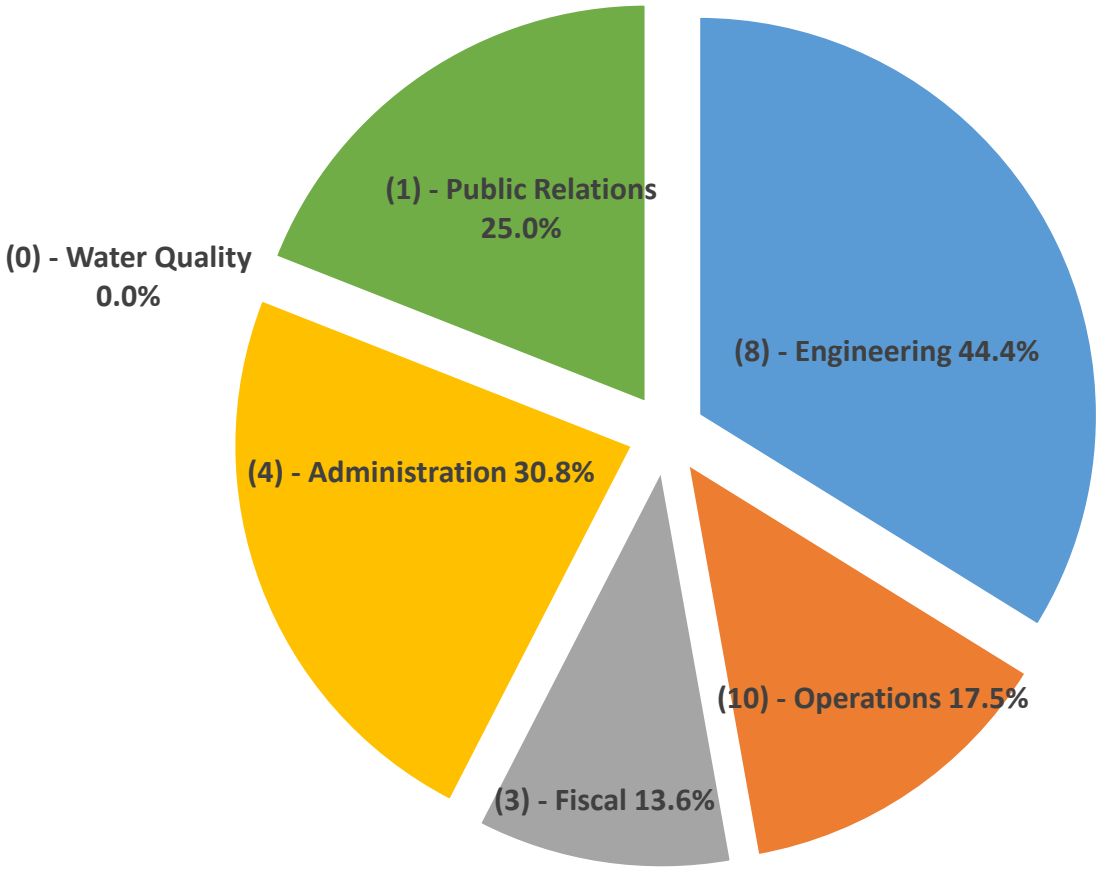
- Handled emails, calls and texts from staff
- Discussions with Acting MCE on various projects
- Prepared for and participated in DOW Board Meeting

The special services contract has been extended until June 30, 2021 with no additional funding required.

Attachment: Personnel Matters

Mgrrp/Manager's Update (February 25, 2021):mja

Personnel Dashboard



Vacancies by Division

(# Vacancies), Division, Percent Vacant

Summary

Total Authorized = 117
Total Vaccant = 26 (22%)
Actively Recruiting = 12

Highlights

1. Waterworks IT Mgr begins 4/1/21
2. One IT position filled internally
3. One WRP position filled internally