

KANALOA AT KONA  
LEAK HISTORY ASSESSMENT  
&  
RECOMMENDATION FOR LEAK  
DETECTION OPTIONS

WATER LEAK MITIGATION  
COMMITTEE REPORT

APRIL 2023

**Leaks Happen! Let's work together: Inspect, Install, Monitor and Evaluate**

## WATER LEAK MITIGATION COMMITTEE - EXECUTIVE SUMMARY

Though not the sole driver, increased incidents of water leaks at Kanaloa at Kona have contributed to a significant increase in AOA insurance rates. An Owners' committee was formed: (1) to gather data regarding previous leaks, (2) to investigate leak prevention options which could assist in reducing incidents/claims, and (3) to evaluate a proposal for a whole-property water leak detection system. An accompanying full report provides in-depth details and additional mitigation actions/suggestions.

### Summary of Process – Data Collection, Research and Analysis:

The Committee researched KAK's leak history (Aug 2017-Dec 2022) based on information provided by the Association's insurance broker, the property's GM, survey of the Ownership, and inquiry/discussion with three competitor commercial whole-property water leak detection companies -- all to assist in providing factual data to drive final recommendations.

Analysis of the research provided these key findings:

- Number of insurance claims increased over past 5 years (policy dates June-May):
 

2017-18: 3	2020-21: 2
2018-19: 2 + 1 roof	2021-22: 7 + 1 sprinkler issue resulting in claim
2019-20: 1	2022-23: 7 + exterior siding H2O intrusion (through 12/2022)
- Unit leak sources: toilets, failed valves, washing machine hoses/valves, refrigerator supply lines, under sink plumbing, A/C pan overflow, water heaters, solar hot water heaters, shower pans, fixtures, pipes in walls, roof, sprinkler lines, contactor error.
- Appliance and valve/hose leaks account for 50% of insurance claims in past five years.
- In 2021-2022, 64% of leaks reported by GM could potentially have been caught by detection sensors.
- Slow leaks that went unnoticed or ignored over a long period tended to create more damage and more costly insurance claims than larger water events that were quickly discovered and corrected, per GM.
- Also, per GM, leaks are not necessarily associated with occupancy situations (rentals vs. full-time residents vs. non-renting part-time Owners). Leaks have impacted *all* categories of Owners.
- 93 Owner survey participants reported experiencing more leaks in past five years than prior five – same trend as reported by insurance broker and GM
- Survey respondents stated most leaks were found in a within 1-10 days, often by themselves, but also by renters, neighbors and service providers
- Owner respondents replied that toilets, HVAC and kitchen sinks were the top three leak sources
- Responses from units did not indicate a significant relationship between type of unit and overall costs or timing to discover problems.
- EnviroSmarts January 2023 bid was not comprehensive, expensive up front, and required significant ongoing funding for monitoring. It provided a leak-source detection system with commercial monitoring.
- Quotes from two competitors were more comprehensive, however, more expensive than EnviroSmarts'.
- Whole property leak detection systems appear to be used more often high-rise apartment/condo buildings.

### Recommendations based on data analysis:

**The Committee recommends the AOA attempt leak detection/mitigation with lower-cost individual unit options first, ahead of more costly, whole-property methods.**

At this time, the Committee makes the following recommendations to the KAK Board:

- Commence annual plumbing inspections of each unit, with written report provided to each Owner; require Owners to complete repairs deemed necessary to prevent leaks, at their expense. Consider similar inspections for solar water-heating systems.
- Develop an opt-in program for on-site staff inspections of units that are vacant for more than a month.
- Recommend Owners install leak detection devices -- either low-tech/auditory only beepers and/or phone-app operated which notify Owners to issues -- at all water source locations in all units. A list of leak source devices reviewed/suggested is attached to the report. Because the impact of this method depends on heavy Owner participation, and because participation hinges on how easy it is for Owners to purchase/install sensors, it is suggested that:

- 1) KAK Maintenance provide installation service of the devices, for a fee pre-negotiated by the Board with Castle, if requested by Owner; and
  - 2) The Board consider offering Owners reimbursement for the cost of the detectors, or some flat-fee monetary incentive towards the purchase of water leak source detectors.
- Recommend Owners with ducted air-conditioning units install an over-flow switch on their condensate pan, and/or install a leak source detector at the pan to detect water prior to pan overflow.
  - Label main water line shut-off valves under structures by unit number, notify all staff and Owners.
  - Develop a plan that allows Owners to request the main water valve to their unit be turned off for extended vacancies. It is suggested that:
    - 1) KAK Maintenance provide this service for a nominal fee pre-negotiated by the Board with Castle, if requested by Owner; and
    - 2) KAK Maintenance offer proper education to Owners about shut-off procedure, for a fee pre-negotiated by the Board with Castle, if Owners prefer to do shut-offs themselves.
  - Conduct inspections of the entire undersides of all structures for any moisture issues, standing water and poor drainage.
  - Create and maintain inspection/repair record for each unit, to assist in follow-up inspections and insurance claims; request Owners report upgrades for unit file.
  - Provide leak detection information on the Kanaloa Communique to ensure all Owners are well educated about leak prevention devices, estimated lifetime of plumbing components, liability if their unit is the source of a leak, and protocols regarding leak claims involving insurance.
  - Publish KAK Board policy for handling AOA deductible Owner assessments, and treat such assessments consistently, per Insurance Broker recommendation.
  - Encourage Owners to verify that Loss Assessment limits on their individual HO6 policies are set at \$50K (AOAO policy deductible amount).
  - Review the number and types of leaks annually. If leak incidents do not decrease over the next two years (*allowing for implementation of above recommendations*), review the number and type of leaks to determine if additional Owner *participation* is needed, and/or if *additional* measures (identified in full report) should be layered on top of these first-step methods to further reduce incidents.
  - The Committee recommends that an expensive whole-property water leak detection system be considered only as a last resort, only after the above recommendations are implemented.

Continuing to track leak incident data and implementing the measures above should assist in early detection and prevention of the types of leaks KAK experiences most often, in a much more cost-effective way than installation of a whole-property professionally-monitored system, which tend to be leak source detection devices requiring costly professional monitoring.

This Committee has strived to provide reliable information and unbiased analysis. However, members are not professionals in the areas of plumbing, property management, insurance, the law, etc. KAK's trusted service providers can review recommendations, vendors, and product suggestions to ensure the Board is fully confident that the Committee suggestions are practical.

Respectfully Submitted by Committee Members on April 28, 2023,  
Mary Cowen  
George Papazian  
Kathy George

**Leaks Happen! Let's work together: Inspect, Install, Monitor and Evaluate**

**KANALOA AT KONA WATER LEAK HISTORY ASSESSMENT  
& RECOMMENDATION FOR LEAK DETECTION OPTIONS  
WATER LEAK MITIGATION COMMITTEE REPORT -- APRIL 2023**

**BACKGROUND:**

Kanaloa at Kona has experienced an increasing number of water leaks in the recent years. Various reasons might be attributed to the increase in leaks, such as age, lack of maintenance or updates to plumbing/fixtures. Some leaks have been small and managed without great expense or the need to file an insurance claim. Others have resulted in rather large insurance claims involving not only individual Owners' HO6 policies but also the AOA's insurance. Due to the significant increased insurance costs and number of leaks, a committee of KAK Owners was formed to investigate mitigation options for the complex.

Presently, *Hawaii State Statute* involves AOA's Insurance policy when water leak claims are filed. The costs of increased insurance coverage are passed along to KAK Owners through higher monthly Association fees. In 2022, The Board increased their insurance deductible from \$10K to \$50K and advised Owners to increase their HO6 policies to cover up to \$50K.

Water leaks are not the sole driver of insurance cost increases. *All* commercial insurance rates rose (13% in 2020 and 9% in 2021, per website [businessinsurancecenter.com](https://www.businessinsurancecenter.com), due to materials and labor costs, pandemic impacts), nonetheless, the property's water leaks have contributed to markedly higher annual insurance premiums for KAK's Commercial Property Policy – translating to an extraordinary increase of nearly 28% for KAK Owners' monthly association fees for 2023.

Numerous leak claims with our insurance carrier between 2019-22 put Kanaloa in a "frequent losses" category. The Board announced at the Q4 2022 quarterly meeting that this limited the number of carriers that would even consider underwriting a commercial property policy for our resort, leaving us with few bids for our business. The Board indicated at the Jan 2023 quarterly meeting that it is not a reach to say that, unless our resort curbs water leak claims, our property could end up being uninsurable. Managing leak claims will help our property return to "few losses" status, so our insurance broker can avail us of multiple competitive quotes, which could conceivably lower our monthly Owner's fees.

KAK is interested in products & protocols that will:

1. Detect leaks early to reduce major damage and costs to Owner units and to common property.
2. Reduce the number of insurance leak claims and reduce the size of claims.
3. Reduce impact to Owners whose units sustain damage (less damage, less cost, less time).
4. Reduce impact to Property Manager staff, freeing staff to manage other issues.
5. Reduce impact to Board Member involvement, freeing Members to manage other issues.

KAK's AOA was approached by an installer of a leak detection monitoring system (EnviroSmarts), which provided a bid in January 2023 for installing their whole-complex, remote-monitored automated (IoT- Internet of Things) product. *(What is meant by IoT devices? The Internet of Things (IoT) describes the network of physical objects—"things"—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.)*

With consent of the President of the Board, an Owners' Committee was formed to evaluate a proposal for a whole-property water leak detection system. The Committee chose to expand their efforts, reviewing KAK's leak situation in a broader context to arrive at the best data- and research-driven recommendations as possible.

The Committee approached this research from the perspective of what leak detection devices best benefit the KAK AOA 1) financially, and 2) effectively detect most commonly occurring leaks on property. Consideration of financial impact to each individual Owner, outside of monthly association fees, is of secondary concern for the purpose of this evaluation. Recommendations that shift financial burden from the AOA back to individual Owners (i.e. Owners covering the cost of plumbing repairs that could detect and prevent leaks from their unit to other units) are indeed intentional, as these better protect the AOA members in aggregate, which the Committee believes is obligation of the Board and any supporting committees.

**Committee Goals:**

1. Approach project from a research/data driven perspective
2. Review KAK's leak history to better understand the actual scope and depth of the problem, identify specific leak locations and types that cause significant losses
3. Determine what type of leak detection plan would best suit our complex
4. Recommend for/against a whole-complex (IoT) detection system and ongoing contracted monitoring (from either EnviroSmarts or a competitor)
5. Recommend alternative cost-effective leak detection options for Kanaloa
6. Provide a written report to document the Committee research for AOA records

**Research completed by Owner Committee:**

The Committee gathered data regarding previous leaks, and investigated leak prevention options which could assist in reducing-incidents/claims, as follows:

1. Obtained history of KAK's water leak insurance claims from Association's insurance broker for past six years (2017-22), and from current General Manager (for full year 2022)
2. Further studied KAK's water leak history by surveying Owners as to their experiences
3. Used Owner survey to learn what kind and how many individual-unit detection systems are already in place
4. Researched a variety of leak detection devices currently available in the marketplace (both whole-complex and individual in-unit AND high-tech and low-tech)
5. Investigated protocols that can achieve AOA goals with moderate expense
6. Provided a critical review of current EnviroSmarts bid
7. Obtained competitive bids and critically reviewed those
8. Interviewed KAK's insurance broker to understand the likelihood of commercial property premiums being reduced directly by installing a whole-property high-tech system
9. Conducted general internet searches regarding leak prevention, insurance, and other relevant topics
10. Identified methods other local condo complexes are implementing to reduce water leaks

**DATA COLLECTION, RESEARCH AND ANALYSIS:****Leak Reporting by AOA Insurance Broker and KAK GM Jim Heather**

Discussion with Kanaloa's current GM Jim Heather was very useful. He and Mary Cowen met 2/14/2023. He indicates that there are many more (fortunately smaller) leaks not requiring insurance claims that happen on the property than are reflected in statistics that would be provided by our insurance broker.

For 2022, (Jim Heather's first full year on property), no particular type of water leak or source of leak stands out. Causes vary. However, one consistent theme is that slow leaks that go unnoticed over a long period, or are not addressed in a timely manner, create more damage, and more costly insurance claims, than large water issues that are quickly observed and promptly remedied.

He states leaks are not necessarily associated with certain occupancy situations. They can arise in units where Full-Time residents are present as well as Rental/Owner Vacation units with intermittent occupancy. However, there have been examples of serious water damage, which have led to mold, in units that were unoccupied and uninspected *for many months*, indicating the importance of regular monitoring and timely response.

The pandemic lockdown was a catalyst for plumbing leaks, not just at Kanaloa but other vacation resorts, according to the Association's insurance broker representative, Mike Ayson. Building age and lack of updating plumbing components factor into increasing number of leaks. The AOA's broker's representative provided the committee a snapshot of our claims paid from 2017 through 2022, spreadsheet attached (page 33) at end of report. Quick synopsis:

1. Since 2017, there were only actually a handful of events each year. Still, this limited number has netted KAK a "frequent losses" status by insurance carrier standards.
2. There were limited claims in 2019 and 2020. However, in 2021 there were five insurance claims possibly related to vacancies due to pandemic travel restrictions
3. Our largest dollar-value claim appears to have been in 2022. This tracks because labor and materials costs have accelerated since pandemic. Appliance and valve/hose leaks each account for almost 50% of claims. Over half these leaks—64% --could potentially have been detected by in-unit leak source sensors.

Leak locations identified included:

2 - ice maker refrigerator line	1 - shower
2 - washing machine issues	1 - leaking roof
1 - toilet	1 - dishwasher
1 - kitchen faucet	1 - misaligned sprinklers
1 - pinhole leak hot water supply line	1 - contractor caused
2 - pipe burst	

#### Insurance implications of implementing leak detection protocols

Based on the Committee's conversation with the AOA's broker, Kanaloa cannot look at controlling leaks as the one sure-fire remedy to KAK's high insurance rates. Other influences contribute heavily to rate increases in the overall market, and all insureds end up bearing the costs. Note these statistics:

- Natural disasters globally cost insurers \$116B in 2021, \$140B in 2022. Insurers spread that loss across all customers' premiums. (Sources: Gallagher Re, global insurance brokerage, Natural Catastrophe Events report 2021 and Reinsurance News 1/30/23 reinsurancene.ws)
- Building materials have increased 26% in '20-'21 alone. This significantly outpaced inflation. (Source: National Assn. Home Builders Survey 2021) Simultaneously, a skilled labor shortage is contributing to higher rebuilding costs. (Source: Association of General Contractors of America 2022 Workforce Survey Analysis)
- Inflation of 8.3% '21-22 dwarfed the annual rate of .1% to 2.4% between 2012 and 2020. (Source: US Bureau of Labor Statistics Consumer Price Index)

Online articles about insurance rate trends indicate that insurance carriers are quick to point to claims as a reason to raise rates astronomically, whether for a residential policy or commercial one. But insureds cannot disregard overall market rate increases. Given the algorithms used (which factor in many criteria) and given recent extraordinary marketplace rate increases (due to carrier losses across all markets), Kanaloa should not hold any hope that installation of leak detection devices will directly and immediately lower our AOA insurance costs.

Our broker, and another agent contacted by Mary Cowen, are unable to state what portion of rising premiums rates is actually directly attributable increased claims on the part of an insured. Furthermore, in conversation with Sue Savio, Insurance Associates, Kanaloa's insurance broker, and with another agency which represents several Hawaiian AOAs (Atlas Insurance, Kona office), the Committee learned that simply installing some type of leak detection system -- either high-tech or low-tech -- will not guarantee reduced premium rates.

Our broker, Sue Savio, stated that what *could* eventually help reduce KAK's premiums is a "clean" three-year history, with zero water leak claims. This begs for better overall protocols for leak detection at our property and a layering of prevention methods.

#### Findings from Kanaloa Owners Leak Survey (Detail charts on page 34)

##### Number of Owners that responded:

We had a good response rate for Kanaloa's first online survey!

Approximately 55% of the total Ownership participated (93 Owners when double responses for units were factored out). This is quite significant because it represents a higher number of Owners than might typically be engaged in Kanaloa happenings. GM Jim Heather reported to the Committee that generally only 30% of Owners are responsive to efforts to connect.

##### Duration of Ownership:

Of these 93 respondents:

About 1/3 of Owners who participated in the survey have purchased their unit in the past five years. This signals a significant Ownership turnover. (Research into public records could confirm condo purchases for the entire complex for the same 5-year period.) The Association wants to be sure that new Kanaloans are provided clear and complete details about the complex' everyday operations, long-term planning, and the Board's stewardship efforts.

Condo use:

Of these 93 respondents:

- 66 units or approximately 71% have their unit in a vacation rental situation
- 16 units or approximately 17% use as a private vacation home
- 11 units or approximately 12% are full time residents

Leaks in prior years:

Of these 93 respondents:

The most important takeaway from this survey questions is that Kanaloa is trending toward *more* leaks, not fewer – which is corroborated by the AOA’s insurance claims over the past five years. Owners reported more leaks in the past three years (not including 2023) than in the prior five. This syncs with what our Insurance Broker and GM reported, and this was common at many Hawaii condo complexes.

Timing of leak discovery:

Of these 93 respondents, referring to all leaks over time, they reported that:

- About 1/3 of leaks were caught in a day or two
- Roughly 1/4 were caught within 10 days

That so many leaks were caught in a reasonable time is very good news.

Remember, per our GM, it is the undiscovered/slow leaks that cause the most trouble at Kanaloa.

Who discovered leaks:

Of these 93 respondents, they reported their historical leaks were caught as follows:

- About 1/4 of the leaks Owners caught themselves
- Roughly a 1/5 of the leaks were discovered by Renters
- Approximately a 1/5 of the leaks were caught by Neighbors
- Nearly 1/4 were spotted by service providers
- Remainder were reported by others

Sources of leaks:

Among this group of 93 Owners:

Source	#	%
Toilet	15	16%
HVAC	11	12%
Kitchen Sink	10	11%
Bathtub	9	10%
Water Heater	9	10%
Pipe behind wall/ceiling	8	9%
Bathroom Sink	7	7%
Shower	7	7%
Refrigerator	6	6%
Washing Machine	6	6%
Lanai	3	3%
Hot Tub	2	2%
Dishwasher	1	1%
Total	68	100%

There is not much good news when reporting where leaks occurred, except to say that at Kanaloa, the location of water heaters on lanais have probably helped prevent damage to interior living space.

Kanaloa Owners with existing leak detection system:

Among the 93 respondents:

- 19 units reported having leak detection devices
- 74 units reported NOT having leak detection devices

Only 20% are of this group already actively engaged in leak prevention

Almost 80% of this group are unprotected

Based on the information and research of the Committee, we encourage the Board and Owners to see the benefits of installing leak prevention devices and encourage all Owners to be proactive in their efforts to detect and reduce leaks.

Other Properties' Management of Leaks and Claims

Measures taken by local/Hawaii condo associations, according to Atlas Insurance Kona agent, interviewed by Mary Cowen:

- Several are conducting mandatory unit inspections with written notice to Owners, which limits AOA liability should claims arise.
- Country Club Villas is reportedly going to a single water heater in each building vs. individual one in each unit. This is not an option at Kanaloa due to the layout of our structures. But it is worth noting that other area resorts are seeking out creative solutions to leak problems.
- A general contractor who has performed condo remodels at Kanaloa informed the Committee that another Keauhou condo complex had instituted a rule that Owners must shut off the water supply to their unit if it will be vacant for more than 30 days.

The Committee suggests that, if possible, Kanaloa's GM consult with other Kona/Big Island property managers to learn about leak solutions they are implementing that could also be practical for our resort. In addition, we support frequent information sharing about leak mitigation between our GM, other Castle-property GMs and Castle's corporate engineer, so that Kanaloa can benefit from their experience and expertise.

National trends in condo association leak detection management (per internet search and phone interviews of HOA members in other states by Mary Cowen:

- Requiring Owners shut off water to units when vacant (even for 24-hours in some high-rise complexes)
- Installing whole-property leak detection systems (*but* seems to be primarily in high-rise structures)
- Installing automatic/remote shut-off valve devices at main line into units (these often require leak source sensors)
- Requiring unit inspections and recommending repairs to be completed by Owner
- Recommending individual Owners install in-unit, leak detection sensor devices with either phone app-based real-time notification or simple auditory beepers

**WHOLE-PROPERTY DETECTION SYSTEM REVIEW:**

Analysis of detection system bid from EnviroSmarts

Our Committee carefully reviewed the EnviroSmarts bid (page 18) and find it sub-optimal. Of note:

- The quote calls for shut-off valves but these are not itemized or costed out. This raises concern there will be significant charges above the bid at the time of installation.
- At only six source leak detectors per unit, this bid does not cover all leak-points in 2-3b/2ba units, which need 9-10 detectors. Again, the concern is that the actual cost of the project will exceed the bid.
- The bid covers a number of common property areas which are not historically KAK leak sites. It is unclear if reducing the scope of bid would indeed reduce cost.
- EnviroSmart's system sensors in this quote apparently do not detect moisture in drywall, a key location for potential high-expense leaks.
- The bid does not seem to permit KAK to exit the contract early.
- The bid does not allow KAK to purchase hardware from EnviroSmarts and to source monitoring services elsewhere.
- The proposal is \$57,646 to install, then \$31,800 per year thereafter (initial outlay of \$89,446 for Year 1). Again, shut-off valves are not included, and EnviroSmarts competitors identify these as costly elements.
- Given the omission of a cost line item for valve shut-offs, this bid should be treated more like a ballpark quote, and an incomplete one at that.
- This would be a very substantial line item for KAK's budget. The Committee has concerns that such a sizeable purchase would have to be funded by special assessment.



Competitive leak detection system bids

The Committee contacted three other water leak detection contractors who are listed on national insurer State Farm's website. These "preferred providers" are either water leak detector manufacturers or distributors, actively serving the condo-association segment:

- Accuated Water Security Solutions – represents many lines but suggested Alert Labs product
- DynaQuip Controls – represents many lines but suggested WaterCop product installed by Pacific Audio, Honolulu
- Greenfield Direct – manufactures PipeBurst Pro product

The specs provided to them were mostly similar to those identified in the EnviroSmart bid (# condos, approximate # sensors, etc.)

In discussing KAK's multi-structure physical layout with these representatives:

- Only one had performed an install at a complex similar to ours (4- or 6-unit structures spread out over a large parcel), with most applications of whole-property systems being at high-rise condo buildings.
- Two said that the AOA would have to hire and manage a local licensed plumbing contractor to do installs.
- One had a recommendation that, because of the layout of our complex, a cellular-based system might be more reliable than wifi-based one (but more expensive).
- Two suggested the need for a gateway unit at each building.
- Only one has a Hawaii representative (who was not particularly responsive to contact efforts).
- One quote is at \$299,092 for hardware only, no monitoring, not including some plumbing costs. The second comes in at \$225,835, again no monitoring or plumbing contractor cost included.
- All quotes should be considered "incomplete" until the installers actually do a full-scale on-site inspection of the complex and offer a revised bid base on that.

Despite both several email exchanges and long telephone conversations with representatives of all three companies, only two, the manufacturer of PipeBurst Pro and an installer of WaterCop devices, provided a written quote, both attached to the end of this report. (pages 25 & 27)

The main takeaway from these ballpark quotes, and EnviroSmart's proposal, is that a whole-complex system – one that delivers both in-unit leak sensor monitoring and alerts, plus valve shut-off when leaks are detected – seems well outside the standard budget for a condo association of our size. These are more typically installed in larger, high-rise condo buildings, per one sales rep. Kanaloa's multi-structure layout over 17 acres could make for some technical issues, per two sales reps.

A whole-complex system might be considered for the KAK Reserves Study budget in the future, but this should only be investigated and considered, if other types of leak mitigation fail to reduce KAK's water leak claims. Since no AOA purchase of this size would be made without proper due diligence of competitive bidding, if/when the Board might need to pursue a whole-complex system, the Committee advises that at least three competitors make on-site tours and submit fixed-price bids upon which a well-vetted purchase decision can be made.

**KANALOA LEAK DETECTION NEEDS BASED ON ACTUAL LEAK HISTORY AND OWNER SURVEY:**

The Committee specifically evaluated whether an automated high-tech system could detect leaks in KAK's historically problematic areas better than other low-tech/lower cost alternatives. The facts about Kanaloa's leak history do not support implementation of a whole-complex system, especially given the cost.

We see from our leak history that about half of recent claims may have been detected early had leak detector sensors been employed. KAK's use of sensors at *all* vulnerable points, such as under sinks, at toilets, at washing machines, at water heaters, etc., is important to reducing insurance claims.

The Committee learned from our Owner survey participants (93) that only about 20% of those Owners are already employing some type of leak sensors. While we can't extrapolate that percentage to all 166 condo Owners, it is probably safe to say that the vast majority of KAK Owners are not yet actively engaged in leak prevention, despite previous attempts by the Board and GMs to put the topic on their radar.

In-wall and floor-ceiling leaks add another layer of complication. Over the past four years, several of the community's most expensive leaks could not have been detected by source leak detectors because they were hidden behind walls. Neither high-tech nor low-tech sensors can detect drywall moisture. This is often where the first signs of damaging slow leaks first appear (in a ceiling from leak in a unit above, or in walls from an adjacent unit, or from underneath the structure). Owners need to be observant of all walls and ceilings, investigate promptly, and respond appropriately--in a **TIMELY MANNER**-- if any signs of moisture are evident. Thermal and "pinless" detection devices are available for purchase and would be a great tool for KAK staff and contracted plumbing inspectors to have for detecting moisture in walls. (See Page 14, "In-Wall Leak Detectors" section for more information.)

#### **RECOMMENDATIONS BASED ON DATA ANALYSIS:**

The Committee has determined that a multitude of different types of water leak monitoring must be utilized to manage Kanaloa's water leak issue. Our specific recommendations follow, and we encourage the Board to undertake as many of these simultaneous, synergistic solutions as is possible.

#### **AT THIS TIME, THE COMMITTEE RECOMMENDS THE FOLLOWING ACTIONS TO THE BOARD**

##### **1. The Committee recommends the AOA attempt leak detection/mitigation with lower-cost individual unit options first, ahead of more costly, whole-property methods.**

After much data analysis and supporting research, the Committee's position is that a whole-property automated detection system, including that proposed by EnviroSmarts, should not be considered at this time, for reasons previously stated. Instead, the Committee recommends a combination of alternative leak-prevention approaches, articulated below. The options listed are not mutually exclusive – a combination of alternatives should be used for maximum impact.

##### **2. Commence annual plumbing inspections of each unit by a qualified plumbing contractor or qualified contractor of the Board's choosing, using a standardized checklist of potential leak sources including both plumbing elements and appliance water hook-ups.**

- Promote actions authorized by *Hawaii State Statute §514B-138 -- Upkeep of condominium; high-risk components* that will make KAK structures less prone to water leaks and extensive damage. A copy of the Statute is attached at the end of this report. (page 31)
- Establish guidelines for plumbing component replacement based on highly conservative lifespan estimates of vulnerable plumbing components. Suggestions in attachment at end of this report. (page 47)
- Include inspections of solar water-heating systems for units with this feature.
- Notify Owners of deficiencies in writing and inform them of their obligation to correct those in a timely manner, per authority granted to the AOA by State Statute.
- Actively enforce the policy that Owners must complete plumbing repairs/replacements to correct deficiencies.
- Should any Owner fail to comply, the Committee recommends that the AOA use its authorization to have corrective work performed by a contractor, at the sole expense of the Owner, with reimbursement to AOA by lien if necessary, to protect neighboring units and the Association as a whole.
- Ensure the on-site Property Management's staff is "on call" 24/7 to handle KAK water leaks and detector alerts, including fielding phone calls/texts/emails from Owners with remote monitoring systems.

For scheduling simplicity and managing the workflow of Owner post-inspection contact and repair follow up, inspections could be completed in sections, such as is done with other maintenance functions like window cleaning, painting, pest control, etc.

**3. Develop an opt-in program for on-site staff inspections of units that are vacant for more than a month, for water leaks and other maintenance issues that could affect neighboring units.** Since KAK's most impactful leaks have been "slow" leaks that are go unnoticed for several months, per our current GM, regular monitoring of vacant units is imperative.

Some of KAK's most expensive claims, per our insurance broker, were in 2020 and 2021 (pandemic years), when units were vacant. The broker's account executive with whom Mary Cowen spoke, Mike Ayson, indicates that this was a pattern at other associations across the State of Hawaii (where short-term rentals are prevalent, owners don't necessarily live on property, and where units went unoccupied due to in-bound travel restrictions). He recommends regular monitoring of vacant units' plumbing, and Committee concurs, regardless if there is a pandemic lockdown or not.

The Committee recommends the Board work with our current Property Manager, Castle, to resume monthly inspections for empty units, at a pre-negotiated rate, should Owners desire. Such inspections would also prove invaluable in staving off insect, termite, and rodent issues, mold and mildew damage, and other situations that can impact neighboring units.

**4. Recommend that all Owners install leak detection devices as soon as possible** -- either low-tech/auditory only beepers and/or phone-app operated which notify Owners to issues -- at all water source locations in all units. Over 60% of recent Kanaloa leaks could have potentially been detected and responded to had such sensors been in place.

If Owners will install source leak detectors, they could be similar in effectiveness as a whole-property at a much lower cost. Leak detectors at all possible leak sources in individual units might not detect every type of leak--they are not fool proof--but this approach would be markedly less expensive than a centrally managed system.

*RECOMMENDED SENSOR LOCATIONS: water heater, washing machine, kitchen sink/dishwasher, each bathroom sink, each toilet, refrigerator waterline, lanai sink, and ALL other locations where water leaks could occur*

KAK's GM indicates that even inexpensive low-tech, auditory "beepers" are usually loud enough to be heard outside an unoccupied unit to get attention so staff can investigate. Phone-app devices with text or email alerts may be preferable to some Owners. The Committee identified both types of leak source devices currently on the market, and is providing a list of options/product features to assist Owners in selecting detectors for their units. (page 43).

Because the impact of this mitigation method depends on significant Owner participation, and because participation hinges on how easy it is for Owners to purchase/install sensors, it is suggested that:

1. KAK Maintenance provide installation service of the devices, if requested by Owner, for a fee pre-negotiated by the Board with Castle/Management; and
2. The Board consider offering Owners reimbursement for the cost of the detectors, or some flat-fee monetary incentive, towards the purchase of these important water leak source detectors.

Recommend Owners with traditional compressor-style ducted air-conditioning units install an over-flow switch on their condensate pan, and/or install a leak source detector at the pan to detect water prior to pan overflow, since these types have been the source of leaks at KAK. Even though "split" type units have not been a leak source at Kanaloa, the potential still exists for leaks. This type of A/C system does have a condensate tube running from each wall unit to outside the structure, which could possibly become clogged. Therefore, the Committee recommends Owners be especially diligent in watching for signs of water damage at each wall-unit for this type of system.

**5. Label main water line shut-off valves under structures by unit number, and notify all staff and Owners of location under structure.** In a water emergency, both staff and Owners should be prepared to cut the water supply to a unit. If any structure's valves are not easily accessible by staff/Owners (deep under building), the AOA should have placement of the valve station relocated to a more suitable and access-friendly location. Should a unit have a leak, these valves must be maintained in working order to stop water flow immediately. Replacement of corroded, aged valves could potentially save a small leak from becoming a bigger problem. The Committee recommends annual inspections of each unit's main shut-off valve, and adherence to a replacement policy based on valve age and functionality. Based on internet research as to lifespan of a main line valve, any that are corroded and/or do not turn on/off very easily, and those older than 10 years, are candidates for replacement.

**6. Develop a plan that allows Owners to request the main water valve to their unit be turned off for extended vacancies.** This helps address slow leaks in unoccupied condos. Other condominium associations routinely implement a requirement of this type. In high-rise complexes, a common rule is that water be turned off if the unit will be vacant for as little as a 24-hour vacancy. Since KAK does not have a high-rise situation, it is suggested that:

1. If requested by Owner, KAK Maintenance provide this service for a nominal fee pre-negotiated by the Board with Castle.
2. Requests to KAK Maintenance for this service be communicated via the Work Order form on the Communique.
3. If Owners prefer to do shut-offs themselves, KAK Maintenance offer proper education to Owners about shut-off procedure, for a nominal fee pre-negotiated by the Board with Castle. Maintenance might even consider creating a video (possibly post to YouTube, link on Communique) that Owners could refer to. Printed directions developed by Maintenance and the GM would be also helpful.

**7. Conduct inspections of the entire undersides of all structures for any moisture issues, standing water and poor drainage.** A 2021 leak was the result of water creeping from underneath a structure into a unit's drywall directly above (as the Committee understands, due to an irrigation issue). This created substantial damage and remediation. To prevent future leaks of this sort, the AOA should be identifying risky situations underneath buildings that are created by either rainwater or irrigation issues. Concurrent to these inspections, all debris, such as old construction materials, trash, rodent waste, etc., could be removed from under each structure, to promote drainage, air circulation, and a generally healthier environment.

The Committee further suggests that the Board consider the formation of an Irrigation Leak Committee, which, like the Leak Detection and Mitigation Committee, might research solutions to Kanaloa's irrigation leak and related water waste problem.

**8. Create and maintain inspection/repair record, and a water leak "log" for each unit and for common areas, to assist in follow-up inspections and possible insurance claims.** Survey Owners to determine when their unit's critical plumbing components were last replaced. Request Owners report upgrades for their unit file. Request that Owners report ALL leaks observed at KAK – major or minor, in their own unit, in common areas, from irrigation. Develop an on-line reporting form accessible through the Kanaloa Communique to make it easy for Owners to participate.

**9. Provide detailed leak detection, mitigation, and related insurance information on the Kanaloa Communique.** Provide and post relevant materials for Owners regarding leak detection and prevention devices, estimated lifetime of plumbing components, their personal liability if their unit is the source of a leak, and KAK protocols regarding leak claims involving insurance. It is the Committee's belief that, if Owners clearly understand the risks of not properly maintaining their plumbing, they are more likely to take leak prevention actions.

The **"Insurance Information for Owners"** document posted in 2022 is due for an update and expanded with coverage of the leak mitigation topic. In addition to an update to reflect the AOA's current \$50K commercial policy deductible, it could be broadened to thoroughly explain how the AOA Master policy and Owners' HO6 policies interact in the case of claims, especially water leak claims, and Owner responsibilities in maintaining their units to avoid unnecessary risk.

The Board should continue to communicate to Association Members that Owners alone are responsible for plumbing within their units, and provide clear explanation assigning maintenance responsibility for the main line from the exterior unit valve and for the valve itself. Clarification to Owners on this point is critical. Castle's Renette Carpio provided the Committee with the following excerpt from Kanaloa's Declarations regarding assignment of plumbing maintenance.

"...excerpt from Section D, Subsection 1 of Kanaloa's declarations noted below. Service lines running through an apartment serving more than one apartment is deemed common element and therefore an AOA expense. If it serves specifically one apartment, it is an element of said apartment and an owner's responsibility. The same principle applies to the shut off valve controlling the utility water line to a single apartment."

Except as specifically otherwise provided in this Declaration, an apartment shall not be deemed to include the undecorated or unfinished surfaces of the perimeter walls or interior load-bearing walls, the floors and ceilings which surround each apartment or any pipes, wires, conduits or other utility or service lines running through such apartment which are utilized for or serve more than one apartment, the same being deemed common elements as herein provided. Each apartment shall be deemed to include all of the walls and partitions which are not load-bearing within its perimeter walls, the inner decorated or finished surfaces of all walls, floors and ceilings, all lanais, all windows and glass walls at the perimeter of the apartment and all fixtures and appliances originally installed therein for its exclusive use. Said fixtures and appliances consist of: refrigerator/freezer, range with self-cleaning oven, microwave oven, garbage disposal, trash compactor, dishwasher, water heater, washer/dryer, wetbar with refrigerator, drapes and carpets.

The Committee further encourages the Board to develop a written summary about claims management procedures and post it to the Communique. In conversing with several Kanaloa Owners, the Committee came to understand that there is a general lack of understanding as to how the AOA manages insurance claims. While each claim is unique, a step-by-step description or a flowchart detailing how the Board, Property Manager and the AOA's insurance carriers interact with Owners and their HO6 policy carriers, posted to the Communique, could alleviate misunderstandings and complications in filings.

**10. Publish KAK's policy for handling AOA insurance deductible assessments against Owners, and treat such assessments consistently.** Kanaloa's Insurance Broker's representative, Mike Ayson, informed the Committee that, by *Hawaii Statute*, condo associations in Hawaii have three options for handling the AOA's master policy deductible assessments to Owners, according to current State Statutes.

A copy of the Statute is attached to this report. (page 32)

HRS§514B-143(d) states that... "the board, in the case of a claim for damage to a unit or the common elements, may:

(d) The board, in the case of a claim for damage to a unit or the common elements, may:

(1) Pay the deductible amount as a common expense;

(2) After notice and an opportunity for a hearing, assess the deductible amount against the owners who caused the damage or from whose units the damage or cause of loss originated; or

(3) Require the unit owners of the units affected to pay the deductible amount.

Per our insurance broker's representative, "It is important to treat the assessment of the deductible consistently to avoid other issues such as discrimination claims".

If the KAK Board does not already have an official, written policy for this, the Committee recommends that the AOA remedy this oversight promptly. Since this policy could impact Owners significantly, we suggest that the AOA Membership be surveyed to provide input to the Board on this topic, and then the Board create a written policy that reflects the majority's preference.

Whether it is an already-established policy (suggest the Board identify date of adoption) or one that will be newly crafted, the Association's deductible assessment policy should be posted to the Communique website, so all Owners can be assured that insurance claims cases will be handled consistently and fairly.

The Committee suggests that, in addition to the current Association's "**Summary of Insurance**" being posted to the Communique, the current full Master Policy also be made available to Owners through the Communique. This will benefit all Owners as they can provide it to their insurance agents to ensure individual HO6 policies dovetail with the Association's policy to provide each Owner the best level of insurance protection. The Board should also consider posting the Directors & Officers policy as well.

**11. Encourage Owners to verify that their Loss Assessment limits on their individual HO6 policies are set at \$50K (to match AOA policy current deductible amount).** Even though the Board wrote Owners on this topic fairly recently in 2022 when the commercial policy deductible was raised from \$10K to \$50K, Owners may still not understand the importance of selecting correct Loss Assessment limits on their condo's HO/HO6 policy.

In addition to the *"Insurance Information for Owners"* post on the Communique, it is recommended that the Board add a document which details how critical it is that Owners match their homeowner's policy Loss Assessment limits to the AOA's commercial policy deductible amount. The Committee has obtained a good general description of loss assessment coverage from a national insurance carrier, RLI (which insures in Hawaii), which is attached (page 48) to this report. Either this or a similar description chosen by the Board could be shared with the AOA's membership.

The Committee also recommends that any condo pre-purchase information packet that Kanaloa's AOA provides to prospective purchasers include the most updated *"Insurance Information for Owners"* document.

**12. Review the number and types of leaks annually, adjust mitigation efforts accordingly.** This goal can be more easily accomplished if the Association develops a standardized leak reporting form and an improved record-keeping system so KAK's leak management history can be readily examined, and so there is no loss of information between the Property Manager's GMs and their successors.

It is suggested that annually, a review and survey be completed to record the number and source of leaks, and number of unit Owners who have installed leak detectors to determine progress toward the recommendations. Ultimately, the goal is that a significant majority of units will have installed leak detectors and leak incidents will decrease. If leak incidents do not decrease, allowing for implementation of above recommendations, then review the number and type of leaks to determine if 1) *additional Owner participation* is needed, or 2) *additional measures* (suggested below) should be layered on top of first-step methods to further reduce incidents.

#### **POSSIBLE ADDITIONAL FUTURE MEASURES:**

**The AOA could discuss increasing the Commercial Property policy deductible from the current \$50K limit to \$75K with the AOA's insurance broker.** Higher AOA policy deductibles is an increasingly common path to limiting claims against Associations. Because of how the State Statute is written, increasing deductibles effectively shifts responsibility for major claims to individual Owners, from an AOA. When KAK's insurance broker, Sue Savio, was asked about increasing this deductible, she confirmed that this *could* decrease the premiums at least a little up front. Other clients of hers are using this tactic effectively to reduce claims, one high-rise client even setting their commercial policy deductible at \$500K.

The fewer insurance claims filed against the Kanaloa's commercial policy, the better for the AOA and Owners as it may keep the AOA insurance costs from significant increases. While no claims to date have exceeded the \$50K deductible, it is possible that it could happen in the future. A \$75K AOA deductible would give the Association a comfortable buffer.

A shift of this type need not be seen as too heavy a burden on KAK Owners. When the AOA's deductible was raised from \$10K to \$50K in 2022, the incremental Loss Assessment coverage was surprisingly inexpensive, in some cases less than \$100. The Committee spoke to several Owners and none spoke of experiencing sticker-shock when they made this adjustment.

Committee member Mary Cowen suggested to our insurance broker, Sue Savio, that the cost for higher Loss Assessments limits on an individual's HO/HO6 policy might be seen as *inexpensive* versus the per-owner contribution towards extraordinarily high AOA Commercial Property premiums. She agreed with that assessment. An insurance agent with Atlas Insurance Kona, which represents other Kona condo association clients, explained that, for now, the HO6 carriers have not yet raised rates to combat this trend of higher AOA deductibles. Of course, carriers will likely charge higher premiums as this trend grows, but KAK might consider taking advantage of this marketplace situation while it is not extremely impactful to Owners.

**LONGER-TERM CONSIDERATIONS FOR LEAK PREVENTION:**

Related to this leak detection project, the Committee has identified four additional areas for the Board's future consideration or research, if the current (above) suggestions are not providing significant reduction in detection, damages, or insurance claims, and if the types of leaks warrant this need:

**In-Line Flow Meters:**

These came up in Committee discussion, however, at this time, further investigation is recommended. In addition, consultation with plumbing experts is recommended, 1) to determine if an in-flow meter is sensitive enough to detect pinhole leaks, and 2) to develop a methodology to install and test for in-pipe leaks in a pilot program.

The Committee has identified the following possible source for flowmeter devices, however, plumbing experts should be consulted: <https://www.grainger.com/category/pumps/pump-controls/flowmeters>

**In-Wall Leak Detectors:**

The AOA could investigate and consider purchasing in-wall leak detection devices to be used by the Property Manager's onsite staff and contracted plumbers, to help diagnose in wall leaks. If access to one of these devices helps stop even one "slow leak" event from turning into a major damage issue costing many thousands of dollars, the detector cost could seem like a bargain.

The Committee has identified two devices that detect in-wall leaks, without damage to drywall:

1. Teledyne-FLIR has a pin or pinless moisture meter and thermal imager: <https://www.flir.com/products/mr265/>
2. Ultrasonic leak detector: [Ultrasonic Water Leak geophone Sensor, Ds-7000 Leak Detection Sensor](#)

We are not making a recommendation for either of these specific products, but that this *type* of device should be researched and investigated by KAK's Property Manager's Engineering Department and Kanaloa staff. We suggest that Castle's team identify competing device types and brands, compare features/reviews, and purchase of one or more of these devices, to test on-site if it fits the needs of the property.

**Copper Pipe Viability:**

Fortunately, KAK had only one leak issue from in-wall copper pipe (pinhole leak) in 2022. However, since the KAK development is now 40+ years old, we can likely expect future in-wall pipe failures.

Copper pipes are typed by thickness: M-Type (with green markings) are considered to have a lifespan of 20-50 years. Thicker L-Type (blue markings) are supposed to last roughly 50 years. Thickest K-Type (red markings) reportedly last 50 years plus.

The Committee recommends that the AOA Board have our property management company conduct a visual inspection of all structures to create a pipe type(s) inventory, so weak points can be identified and more carefully monitored. What type of copper pipes are installed at KAK, and where? Is there a mix of types (thicknesses/quality)?

As part of this inventory, documentation should be made of which buildings have shared hot-water lines with a single shut-off valve that controls hot water to all units. If an Owner of one of the units with a shared hot-water line turns the shut-off valve, they are actually turning off the hot water to all the units in the building. Owner education regarding this would be useful.

**Water Heater Replacement:**

While this is technically outside the parameters of this project, this topic came to the Committee's attention as other items were researched. There are newer, more efficient hot water heaters on the market today, including tankless and heat pump water heaters. However, their initial costs are higher, and typically they have different wiring requirements, which may not be feasible in the units. Perhaps the AOA might investigate installing a heat pump water heater in the Laundry Facility, as a test case to determine if electric power costs are reduced. These pumps are markedly more energy efficient than traditional water heaters, but with energy cost savings of potentially 40% over traditional water heaters, this investment could be quite practical for the laundry facility.

Currently, Hawaii Electric Company is offering instant rebates on the installation of these highly efficient units for private residences.

[https://hawaiienergy.com/for-homes/water-heating/heat-pump?utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=hpwh&gclid=EAlaIqObChMI7J\\_h\\_rmV\\_QIVaNz9BR38ZwmyEAEYASAAEgJ8tvD\\_BwE](https://hawaiienergy.com/for-homes/water-heating/heat-pump?utm_source=google&utm_medium=cpc&utm_campaign=hpwh&gclid=EAlaIqObChMI7J_h_rmV_QIVaNz9BR38ZwmyEAEYASAAEgJ8tvD_BwE)

**LEAK DETECTION AND MITIGATION FUNDING:**

The Committee has not delved into the funding of the above recommendations, except for our recommendation that Owners who do not fulfill their obligation to keep their unit's plumbing/appliances in a condition that limits leak risk to others be held individually accountable, as is permitted by State Statute.

In essence, the Association has let the Owners individually "manage" leak detection on their own up to this point. Unfortunately, the lack of a concerted effort has contributed toward KAK's leak frequency trending upward. The Committee is encouraged that the Board is prepared to fund an AOA-driven mitigation effort (2023 budget's \$75K+ line item for **Plumbing**, presumably for a whole-property leak detection system) and supports funding ongoing mitigation in future years. However, unless the Association wholeheartedly leads the mitigation effort with overt actions that serve the Ownership as a whole (therefore, AOA-funded), it's probably unlikely that individual Owner behavior will change, and KAK's leak trend will continue to disappoint.

**The Committee recommends the Board not eliminate or re-direct 2023 funding of leak mitigation efforts just because a whole-property system is not the best choice at this time.**

Whether specific actions (unit inspections, etc.) are funded by the AOA as a service to the membership, or paid for by individual Owners, should be debated by the Board.

The Committee encourages the Board to consider the following factors when discussing leak prevention and mitigation expenditures:

1. Committee Members believe past plumbing inspections of units may have been an Association expense in prior years. It is in the best interest of the entire Membership to resume these. Inspections are helpful for Owners who don't know what to look for or what to do.
2. The potential for KAK to reduce the number of leak claims, thereby putting the AOA in a better position to possibly enjoy reduced insurance premiums after three years of a "clean" record.
3. The enormous cost of installation of a whole-property detection system, which the Board provided for in the 2023 budget, which would likely be in the six figures. If Owners will install source leak detectors, the approach could be similar in effectiveness as a whole-property system at a much lower cost. Leak detectors at all possible leak sources in individual units might not detect every type of leak--they are not fool proof--but this approach would be markedly less expensive than a centrally managed system.
4. The cost to incentivize Owners to employ leak detector sensors in their units (perhaps by crediting them some percentage of the purchase price) would be far, far less costly than a whole-property system. To incentivize conforming to policy, AOA could consider:
  - Credits to Owners for purchase of multiple auditory alarm (beeper) units (perhaps limit to \$75?) and perhaps even a once-a-year replacement battery credit (limit to \$25?)
  - Credits to Owners for portion of purchase price of individual remote-monitoring system (perhaps limit to \$150?) and perhaps a one-a-year replacement batter credit (limit to \$25?)

**CONCLUSIONS:**

The Committee believes that some combination of methods described above will put Kanaloa in a better position to thwart leaks and the unfortunate expenses they generate. Some of these protocols are labor intense and the expense might not be easy to estimate initially. The Board and our Property Manager will have to thoroughly plan details. But this Committee truly believes that the layering of low-tech and human-performed preventative measures will afford KAK a better result than installing an uncomfortably expensive whole-property detection product.

While insurance claim information provided general types of sources of leaks, specific information related to the total dollar value of each individual claim was not clear, therefore, the true costs of recent Kanaloa leaks remains unknown. These could be considerably higher than has been recorded by the Association's insurance broker and our GM. Unfortunately, the claims list provided by insurance company does not itemize amounts covered by deductible, amounts paid over deductible, amounts not covered or declined.

This Committee has strived to provide reliable information and unbiased analysis. However, committee members are not professionals in the areas of plumbing, property management, insurance, the law, etc. KAK's trusted service providers can review recommendations, vendors and product suggestions to ensure the Board is fully confident that the



Committee suggestions are practical. Furthermore, we suggest that individual Owners review recommendations provided and choose options that best suit their individual circumstances.

We found Owners to be responsive to our electronic survey on this matter, with 55% participating. This is especially significant because GM Jim Heathers assessment that roughly only 30% typically respond to his inquiries and communications. Clearly, Owners are anxious to offer information and opinions, as long as the Association makes it easier for them to do so and they feel the Board is taking their input seriously. For most Owners, anything accomplished online is a time saver, and encourages more participation. We do hope the Board sees the tremendous value of using online surveys to cost effectively improve Owner input and to save money on mailings and manual tallies.

We hope that, through this group's work, Board members see the inherent value of Owner Committees. We would like KAK's Association to be able to rely on other Owner Committees to "do the legwork" on special projects. Owner Committee written reports will also help provide a better chronology of KAK projects and reference points for future needs or revisions.

The Committee members appreciate the opportunity to be of service in this way, and sincerely hope future owner committees will be formed to compliment Board efforts to lead Kanaloa.

Respectfully Submitted by Committee Members on April 28, 2023,  
Mary Cowen  
George Papazian  
Kathy George

**Leaks Happen...Let's work together: Inspect, Install, Monitor and Evaluate**

**REPORT ATTACHMENTS:**

EnviroSmarts Detection System quote

WaterCop Detection System/Pacific Audio & Communications quote

PipeBurstPro Detection System/Greenfield Direct quote (Two parts)

Hawaii Revised Statutes 514B-138 - Upkeep of condominium; high risk components

Hawaii Revised Statutes 514B-143 - Insurance

2017-22 KAK Water Leak Insurance Claims and 2022 Reports to GM

KAK Owner Survey Results

Leak Detection Device Information (Two Parts)

Estimate Lifespan of Key Plumbing Fixtures and Appliances/Accessories

RLI Insurance Company Loss Assessment Summary

**Commercial Bid Information**  
**EnviroSmarts Detection System quote**



**Kanaloa at Kona**

**Water Leak Detection & Alerts**

**166 luxury units**  
**6 sensors in each unit**  
**&**  
**Auto-Shutoff Valves**

**JANUARY 17TH, 2023**

By  
**EnviroSmarts**

Point of Contact

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## Water Leak Detection

EnviroSmarts is pleased to provide our Water Leak Detection system to Kanaloa at Kona. The purpose of this scope of work is to point out what is to be expected from the system so that Kanaloa at Kona can press forward with rolling out the EnviroSmarts technology to provide early water leak detection and greatly reduce the occurrence of any flood or insurance claims.

The selected property is multi-building luxury condominium building complex. EnviroSmarts would distribute our sensors at key locations of risk throughout each unit as well as mechanical and electrical areas. This distribution of sensors will also create a strong mesh network of coverage to protect the building and tenant spaces.

A small EnviroSmarts cellular network gateways will be mounted in a telco or mechanical closet to ensure the alerts are propagated to our cloud server over our cellular network.

EnviroSmarts project managers will work with Kanaloa at Kona facilities managers to designate key locations for deployment of each sensor as well as, which sensor will be paired with our water rope that extends the coverage area up to 20 feet by connecting multiple lengths together.

EnviroSmarts will also make available our temperature & humidity + motion technology in each sensor to be installed. This abundance of technology allows management to validate water leak conditions or minor leaks that may be causing rot and black mold behind walls. Additionally, our motion telemetry allows another level of features that provide asset tracking along with details of mechanical movement on the premises (doors, pumps and machinery).

The following brief introductions just scratches the surface at the true essence of each project scope, but the success of these types of undertakings relies on the open cooperation of EnviroSmarts and the property managers and staff. Once Kanaloa at Kona has selected the sensor plan and functions that best fit the facility objectives, we can deploy all systems as soon as sensor names (naming convention) and alerts (email and text /escalation process) is agreed upon.

This document outlines installation options that demonstrate a unique solution crafted to meet the building requirements that is unique to each property.

We thank you for allowing us the opportunity to share these short outlines and how we will make a measurable difference to Kanaloa at Kona.

Success Through Service

*Peter McIntosh*

Per your request EnviroSmarts submits the following detailed Statement of Work for your review and consideration.

**Customer Request / Site Information / Project Overview**

**Purpose:**

- Installation of Water Leak Detection and environmental monitoring sensor alert solution.
- See "**Schedule A**" for floorplans and sensor suggestions.

**Kanaloa at Kona HQ: Information:**

- Affiliate Name: **Kanaloa at Kona**
- Address: 78-261 Manukai St.
- City/St/Zip: Kailua, HI 96740
- Contact: Jim Heather JHeather@castleresorts.com
- Office: (808)322-1008
- Cell:

**Kanaloa at Kona Jobsite Information:**

- Affiliate Name: **Kanaloa at Kona**
- Address: 78-261 Manukai St.
- City/St/Zip: Kailua, HI 96740
- Contact: Jim Heather JHeather@castleresorts.com
- Office: (808)322-1008
- Cell:

Optional sensor pricing has been included to allow the property management flexibility in adding sensors and accessories where they feel they will gain the most benefit.

In the future, it is very easy to add sensors to the site and local maintenance personal are more than capable to deploy the new sensors as we ship with labels and network configuration set to each customer site.

**Envirosmarts Gateway & Cellular Network w/ Mesh Topology**

The Envirosmarts sensors create their own mesh network, with batteries installed the network begins to form and has no single point of failure. Each sensor in the mesh network relays information and acts as a router to ensure that the information reaches the final destination. The sensors have a compact design with built in 5+ year batteries.

**Envirosmarts Site Evaluation and Conditions**

**Task 1.1: Much of these can be conducted via photos and telephone interviews with facilities management.**

**Envirosmarts** Labor and materials support services to perform an **In-Depth, Comprehensive Onsite Physical Site Survey** of this property destination layout, power and maintenance closets with power outlets for the few network points. Also identify and test best practices for linking or extending the mesh network signal throughout the property to the LTE cellular network.

- Overall Space/Measurements, Ceiling Height & Type, Quantity and location of boilers, heat pumps, AC units / heaters, key water transport systems, elevator basements sump pumps, tenant kitchen appliances.
- Identify all standard room types with attention to surface mounting, behind appliance application of Envirosmarts water rope and our WLD sensor under sinks, AC units and hot water heaters.
- Identify type of installation for the Envirosmarts NEMA box that protects our mesh network gateway and cellular gateway solution. Location. (Wall-Mount), (120 power to be identified and tested)
- The mechanical closet will require (01) dedicated electrical outlet and a space 11x14 wall space for our dedicated communications (LTE cellular) and UPS system for backup.
- In campus environments examine exterior building mounting points for mesh network extension modules to assist in bridging communications from the sensors to their gateways.
- Obtain consent to attach mesh networking modules on exterior or overhang areas from property management.

**Task 1.2:** EnviroSmarts will provide Technical Labor and Material Support Services to Assemble / Install **EnviroSmarts Water Leak Detection Sensor w/ Temp & Humidity + motion Alert-WLD-Type-2: 3.6" x 1.53" x .9"**



*pictured with water-rope extension*

- |   |                   |
|---|-------------------|
| 1) EnviroSmarts <b>Water Leak Detector Sensor</b> -Temperature & Humidity+ motion | <b>996</b> pieces |
| 2) EnviroSmarts <b>Water Rope</b> Sensor extension and detection 10"- 39" length  | <b>322</b> pieces |
| 3) EnviroSmarts complete <b>Gateway solution with LTE cellular networks</b>       | <b>4</b> pieces   |

**Task 1.3:** EnviroSmarts will provide Technical Labor and Material Support Services to Assemble / Install in the following areas. Property management will help decide where the water leak sensor is placed. Here are atypical locations.

Key identified locations on the property primarily concerning the following areas:

At all key identified locations on the property primarily concerning the following areas:

1. Dishwashers- Kitchen sink area with water rope (required)
2. Refrigerators-
3. Water Heaters- if inside or over living spaces-Water rope (required)
4. Clothes Washing machines
5. Bathrooms-Angle stop location
6. Bathroom sinks – under counter
7. A/C condensation tray- water rope required
8. Mechanical rooms- all designated floor plan areas.
9. Pool pumps- shared storage areas that are exposed to flooding
10. Boilers- Sump Pumps- areas prone to flooding if a pump fails
11. Electrical access rooms, telecom, and IT areas Breakrooms HWH, janitors' closets etc.
12. Sprinkler system, storage areas, pumps, exposed areas to freezing
13. Common Laundry rooms

**Task 1.4:** EnviroSmarts will provide Technical Labor and Material Support Services to Assemble / Install and **configure all sensors, extenders and Gateways into the dashboard alert solution**

- **Naming convention to be agreed to by management. Kanaloa-205-Refridgerator** (designates client and location. **Kanaloa at Kona Unit 205 kitchen refrigerator**
- Each sensor will have a thermal label as identification with QR code and be entered into the Kanaloa at Kona branded Dashboard for the mesh network management.
- Each sensor will be set to identical Network ID's, Encryption codes and sleep modes. All alerts (SMS and emails) will be sent to the individuals selected by management and can be configured in the cloud dashboard. In addition, full alert integration can be provided directly into an existing **trouble ticketing system**.
- On-site staff members will be trained on the Hot Swap capabilities and a laminated card with instructions will be left onsite in a protected labled case.

**Task 2.0:** EnviroSmarts will provide **(ALL) Final Project Mandatory Deliverable Documentation and Quality Assurance Photo Examples** upon completion including the following:

- Quality Assurance Photos: Photo documentation is a mandatory requirement for Validation and Quality Assurance purposes and are to include photos of Typical Sensor installation / Build of Gateway box with cellular device / mesh extender photos / standard water rope deployment / WLD deployment and mounting with anchors and zip ties.
- Validation: That the site was installed as directed and outlined in the "Detailed" Statement of Work provided by EnviroSmarts. Including equipment settings for alerts and escalation procedures.

## Fee Schedule

**Hardware Investment – Network and Installation & Monthly Subscription**

### Kanaloa at Kona –166 Units

\*Subscription fees include Hardware & Software maintenance/ battery replacement / telephone support and on-site backup "hot swap" replacement inventory. Kit includes pre-preprogrammed sensors and water-rope.

\*\*All asset tracking and services are complementary but covered under this maintenance program. A full complement of sensors is suggested to achieve proper asset tracking.

**Hardware investment with installation pricing totals**

### Total Materials & Installation Services

**Network Gateways (4)** four cellular Gateways with battery backup and cellular redundancy **\$2,800.**

**Water-rope (166 units)** extends the functionality of a sensor to broaden coverage. These will be deployed wherever condensation or leaks from multiple systems could happen. This allows one sensor to cover 1' to 20' (feet). Water rope is required for dishwashers, some refrigerators, water heaters and with AC condensation trays.

332 pieces x \$19.95. ea. **\$6,623.**

**Water Leak Sensors-**( 6 sensors) **996** sensors price @ \$49.95 \$42.00 **\$41,832.**

*Each sensor has two water leak detectors, temperature, humidity, and motion detection for asset tracking and security monitoring.*

1. Dishwashers- Kitchen sink area with water rope (required)
2. Refrigerators-
3. Water Heaters- if inside or over living spaces-Water rope (required / suggested)
4. Clothes Washing machines
5. Bathrooms-Angle stop location (two)
6. Bathroom sinks – under counter
7. A/C condensation tray- water rope required
8. Mechanical rooms- all designated floor plan areas.
9. Pool pumps- shared storage areas that are exposed to flooding
10. Boilers- Sump Pumps- areas prone to flooding if a pump fails
11. Electrical access rooms, telecom, and IT areas Breakrooms HWH, janitors' closets etc.
12. Sprinkler system, storage areas, pumps, exposed areas to freezing

Consider adding- WLD Sensors to cover all: common areas restrooms, common area laundry, staff breakrooms-refrigerator / sinks, water heaters, dishwashers and freeze sensors for attic spaces with pipes as requested.

**Included:** Hot-spare-kit with preprogrammed sensors w/ water rope for on-site replacements and additions.

**Installation:** labor, logistics, project management, data entry, custom labels, and network deployment services. Customized cloud "dashboard" - On-site training of staff and maintenance personnel. (Price reflects – All cellular network setup and site management training to fully understand administration of alerts.)

Based on similar installations with water rope and sensors	\$8,134	\$6,391.
<i>Geographic location and room access- play an important role in installation</i>		

<b>Total installed price</b>		=====
		<b>\$57,646.</b>





**Payment Terms and Conditions**

**Hardware investment upon project authorization-** (50% deposit (\$28,823.) **\$57,646.**  
Sensor Hardware, Cellular Network, and Configuration.  
**Monthly Subscription** fees for Water Leak system @ \$2.5 per sensor /mo.

**Monthly fee breakdown**

**Gateway monthly:** 4 Gateways (LTE) \$40 ea. **\$ 160.**  
**Sensor subscription:** \$3.-Ea. \$ 2.50 / ea. 996 sensors **\$ 2,490.**

• **Monthly Subscription** **Total MRC** **\$ 2,650.**

**60 Month Hardware lease option:** monthly fees \$3,790. (58 months thereafter \$2,650)  
First and last payment required to start, plus installation fees. \$8,671.  
Installation: \$6,391, monthly hardware lease \$1,140, monthly subscription \$2,650.

**Subscription fees includes** Hardware Maintenance, batteries, labor to exchange all batteries, monthly LTE Cellular Network charges, custom Alerts via SMS and emails. Full access to site "Dashboard" analytics, reports, asset tracking and security monitoring.

API's to BMS or trouble ticket system is available for quotation and with full integration for interoperability.

**Acknowledgement and Acceptance of EnviroSmarts Equipment**

*EnviroSmarts maintains its obligations set forth in the Standard Terms and Conditions of Sale and will not, under any circumstances, assume liability for any incidental damages, indirect or consequential, arising from the sale, resale, use or misuse of its products.*

*The purchaser(s) accept their responsibility as the sole judge(s) of the adaptability of the product for the intended use.*

*I, the undersigned, have read and agreed to the above reference Statement of Work and its Terms and Conditions. My printed name, signature, date of execution and purchase order number below hereby authorizes (Affiliate) to proceed for the price indicated.*

**Kanaloa at Kona:**

- Affiliate Name: **Kanaloa at Kona**
- Address: 78-261 Manukai St.
- City/St/Zip: Kailua, HI 96740
- Contact: Jim Heather JHeather@castleresorts.com
- Office: (808)322-1008

Authorization Signature \_\_\_\_\_ Date \_\_\_\_\_

Thank you once again for this opportunity to be of service. All of us at EnviroSmarts LLC are proud to offer you the highest quality Water Leak Detection & Alerts Solution in the industry. Prices are subject to review thirty (30) days after proposal date. Shipping & handling with local taxes / VAT not included in this pricing.

Success Through Service,

*Peter McIntosh*

EnviroSmarts. LLC

Confidential

833-8-SENSOR

7

**Commercial Bid Information**  
**WaterCop Detection System/Pacific Audio & Communications quote**

**Service Order**



**Pacific Audio & Communications, Inc.**  
 1587 Haleukana St. #101  
 Lihue, HI 96766  
 United States  
 808-320-8463  
 office@pachawaii.com

Number: **4282**  
 Start: **3/7/2023 7:30:00 AM**  
 End: **3/7/2023 9:30:00 AM**  
 Resources:

**Kanaloa at Kona**  
 78-261 Manukai St  
 Kailua-Kona, Hawaii 96740  
 808-545-3510

**Contact**

**WaterCop Installation**

Description
Supply and install approx 175 WaterCop systems, One per unit to include: 1 each WaterCop Pro Kit with 25' cable and Pro Acuator 1 each 1' lead Free WaterCop Brass Ball Valve(installation by a Plumber not included) 8 each WaterCop Pro MultiSense Hub(wireless transmitter) 8 each WaterCop Pro Leak Sensor Cable 1 each WaterCop SmartConnect. This is a preliminary quote for budget purposes only and is subject to change.

Notes
Item not included 1) Existing Internet WiFi service per unit with a 2.5Ghz WiFi signal along with the current password. 2) Installation of the Valve and actuator(by a plumber), with the ability to run the power/communication wire to the Pro Kit located in the unit. 3) Sensors to be with-in 50 feet of the Pro Kit radio. If concrete walls construction is involved repeaters may be needed. 4) Easy access to sensor locations if appliances need to be moved additional time may be needed. 5) Access to a complete building at a time, so one building can be completed at the same time. 6) Power outlet by the Pro Kit location. 7) Freight not included will be charged at the time of ordering.

**REPAIR**

QTY	LOCATION	COMPONENT ID	NAME	CATEGORY	NOTES
No Repair Items					

**LABOR**

QTY	DESCRIPTION	FIXED	HRS	UNIT PRICE	TOTAL	TAX	WTY	NOTES
500	Installation labor, trim phase.	\$0.00	1.0000	\$180.00	\$90,000.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
80	Professional on-site project supervision and management.	\$0.00	1.0000	\$180.00	\$14,400.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
80	System programming of a user interface (remote) or processor.	\$0.00	1.0000	\$180.00	\$14,400.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**PRODUCTS**

QTY	NAME	DESCRIPTION	UNIT PRICE	TOTAL	TAX	WTY	NOTES
175	- : WATER DETECTOR [SM]	System Per Unit 1 each Pro Kit with 25' cable 1 each 1" Valve 8 each Sensors with cable 1 each Smart Connect 16 each AA batteries	\$1,290.49	\$225,835.75	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

# Service Order

\* Tax shown is estimated tax only. Actual tax will appear on invoice and may be slightly different.  
I hereby acknowledge satisfactory completion of the work listed above.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Total Labor	\$118,800.00
Total Products	\$225,835.75
Big Island Tax (4.7120%)	\$5,597.86
Big Island Tax (4.7120%)	\$10,641.38
<b>Total *</b>	<b>\$360,874.99</b>





[www.GreenFieldDirect.com](http://www.GreenFieldDirect.com)  
[www.PipeBurstPro.com](http://www.PipeBurstPro.com)

GreenField Direct LLC  
PHONE: 402.944.7123  
FAX: 866.466.5325  
[info@greenfielddirect.com](mailto:info@greenfielddirect.com)  
Mail Address:  
14015 238th Street  
Greenwood, NE 68366

Account Rep     Jeremy Murphy  
Phone             (402) 944-7123  
Email              [info@greenfielddirect.com](mailto:info@greenfielddirect.com)

**Choice of Forum.** Customer consents to the venue and personal jurisdiction of the District Court of Cass County, Nebraska as the exclusive forum for resolution of any dispute arising under or in any way relating to this agreement or Customer's use of the Products referenced herein or Customer's relationship with Supplier. As such, Customer will not raise, and waives, any defenses based on venue, inconvenience of forum, or lack of personal.

**Return Policy.** Any return of the products referenced herein may be subject to **restocking fee up to 25%** and must be returned within 30 days.

**Shipping Terms.** FOB - Free on Board, Greenwood, Nebraska  
"Free on Board" means that the seller delivers the goods on board the carrier nominated by the buyer at the named shipping dock in Greenwood, Nebraska. The risk of loss of or damage to the goods passes when the goods are on board the carrier, and the buyer bears all cost from that moment onwards.  
-Insurance: If you require insurance for your goods you must either contract that within your own organization or play the carrier directly.

**Sales Tax.** All sales are taxable sales unless customary provides documentation to the contrary as required by the sales tax codes of Customer's state.

*Counter signature if required by purchasing organization:*

Signature & Date \_\_\_\_\_ Print Name & Title \_\_\_\_\_

Fax or Email signed proposal to 866.466.5325 or [info@greenfielddirect.com](mailto:info@greenfielddirect.com).  
[www.GreenFieldDirect.com](http://www.GreenFieldDirect.com)  
[www.PipeBurstPro.com](http://www.PipeBurstPro.com)



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 14015 238th Street  
 Greenwood, NE 68366

Account Rep Jeremy Murphy  
 Phone (402) 944-7123  
 Email [info@greenfielddirect.com](mailto:info@greenfielddirect.com)

#### Customer Information

Account Name	Kanaloa at Kona	Created Date	4/10/2023
		Expiration Date	3/24/2023
		Quote Number	00001061

#### Billing and Shipping Address Information

Bill To Name	Kanaloa at Kona	Ship To Name	Kanaloa at Kona
Billing Address	78-261 Manukai Street Kailua-Kona, HI 96740 United States	Shipping Address	78-261 Manukai Street Kailua-Kona, HI 96740

Product Code	Product	Sales Price	Quantity	Total Price
RS500	Relay Switch	\$296.00	175.00	\$51,800.00
WVK10	WaterValve, 1", 2-piece, SS, NSF61	\$294.00	175.00	\$51,450.00

Subtotal	\$103,250.00
Discount	0.00%
Grand Total	\$103,250.00

#### Agreement Terms:

**Authorization.** By signing this below, I certify that I am an authorized representative of Customer and vested with the authority necessary to obligate Customer pursuant to the terms set forth in this agreement.

**Enforceable Contract.** The signature of Customer's authorized representative creates a binding, enforceable, and irrevocable contract thereby obligating Customer to purchase the products referenced herein pursuant to the terms and conditions set forth in this agreement.

**Payment.** Unless otherwise agreed to in writing on a separate form provided by Supplier, Payment or Purchase Order from Customer to Supplier is due in full before Supplier is obligated to ship the products referenced herein to Customer.

**Credit Card Payments.** Credit Card payments are subjected to a 3% processing fee.

**Disclaimer of Potential Damages.** To the extent permitted by law, Supplier shall not be liable to Customer or any other third-party for indirect, special, incidental, tort, economic, cover or consequential damages in connection with or arising from this agreement or Customer's use of the products referenced herein.

**Disclaimer of Warranties.** To the extent permitted by law, Supplier disclaims any and all warranties of merchantability, fitness for a particular purpose, and all other warranties, express or implied, in connection with or arising from this agreement or Customer's use of the products referenced herein.

**No Third-Party Beneficiary.** This agreement does not create any rights in any third-party. Supplier hereby disclaims any obligation or warranty with respect to any third-party including, but not limited to, any of Customer's individual employees or students, in connection with or arising from this agreement or any third-party's use of the products referenced herein.



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-Insurance: If you require insurance for your goods you must either contract that within your own organization or play the carrier directly.

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Signature & Date \_\_\_\_\_ Print Name & Title \_\_\_\_\_

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[www.GreenFieldDirect.com](http://www.GreenFieldDirect.com)  
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**Hawaii Revised Statutes 514B-138**  
**Upkeep of Condominium; High-Risk Components**

## 2022 Hawaii Revised Statutes

### Title 28. Property

### 514B. Condominiums

### 514B-138 Upkeep of condominium; high-risk components.

**Universal Citation:** [HI Rev Stat § 514B-138 \(2022\)](#)

**§514B-138 Upkeep of condominium; high-risk components.** (a) The board, after notice to all unit owners and an opportunity for owner comment, may determine that certain portions of the units, or certain objects or appliances within the units such as washing machine hoses and water heaters, pose a particular risk of damage to other units or the common elements if they are not properly inspected, maintained, repaired, or replaced by owners. Those items determined by the board to pose a particular risk are "high-risk components" for the purposes of this section.

(b) With regard to items designated as high-risk components, the board may require any or all of the following:

(1) Inspection:

(A) At specified intervals; or

(B) Upon replacement or repair by the association or by inspectors designated by the association;

(2) Replacement or repair at specified intervals whether or not the component is deteriorated or defective; and

(3) Replacement or repair:

(A) Meeting particular standards or specifications established by the board;

(B) Including additional components or installations specified by the board; or

(C) Using contractors with specific licensing, training, or certification approved by the board.

(c) The imposition of requirements by the board under subsection (b) shall not relieve unit owners of obligations regarding high-risk components as set forth in the declaration or bylaws including, without limitation, the obligation to maintain, repair, and replace the components.

(d) If a unit owner fails to follow requirements imposed by the board pursuant to this section, the association, after reasonable notice, may enter the unit to perform the requirements with regard to such high-risk components at the sole cost and expense of the unit owner, which costs and expenses shall be a lien on the unit as provided in section 514B-146. Nothing in this section shall be deemed to limit the remedies of the association for damages, or injunctive relief, or both. [L 2004, c 164, pt of §2; am L 2005, c 93, §7; am L 2006, c 273, §23]

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**Hawaii Revised Statutes 514B-143**  
**Insurance**

There is a newer version of the Hawaii Revised Statutes ↓

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## **2013 Hawaii Revised Statutes**

### **TITLE 28. PROPERTY**

#### **514B. Condominiums**

#### **514B-143 Insurance.**

**Universal Citation:** HI Rev Stat § 514B-143 (2013)

**§514B-143 Insurance.** (a) Unless otherwise provided in the declaration or bylaws, the association shall purchase and at all times maintain the following:

*(Section of this Statute relating to deductible assessments against AOAO members):*

(d) The board, in the case of a claim for damage to a unit or the common elements, may:

(1) Pay the deductible amount as a common expense;

(2) After notice and an opportunity for a hearing, assess the deductible amount against the owners who caused the damage or from whose units the damage or cause of loss originated; or

(3) Require the unit owners of the units affected to pay the deductible amount.

**2017-2022 KAK Water Leak Insurance Claims and 2022 Reports to GM**

**Insurance Policy Year: June – May**

**Kanaloa at Kona Water Leaks : Aug 2017 - Dec 2022 Data Obtained from: Insurance Agent, Kanaloa GM**

Policy Year June - May	# Claims or Reported	Insurance Claim Date	Source/Cause	# units Involved / Damaged	Insurance Claim Paid
2017-2018	3	8/15/17	Pipe burst (Insufficient info)	1	\$ 5,694.52
		10/14/17	* Ice maker line failure (upstairs unit)	2	\$ 17,094.45
		5/2/18	Water damage when a contractor was doing work on buidling. The contractor turned off the water, uncapped bathroom water lines and turned the water back on.	1	\$ 14,566.52
2018-2019	3	6/29/18	Pipe burst (Insufficient info)	2	\$ 3,037.79
		11/20/18	Leaking roof	1	\$ -
		12/13/18	* Washing machine leak	2	\$ 7,798.50
2019-2020	1	3/26/20	* Kitchen Faucet leak. Vacant unit at the time	1	\$ 32,947.14
2020-2021	2	10/5/20	* Washing machine supply line	1	\$ 21,545.60
		2/23/21	* Broken dishwasher	1	\$ -
2021-2022	8	6/4/21	* Refrigerator supply line leak	1	\$ 21,895.98
		6/20/21	Misaligned water sprinklers	1	\$ -
		10/5/21	Shower Leak (Insufficient info)	1	\$ 13,195.64
		10/18/21	* Leak from guest toilet of upstairs unit	2	\$ 24,163.45
		5/2/22	In wall pipe - hot water supply line pinhole leak. (upstairs unit) See NOTE below	2	\$ 8,700.26
				Insurance Paid Claims	19 units \$ 170,639.85
7	7/14 - 50% instances detectable by typical water leak source detectors (Appliance or valve/hose)				

**2022 Water Leaks Reported by GM**

Policy Year June - May	# Reported	Date	Source/Cause	# units Involved / Damaged	Reported Cost by GM
		2/18/22	* Ice maker water supply line	2	\$ 4,020
		4/16/22	* Ice maker water supply line - caught early No damage	2	\$ -
		4/27/22	* Ice maker water supply line	2	\$ 1,941
2022-2023	8	8/8/22	* Toilet overflowing unattended	2	\$ 1,552
		8/10/22	AC not draining - Contained inside the unit	1	\$ 250
		8/10/22	* Guest Bathroom Toilet - minor damage Toilet Seal	2	\$ 500
		8/21/22	* Sink water supply line burst in primary bathroom	2	\$ 6,386
		11/17/22	* Toilet leak at tank	2	\$ 7,412
		10/4/22	Small leak coming from Shower Pan (upstairs) No damage	2	\$ -
		10/13/22	AC not draining	2	\$ 2,507
		12/23/22	Water intrusion from exterior siding/wind driven rain No damage	1	\$ -
7	*7/11 - 64% instances detectable by typical water leak source detectors				

Total Claims	25	*14	14/25 = 56% *Instances potentially would have been detected with source leak detectors Not included in %: A/C overflow.....Suggest installl Overflow Float, Or possibly w/leak detector at pan
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**NOTE: 5/2/22 Duplicate item: Ins Claim \$8700.26 / GM listed as \$19,317 / Included in Insurance Claim list**

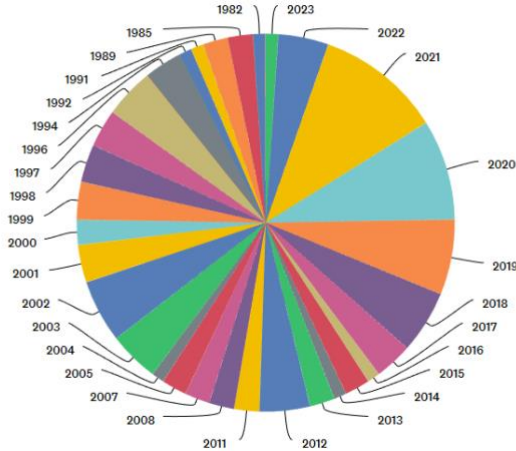
# Occurrences	Source
2	Pipe Burst (no additional info)
5	Icemaker/Refrigerator Supply Line
1	Contractor Caused
1	Leaking Roof
2	Washing Machine/Supply Line
1	Kitchen faucet ( Fixture, Valve, Hose?)
1	Dishwasher
1	Misaligned Water Sprinklers
2	Shower Leak
4	Toilet Caused
1	In wall-Pinhole leak
2	A/C not draining
1	Bathroom Sink Supply Line (Valve/Hose?)
1	Exterior Siding
25	Total

**KAK Leak History:** Leaks in 20 different buildings during the period reported, impacting 38 units

**KAK Owner Survey Results**

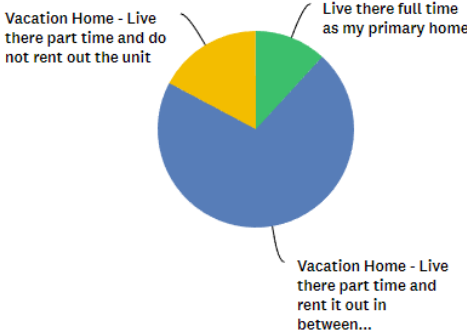
In what year did you purchase your unit?

Answered: 93 Skipped: 0



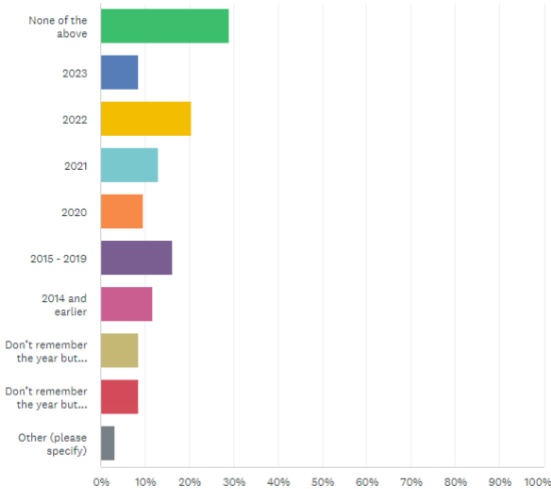
I use my unit in the following way:

Answered: 93 Skipped: 0



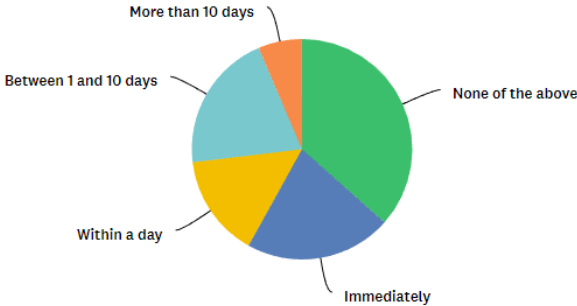
I have had a leak in my unit in year(s): (Check all that apply)

Answered: 93 Skipped: 0



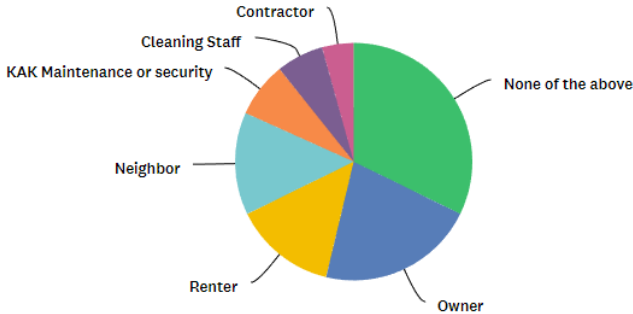
How quickly was the leak discovered? (If there were more than one leak, please respond with details in the "Other" selection.)

Answered: 93 Skipped: 0



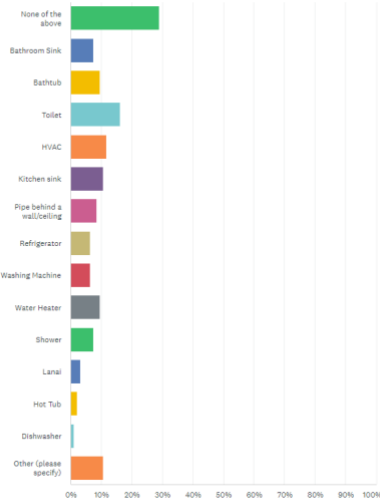
### Who discovered the leak?

Answered: 93 Skipped: 0



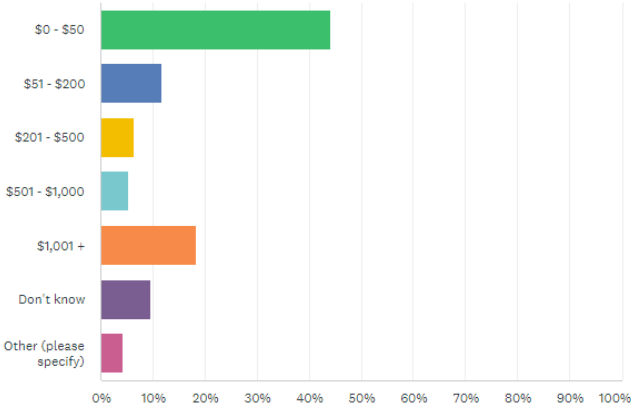
### Where was the leak? (Check all that apply)

Answered: 93 Skipped: 0



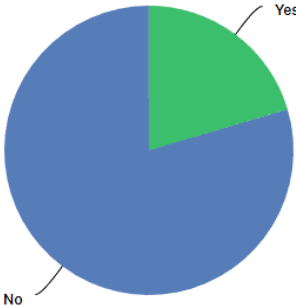
What was the approximate cost to repair the leak?

Answered: 93 Skipped: 0



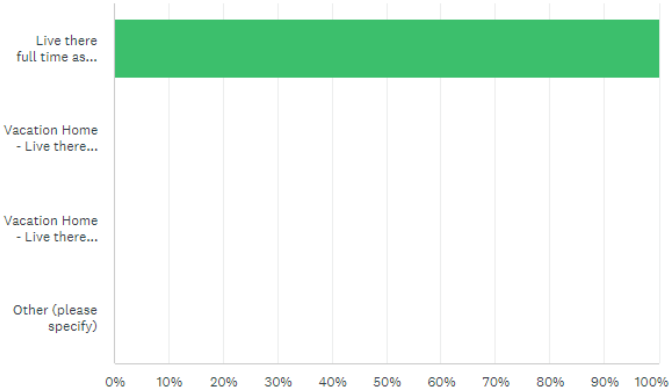
Do you currently have a leak detection system?

Answered: 93 Skipped: 0



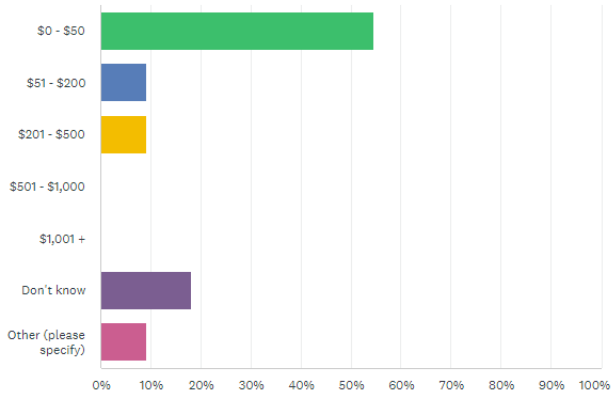
I use my unit in the following way:

Answered: 11 Skipped: 0



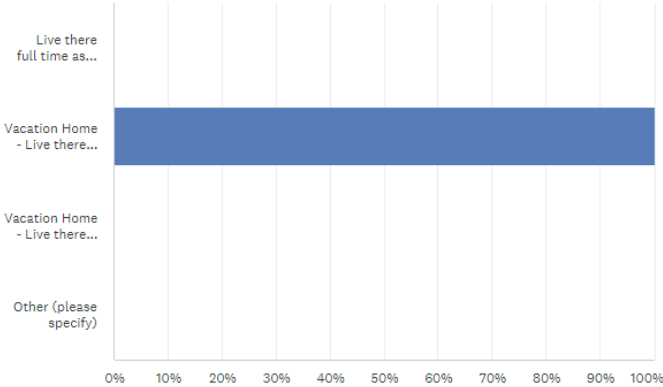
What was the approximate cost to repair the leak?

Answered: 11 Skipped: 0



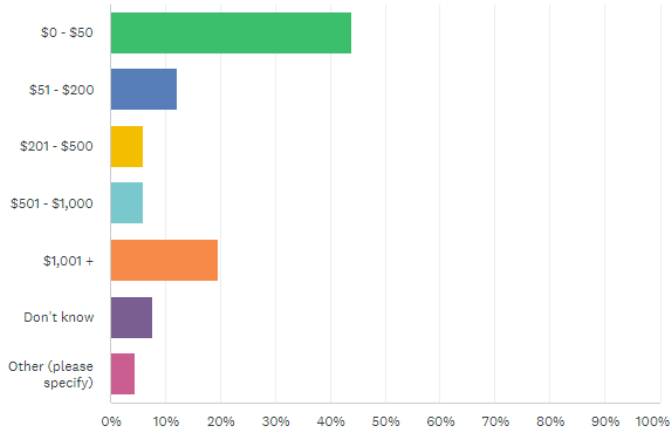
I use my unit in the following way:

Answered: 66 Skipped: 0



What was the approximate cost to repair the leak?

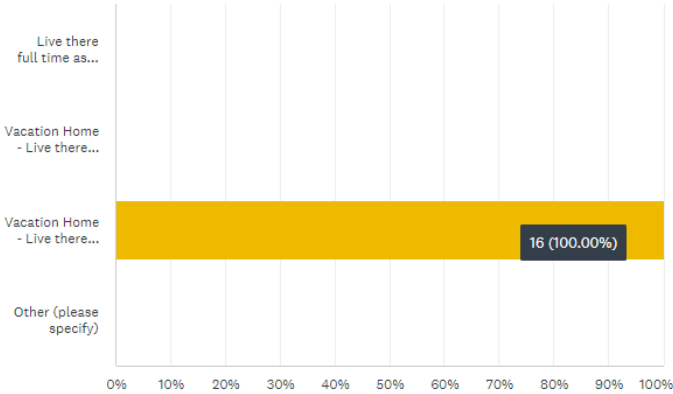
Answered: 66 Skipped: 0





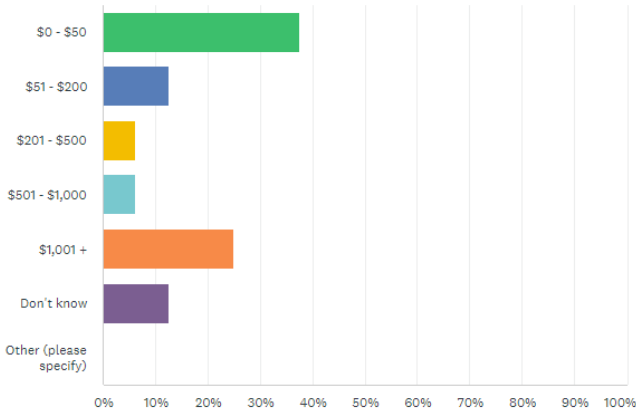
I use my unit in the following way:

Answered: 16 Skipped: 0



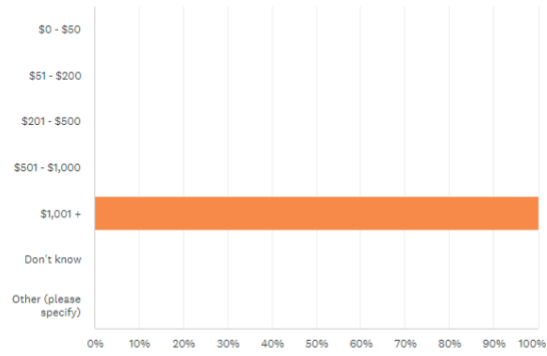
What was the approximate cost to repair the leak?

Answered: 16 Skipped: 0



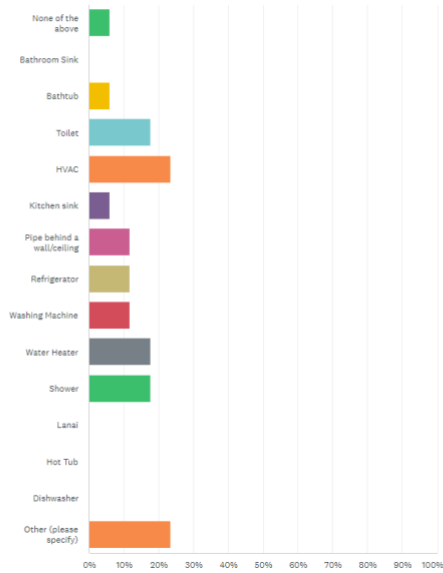
What was the approximate cost to repair the leak?

Answered: 17 Skipped: 0



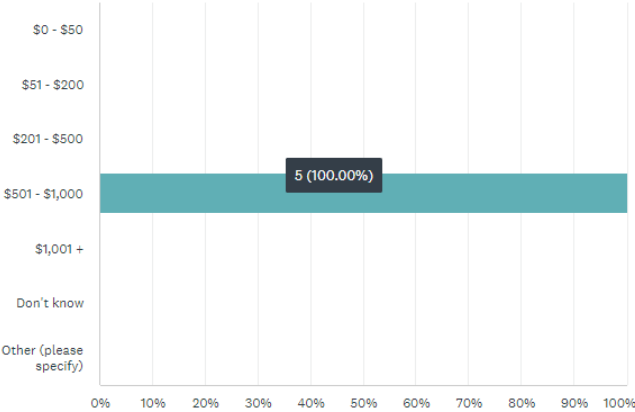
Where was the leak? (Check all that apply)

Answered: 17 Skipped: 0



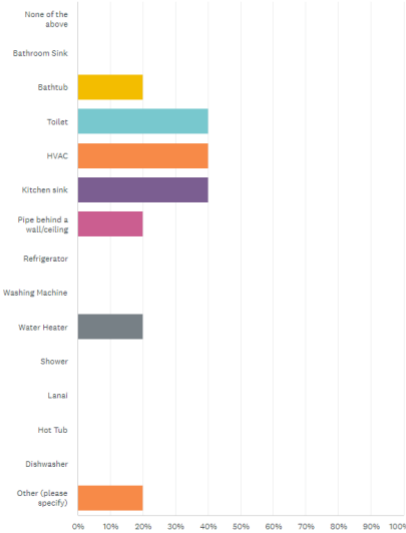
### What was the approximate cost to repair the leak?

Answered: 5 Skipped: 0



### Where was the leak? (Check all that apply)

Answered: 5 Skipped: 0



## Leak Detection Device Information – Spreadsheet

### Leak Detection Suggestions – Spring 2023

**Note:**

Links to Devices are active on the following Description Pages and on a separate Pdf document posted on the Communique, titled “Leak Detection Devices\_Links.pdf”

	Plumbing Inspection w/ proactive valve/fill line replacement schedule (Eg., 1-5 yr plan)	Sensor Point source (eg.,valve locations)				Shut-Off Valve Add to Sensors	FLOW Meter on water line	Flow Based/Hybrid Whole house/Waterline System		Water Pipe Leak Detector
		<a href="#">Screamer Flood Buzz Set of 6</a>	<a href="#">GoVee Kit + 3 sensors (3pk w/Hub + 5pk sensors)</a>	<a href="#">(1) YoLink 4 Valve Sensors, Starter Kit, old hub, Add 3 Sensors</a>	<a href="#">(2) YoLink Starter Kit 3 Sensors, w/Speaker Hub</a>			<a href="#">(3) Yo-Link Kit, Valve, Controller,Bulldog Hub, 4 sensors</a>	<a href="#">Flow Meter on water line .5 gal/min or less</a>	
<b>*Estimated Cost:</b>		\$40 (6 sensors)	\$105 (8 sensors)	\$130 (7 sensors)	\$120 (6 sensors)	\$400 (4 sensors)				\$2,190
Less than \$150/unit		\$20 (3 sensors) \$40 (6 sensors)	\$105 (\$99 sale)	\$80 sometimes on sale Addl sensors 3/\$50	\$70 Addl sensors 3/\$50	Addl sensors 3/\$50	Seemed primarily for landscaping/hoses, outdoor use. Not as accurate for small leaks, geared more to total water usage when used on pipes.	\$450 (sale) \$550 reg	<a href="#">\$300 No shut off, (\$250 sale)</a> <a href="#">\$579 w/shut off</a>	
\$251-\$500						\$399				
\$500-\$1000										
Professional Install Required	No	No	No	No	No	No		recommended		No
Maintenance Install/Use	Yes	Yes	Yes	Yes	Yes	Yes		Probably		Yes
Owner Install/Use	Yes	Yes	Yes	Yes	Yes	Yes		No		No
Name location on sensor/app		Yes	Yes	Yes	Yes	Yes		?		
# of Sensors capable	as needed	up to 10	200 devices?	200 devices?	200 devices?	200 devices?		?		
<b>Detection Location</b>										
Point of Source (Valve)	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
In-Wall Leaks								Yes	Yes	Yes
Automatic Shut-Off (Y/N)	No	No	No	No	No	Yes		Yes	Option	
Optional Automatic Shut-Off	No	No	\$219 *TBD Add Water valve controller & Bulldog	\$219 *TBD Add Water valve controller & Bulldog	Yes	Yes		Learning curve for leaks approx 3 wks, inconsistent	Need more info	No
<b>Notification</b>										
Sound Alert	Yes	Yes	No	Yes	Speaker Hub extra			Yes		Sound to locate leak
Text/Email - App	No	Yes	Yes	Yes	Yes			Yes		
<b>Connectivity</b>										
Internet-Wi-Fi	No	Yes	Yes	Yes	Yes	Yes		Yes		
LoRa (Radio Freq) between sensors to Hub			Yes			Yes				
<b>Power Source</b>										
Battery- SENSORS	CR-2	AAA	AAA	AAA	AAA	AAA		CR123A		AA
A/C Electric (Hub/Gateway)	No	Yes	Yes	Yes	Yes	Yes		A/C Required		12V DC
<b>Control Method</b>										
App	No	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
D2D (device2device)	No		Yes	Yes	Yes	Yes				
KAK Maintenance	No									Yes
<b>Monitoring:</b>										
Owner	Audible Alert	Yes/App	Yes/App	Yes/App	Yes/App	Yes/App		Yes/App	Yes/App	No
Maintenance										Yes
Subscriptions	No	No	No	No	No	No		\$5/mo protection plan	No	No
<b>Customer Service</b>										
	No	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
<b>Rating Reviews</b>								Learning curve for leak detection approx 3 wks, inconsistent, Moen Site: Poor Reviews Amazon:4/5 1064 reviews	Need more Info 2.6/5 Customer Reviews 29 reviews Limited Website Reviews	Probably requires training. Might be useful with Plumbing Inspections by expert. Recommend further review before purchase.

**Note:** Re: Estimated Cost: Amazon and Vendor prices may vary. (Cost in March 2023)  
 Bundle and configuration of number of sensors may vary by needs.  
 Prices may or may not include shipping. Some Ratings based on specific bundle

## Leak Detection Devices – Information/Descriptions

### Leak Detection Suggestions/Reviews

#### **Beeper: Audible Sound Alert Only**

[The Flood Buzz Water Leak Detector \(Set of 3\)](#) \$20

[The Flood Buzz Water Leak Detector \(Set of 6\)](#) \$40

- Protect your home from water damage by placing the leak alert in any place that has potential flooding or leaks.
- A simple device that will quickly alert your household or offices to flooding in its vicinity. A loud (95db) alarm sounds with direct water contact and won't stop until removed from the water. The flood sensor is easy to install with no wiring and set-up required.
- The water leak alarm is designed to help mitigate damage and avoid associated liabilities and legal exposure to landlords and management companies caused by a water leak.
- Place the Flood Buzz Sensor on the ground near at-risk areas like washing machines, boilers, laundry area, refrigerator, dishwashers, under sinks, next to toilets, by water heaters to detect leaks. No additional batteries are required, and the device can be manually tested and reused throughout its 3-year lifespan. (1 CR-2 battery in sensor)
- Easy installation – battery already inside – just place it and the Flood Buzz will let you know when and if you have a water leak. All Flood Buzz Leak Alarms have a “Replace By” date printed on the product. For best protection, replace the entire unit by that date.
- FLOOD BUZZ – Trusted by homeowners for over 10 years

#### **Leak Detectors with Audible Alert and App Alert**

**Govee** No Valve Shut off Option

Cost: Range @50-\$100 for 3 to 8 sensors, Hub, Adjustable Audible sound, App, Alert/Notifications Can install up to 10 sensors with Hub/Gateway

Several Bundle options

1. [Govee – 3 Pack Sensor w/ Gateway/Hub](#) \$55 (sometimes sale \$47)

2. [Govee – 3 Pack Sensor w/ Hub and 5 pack](#) Sensors \$105 (sometimes \$99 sale)

Additional Sensors:

[Govee 5 Pack](#) \$43-49

[Govee – 2 pack Sensor](#) \$23

2-AAA batteries/sensor (included) May need replacement annually

Up to 10 sensors can be added with Hub (installed at electrical outlet)

- Real-time Alerts: Connect the gateway to WiFi, and the water leak detector will instantly send emails, App notifications & alerts to your phone when water leakage occurs even if you are not at home. Water sensors and gateway are paired right out of the box.
- Loud Alarm with Mute: If WiFi is not temporarily available, the 100dB water alarm is loud enough to be heard. Press the Mute button to silence the alarm when you find the leak.
- Drip and Leak Alerts: Water sensor comes with 2 groups of back water detector probes & 1 group of front probes for pipe dripping detection. Use the App to name each sensor with its location.
- Connects to Multiple Sensors: WiFi connection gateway has a stronger and more stable signal transmission & lets you connect with multiple sensors simultaneously (10 max). Remember to upgrade your latest firmware on Govee Home App when updates become available.
- IP66 Waterproof: The completely sealed IP66 waterproof design allows for extended use in high moisture areas. Note: The water leak detector only support 2.4G WiFi, not support 5G WiFi.
- Wireless and Easy to Use: No wire or setup required; the mini size allows you to put it on any place where the water leak may be happening. With kit “B07QP153GT”, you are able to monitor leaks on your phone even you're not at home.”B07QP153GT” not Included in Package of 5 sensor pack.
- Adjustable Alarm Audio: Each water leak detector features an 0-100 dB adjustable alarm audio. Loud enough to be heard even if leak happens in basement, press the button to mute the sound when you find the leaking place.
- Low Battery Alert: The water sensor alarm will beep and flash a red light when a battery is low, or press the button on it to test the battery level.
- IP66 Waterproof: The completely sealed waterproof design allows for extended use in high moisture areas.

**Sensors with App Alerts, Optional Valve Controller, Bulldog, Speaker Hub**

**YoLink: Multiple configurations available (# sensors, hub vs speaker hub)**

1. [Starter Kit w/ 4 Sensors, & Hub](#) (\$80...sometimes on sale \$63)
2. [Starter Kit, 3 Sensors, w/Speaker Hub](#) \$70

**YoLink w/ Shutoff**

3. [YoLink Water Leak Protection Kit: 4 sensors, Hub, Valve Controller Bulldog](#) \$400

[YoLink Speaker Hub](#) \$30

[YoLink Sensors 3 pack](#) \$50

Operates even after loss of internet and AC power, LoRa

2-AAA batteries in each sensor

Purchase of Speaker Hub required for audible sound alert

- YoLink Hub & Water Leak Sensors
- The Hub connects your YoLink devices to the Internet and to the user-friendly YoLink app, and is the central controller for your YoLink wireless home automation system

**FEATURES:**

- Wi-Fi (2.4 GHz only) or wired network connection options YoLink’s industry-leading long range communication (up to ¼ mile open air) based on LoRa long range technology

**BENEFITS:**

- Very easy plug & play initial set-up – no special network or computer knowledge required. Simply plug the included Ethernet patch cord into an available working network port on your router (suggested) or use a 2.4 GHz Wi-Fi connection and be up and running in moments
- While many smart home devices rely on the home Wi-Fi system and may crowd your network or harm your Wi-Fi performance, the YoLink devices communicate with the Hub via the proprietary YoLink Protocol at the 923.3 MHz frequency (only your Hub connects to the Wi-Fi/network and Internet)
- Homes with devices on Wi-Fi, or other protocols, with access to the Internet, are each, individual, potential safety, privacy, and security risks. Acting as the internet gateway the YoLink Hub connects your YoLink devices to the internet via one encrypted connection, providing safety and security for your network and home

**Whole House Detection w/Shutoff**

**Moen** ..... Very mixed reviews Amazon vs Moen

[Moen 900-006 Flo 1” Smart Water Shutoff](#), \$448 (sale) – 550 (reg price)

May require [extension cable](#) for electric \$12

[Moen 3 pack Sensors](#) \$130

- PROTECT YOUR HOME FROM WATER DAMAGE: Can be placed in the home wherever there is a risk for potential water damage, such as a flooding basement, washing machine leak, hot water tank failure, etc.
- 24/7 PROTECTION: Smart technology detects leaks to help reduce the risk of water damage by providing 24/7 monitoring
- REAL-TIME NOTIFICATIONS: Connects to the Moen Smart Water App to notify you of moisture through notifications to their smartphone. The Moen Smart Water App can also be customized to monitor moisture levels, humidity, and temperature
- WHOLE HOME PROTECTION: Offers the ability to use and connect multiple detectors for whole-home protection. Available in single or multi-packs, providing the opportunity to achieve home water management on any budget
- COMPATIBILITY: Use the Smart Leak Detector as a standalone monitoring device or connect it to the Flo Smart Water Monitor and Shutoff (sold separately) for whole-home protection
- REMOTE SENSING DISC: Includes an extension cable with Remote Sensing Disc that can extend up to 48 inches, making it perfect for reaching tight spaces like under a washing machine or next to a dishwasher
- CONNECTION: 2.4 GHz Wi-Fi is needed to connect to the Moen Smart Water App
- BATTERY TYPE: CR123A – 3-volt lithium metal battery that lasts up to 2 years
- WARRANTY: Includes a 1-year warranty

**Phyn Water Smart With or Without Shut Off – Monitors water flow rates to detect leaks.** Mixed reviews, device must “learn” the pattern of water flow from each fixture.

1. [Phyn Smart Water Assistant: DIY-Installed Smart Home Water Usage Monitor & Leak Detector No Shut Off](#) \$300
2. [Phyn Plus 2<sup>nd</sup> Generation](#) Smart Water Assistant \$579

**Water Pipe Leak Detection – Possible use by Maintenance (Facility Experts)**

The following detector was the only modestly priced pipe leak detector that seemed to detect leaks as small as pinhole leaks, in indoor and outdoor pipes.

Other options may be available and should be reviewed as to their capabilities.

[Ultrasonic Leak Detector DS-7000](#) \$2190

- The DS-7000 is the latest leak detector produced by Daeseong Engineering, which has 30 years history of manufacturing leak detection. Leakage detectors are available both outdoors and indoors and are essential equipment for facility experts.
- The sound range of the product is divided into high, mid, and low, and can be controlled in detail with the knob. The screen displays a sound level graph, which can help detection. Usually, the mid and high range are used for indoor detection, and the low range is used for outdoor detection.
- For the best matching of equipment and sensors, the parts in the sensor were made from Germany, and the external headphones were imported from Japan. The rest of the products are made from Korean parts. With all of these combinations, it provides the best sound quality.
- 2 years warranty/ Repair service available for 24 hours. If some failure happens by rough use, some cost could occur.
- Contents 1. Portable Bag 2. Indoor Headphone 3. Outdoor Headphone 4. Palm sensor 5. Geo Sensor 6. Amplifier 7. Cable 8. Hearing stick.

**Kanaloa At Kona**  
**Lifespan Estimates Of Unit Plumbing Components**

While the AOA understands that Owners must choose options that best suit their individual circumstances, KAK suggests that Owners err on the side caution regarding plumbing/appliance component replacement. Replace older parts *before* leaks arise, and don't risk damage your unit or your neighbor's. The investment an owner makes in replacing a component on the early side could pale in comparison to the cost and inconvenience of having a leak that creates tens of thousands of dollars in damage.

The KAK Water Leak Mitigation Committee has recommended that highly conservative lifespan estimates of plumbing components be used, given the age of our complex and vulnerability of plumbing fixtures that comes with time.

The following estimates of lifespan for key components have been compiled from various internet sources. In addition, the Committee has made some specific suggestions based on the most common sources of damaging leaks at Kanaloa in recent years.

Component	Lifespan Years	Replacement Recommendations
Supply Waterline valves, hoses at toilets, sinks	5-10	Replace any that are not quarter-turn type immediately
Shower Pans	10-45	Replace any originally installed metal pans immediately
Toilet flange, wax ring	5-20	If a toilet "rocks"- Replace flange/ring immediately
Electric water heaters	10-15	Replace if over 10 years old
Water heater lines	5-10	Replace waterline connections when new water heater installed
Washing machine hose	3-5	Replace hose any time new washer is installed
Icemaker supply line	30-50	Replace any originally installed valves immediately, or consider disconnecting water supply if not using, or for maximum protection



## RLI Insurance Company Loss Assessment Summary



For more than 20 years, RLI has helped provide flexible insurance solutions for Hawaii condominium unit owners, including coverage that fills the gaps of condominium association coverage.

### CONDOMINIUM ASSOCIATION MASTER POLICY COVERAGE GAPS

In most scenarios, a condominium association insures the building and common elements under a single policy, called the master policy. However, the master policy may have gaps the association expects their unit owners to fill with their own insurance through an HO6 Condo Insurance policy.

These unique insurance requirements or recommendations are typically detailed in the association's by-laws, which may require or encourage you to carry coverage for the AOA0 master policy building deductible. If that's the case, you may need to purchase a Supplemental Loss Assessment endorsement on your HO6 policy.

### SUPPLEMENTAL LOSS ASSESSMENT COVERAGE

#### Supplemental Loss Assessment coverage includes:

- **Standard Loss Assessment Coverage (i.e. damage to common areas):** If your condominium association has damage to the common areas and the master policy limits are not sufficient to cover the loss, you and all unit owners could be assessed to cover the additional damages.
- **AOA0 Master Policy Deductible Assessments:** Condominium associations may pass on the master policy deductible to a source unit for payment regardless of liability. The source unit may be responsible for mitigation and repair bills for damage to other units, even when the amount is below a master policy deductible.
- **Coverage for standard loss assessment and any AOA0 Master Policy deductible assessments may be purchased at limits up to \$250,000.** Your current policy includes a limit of \$1,000 for loss assessment coverage at no additional cost.

Adding Supplemental Loss Assessment coverage to your RLI insurance policy may help you minimize paying for these types of expenses out of pocket.

#### NEXT STEPS

Before you find yourself with a condominium association loss assessment, obtain and review your association's master insurance policy deductible and by-laws. Then, consult with your RLI insurance agent listed below to determine an appropriate limit of coverage.

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FOR MORE INFORMATION:  
ATLAS INSURANCE AGENCY INC HI  
P: 808-533-3222

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