Protecting Property and Profitability: How Automist Helps US Insurers Address Fire and Water Risks in High-Value Homes

Introduction

Insurers covering high-value residential properties are navigating an increasingly complex risk landscape. Whether it's a $10 million estate in the Los Angeles hills or a luxury retreat in remote Napa County, the dynamics of property protection — and profitability — are evolving. Fire sprinklers remain a vital tool in life safety and fire suppression, significantly reducing the risk of catastrophic loss. However, recent claims data reveals a parallel trend: in many affluent homes, water damage has overtaken fire as the most frequent and costly cause of insurance claims. In some cases, the systems designed to protect against fire can inadvertently contribute to these losses through accidental discharges, leaks, or burst pipes. For insurers, the challenge lies not in choosing between fire or water protection, but in finding the right balance to mitigate both.

In California, where fire sprinklers are required in all new homes by state building codes, insurers must now balance the benefits of fire suppression with a higher frequency of high-severity water damage claims. Meanwhile, in rural or unincorporated areas, where homes may lack access to reliable fire services or hydrants, the stakes are different but just as urgent. Homes in Public Protection Classification (PPC) 9 and 10 zones — the lowest scores on the ISO scale of community fire response — face a heightened risk of total fire loss, often because fire departments are too far away or have no significant water supply to combat flames.

These two challenges — water damage in well-protected urban homes and fire exposure in underserved rural homes — highlight a paradox at the heart of property insurance today. How can insurers offer comprehensive coverage while managing both fire risk and water claims? And what tools exist to mitigate these exposures without compromising fire safety?

This report explores these intersecting issues, including:

- The Unique Risk of Rural High-Value Homes
- The profitability challenges facing insurers who cover luxury homes with internal sprinklers
- The regulatory and climate realities shaping California's high-risk home landscape

- The pressures on insurers to adapt underwriting and loss prevention strategies to balance both water and fire risks

It also presents a compelling opportunity: emerging fire suppression technologies, like Plumis' Automist, which offer a smarter, more targeted approach to fire protection — one that addresses insurer concerns around water damage while improving outcomes in homes that need internal fire defense the most. In rural PPC 9 and 10 zones, where a structure fire can go unchallenged for precious minutes, Automist's fast activation, dry-pipe design, and retrofit flexibility offer a viable solution — especially when tanks, upgraded water mains, or costly plumbing make traditional sprinklers impractical for retrofit.

By the end of this report, we hope to provide not just a clearer picture of the risks, but a path forward — one that brings together insurers, regulators, and technology providers to reduce losses, protect property, and serve homeowners in both high-density and high-risk zones.

The Unique Risk of Rural High-Value Homes (PPC 9 and 10)

In the United States, the need for fire sprinklers is especially pronounced in rural and remote areas classified as Public Protection Class 9 or 10. The Public Protection Classification (PPC) is an ISO scale from 1 (best) to 10 (worst) that scores a community's fire protection capabilities, factoring in the local fire department quality, emergency communications, and most critically, the water supply for firefighting. A PPC 1 area has excellent fire services, typically with ample fire stations and hydrants. By contrast, Class 9 generally means there is at least a fire department in the area, but no reliable water supply (for example, no hydrants or insufficient water flow for firefighting). Class 10 indicates the community fails to meet even low-level fire protection criteria – often because the nearest fire station is too far away (more than 5 road miles) or non-existent. Homes in PPC 9 or 10 zones are harder to support during a fire emergency, with firefighters either unable to arrive quickly or will limited water to douse the flames when they do. Unsurprisingly, insurance companies view PPC 9 and 10 homes as very high risk. A property in a Class 10 area faces a much higher chance of total loss from fire, which makes some insurers unwilling to underwrite it at all. Those that do offer coverage often charge steep premiums to offset the greater risk.

To improve insurability, homeowners and insurers alike look to on-site fire protection measures as a critical mitigation strategy. In fact, installing a home fire suppression system is often one of the only ways to obtain insurance for a remote home, or to substantially lower the premium. Many insurers will consider internal sprinkler systems or similar technologies as a positive risk factor – essentially bringing a measure of fire defense to a location that lacks external fire service. As one insurance advisory notes,

putting fire sprinklers in your home can help prevent a small fire from becoming a total loss, which is especially important in areas with poor fire service, and it may earn discounts on homeowners coverage.

High-Value Homes, Sprinklers, and Insurance Profitability

Luxury homes in the $10M+ range present unique challenges for insurers. By design, these properties often have extensive internal plumbing and sprinkler systems. Ironically, internal plumbing water losses are the number one cause of damage to luxury homes, occurring more frequently than fire, theft, or any other type of loss. In practice, this means that a mansion in Beverly Hills or Silicon Valley is far more likely to suffer a costly leak or burst pipe than a devastating house fire. Sprinkler systems, which are intended to protect against catastrophic fires, introduce additional water exposure: if a sprinkler pipe breaks or a head discharges accidentally, thousands of gallons of water can pour into the home. The result is that high-end residences with sprinklers may generate more frequent insurance claims (for water damage) even as they avert large fire losses. This higher claims frequency drives up loss costs for insurers, potentially making these policies less profitable. In short, the very systems that mitigate rare disasters (fires) can cause more routine problems that chip away at underwriting margins.

Several factors explain why water damage looms so large in expensive homes:

- **Extensive Wet Pipe Networks:** A $10M estate typically contains dozens of “water points” – bathrooms, kitchens, appliances, and fire sprinkler heads – far more than a modest home. Each point is a potential failure source (pipes, valves, connections, etc.) if the pipes are loaded with pressurised water, so more points mean a higher probability of a leak. Insurers note that luxury homes often have 40+ water connections, inherently increasing loss frequency.
- **High-End Finishes:** When water mishaps occur, the repair costs are enormous. Custom hardwood floors, imported stone, bespoke cabinetry, and high-end electronics can be ruined by water. Even a small leak in the wrong place can cascade into a six-figure restoration. For example, warping of one section of custom wood flooring might require replacing the entire level to ensure a perfect match. Thus, water incidents that would be minor in a standard house become major claims in a luxury property.
- **Absence and Maintenance Issues:** Owners of high-value homes may not always be present – these might be secondary residences or vacation homes. If a pipe bursts or a sprinkler leaks while the home is unoccupied, water can flow for hours or days, magnifying damage. Additionally, the upkeep of sprinkler systems (e.g. annual inspections, and maintaining adequate heat to prevent freezing) is the homeowner’s responsibility. If maintenance is neglected, the likelihood of a

failure or accidental discharge increases. Insurers worry that some homeowners are unaware of the maintenance needs, leading to preventable losses.

While individual claim files are typically private, some cases reach the public record through subrogation lawsuits. For instance, AIG paid out approximately $2.4 million for an apartment property water damage claim after a broken sprinkler head caused water to pour into a high-end unit. This claim, cited in legal filings, demonstrates how a simple failure can lead to multi-million dollar damages in a luxury residence (in this case a lavish apartment). In another scenario shared in industry circles, a single sprinkler pipe burst in the attic of a custom home while the owners were away, resulting in over $1 million in repairs to flooring, walls, and home systems. Such incidents, while not everyday occurrences, illustrate the upper tail of risk that insurers must consider when underwriting $10M homes.

For insurers, the net effect is that high-value homes with sprinklers carry a different risk profile than one might assume from fire risk alone. The reduction in fire risk (which is significant) comes with an increase in water-related risk. If not properly managed, this can make the policy less profitable.

California-Specific Considerations

California presents a mix of conditions that influence these issues:

- **Building Codes and Regulations:** California was one of the first states to adopt the requirement that all new one- and two-family homes (effective January 1, 2011) must have fire sprinklers installed. This statewide mandate means that virtually every newly built high-end home in the last 15 years has sprinklers by law. So, unlike some states where a homeowner might opt not to have sprinklers, in California it's a given for new construction. This has improved fire safety outcomes but also means insurers cannot "opt-out" of sprinkler-related water risk in insuring new high-value homes. The state's stance is that safety comes first – and indeed sprinklers have undoubtedly saved lives and property. Insurers acknowledge this; they just must incorporate the water risk into their plans. Additionally, California's Title 24 building standards require certain seismic bracing for water heaters and gas appliances; perhaps in the future, we'll see more requirements for leak detection systems as part of code in high-value residences, given the insurance pressures.
- **Wildfire vs. Internal Risks:** Much of the recent news about California home insurance has been about wildfires making insurance hard to get in certain areas. In such cases, profitability is challenged from multiple angles, leading some insurers to non-renew policies in wildfire zones regardless of sprinkler protection. The California FAIR Plan (insurer of last resort) has seen enrollment by owners of high-value homes dropped by mainstream insurers due to wildfire

concerns. Those homes often still carry a separate homeowners policy for non-fire perils (water, theft) – meaning an insurer might only be on the hook for water damage, etc., and not the wildfire (which the FAIR Plan covers). This fragmentation is a peculiarity in California: an insurer might insure a $10M home's water damage risk but not its fire risk (if fire is excluded and picked up by FAIR Plan). In such cases, the insurer's entire exposure is water-related – making the sprinklers purely a liability from the insurer's viewpoint (since they aren't responsible if a fire burns down the home, the FAIR Plan is). This scenario could further explain why some insurers see less profit in those homes; they don't even get the benefit of the fire risk reduction if they aren't covering fire in the first place.

- **Environmental and Climate Risks:** While the state's climate is generally mild, extreme weather events and environmental factors increasingly threaten plumbing systems in high-value homes. In mountainous or inland regions, winter freezes can burst pipes and sprinkler lines if not properly insulated. Heatwaves may trigger rolling blackouts, causing HVAC failures that lead to overheating or freezing in parts of the home. Prolonged droughts can shift foundations and stress pipes, while sudden rainfall can cause pipe ruptures due to ground expansion. Additionally, earthquakes pose a major hazard — strong tremors can rupture internal water lines or trigger sprinkler discharges, with many policies excluding such water damage unless additional coverage is purchased. Together, these conditions contribute to a growing number of costly water loss claims, prompting insurers to closely monitor how climate volatility affects risk exposure.

In California's high-value real estate landscape, fire sprinklers are standard and valued, but they come with this side effect of water risk that everyone – homeowners, insurers, and regulators – is learning to manage better. The state's focus remains on ensuring availability of insurance for all perils, and it encourages mitigation for both fire and water.

Insurer Perspectives on Sprinkler-Related Risk

Insurers have become increasingly cognizant of the water damage risk in high-value homes and have adjusted their underwriting and risk management practices accordingly. Here's how insurance companies evaluate and respond to sprinkler-related risks and water damage exposures:

1. **Underwriting Requirements and Inspections:** Many companies now require risk mitigation measures for homes above a certain insured value or after a water loss. For example, some insurers mandate that an internal sprinkler system must have a flow alarm connected to a central monitoring station or local fire department. AIG, as one Reddit user in California noted, asked for proof that the

home's sprinkler flow alarm was hooked up to alert the fire department. The logic is that if a sprinkler discharges (whether due to fire or accident), an automatic alarm will summon help to shut off the water and deal with the situation, minimizing damage. Insurers may also send loss control specialists to inspect high-value homes for vulnerability to leaks – checking, for instance, that sprinkler pipes in the attic are insulated, or that the home has an automatic water shut-off device. These inspections help the insurer identify risk factors before a claim happens.

2. **Encouraging Technology Solutions:** In recent years, insurance carriers have strongly advocated for water leak detection and automatic shut-off systems. These are devices installed on the main water line that can detect abnormal water flow (as would occur in a burst pipe or if a sprinkler head lets go) and automatically shut off the water supply. Recognizing how much these devices can reduce claim severity, insurers often offer premium credits for them. In California, there is a trend of insurers requiring homeowners to install water leak detection valves on the main line as a condition of coverage, especially for expensive homes. Plumbing contractors in the state have noted "new mandates" where insurance companies insist on these upgrades to renew policies. Installing a whole-house leak shutoff can sometimes lower premiums by demonstrating risk mitigation. Some carriers (Chubb, for instance) even partner with technology companies to provide discounts or free devices to policyholders. The logic is simple: if a pipe bursts at 2 AM and nobody is home, a smart valve that closes within a minute could slash the damage from tens of thousands of dollars to a few hundred. Insurers see this as a win-win, and it directly addresses sprinkler leaks as well – the moment a sprinkler head breaks, the system would cut water flow.
3. **Separate Water Damage Deductibles or Sublimits:** In response to rising water loss costs, insurers sometimes structure policies with special provisions. It's not uncommon now to see a separate deductible for non-weather water damage (for example, a $10k deductible for water claims, even if the standard deductible is $5k). Some insurers in California offer an option of a separate water damage deductible which can be 10–15% of the claim, in exchange for a slight premium discount. This both incentivizes the homeowner to avoid small water claims and protects the insurer from frequent small payouts. In extreme cases, an insurer might put a sublimit on certain types of water losses or exclude coverage for mold resulting from a slow leak, though high-net-worth policies usually aim to be comprehensive. These measures are reflections of insurers trying to corral the water risk.
4. **Non-Renewals and Tightening Eligibility:** As a blunt measure, some insurers simply decline to continue coverage on homes that prove too water-loss-prone. A California Insurance Department study found that 32% of insurers surveyed

would not renew a policy after one or two water-loss claims in a three-year period, a higher non-renewal rate than for other types of claims. This was noted as early as 2006 and remains true today: homeowners who suffer repeated water damage claims often find themselves dropped by their insurer. From the insurer's perspective, such a home is unprofitable unless changes are made. In California's current insurance market (which is under stress from wildfire losses as well), some companies have broadly pulled back from insuring very high-value homes. Those that remain tend to be the specialty carriers who manage the risk by being selective and requiring risk improvements. It is telling that insurers view water damage as potentially predictive: one claim might be seen not as random bad luck but as an indicator of future problems.

5. **Credits for Sprinklers – Fire vs. Water Trade-off:** Traditionally, having a fire sprinkler system would earn a homeowner an insurance credit (discount) because it significantly reduces fire risk. Insurers still generally provide this credit – for example, California insurer filings show credits for automatic sprinklers in the home, usually around 5% off the fire portion of the premium. However, insurers now offset this by accounting for water risk elsewhere. They might require the sprinkler system to be monitored (as mentioned) to grant the credit, or they build in the expectation of some water claims into the base rate for high-value homes. The net effect is that the sprinkler's presence is not giving as much net savings on insurance as a homeowner might expect, because the insurer knows it may pay out on water damage at some point. It's a balancing act: sprinklers reduce the catastrophic fire loss probability (a huge plus) but increase the ongoing maintenance risk that the insurer must manage. Insurers internally weigh these factors when pricing a policy. If a particular home is in a very high wildfire area, sprinklers (plus other hardening) might be absolutely required just to offer coverage at all – even if water damage is a concern, the alternative (total fire loss) is worse.
6. **Industry and Regulatory Insights:** Insurance industry groups and regulators in California are aware of these trends. The National Association of Insurance Commissioners (NAIC) and the Insurance Information Institute (III) have highlighted water damage as a growing component of homeowner's claims. The Insurance Services Office (ISO), which provides advisory rating information, has updated its risk factors to reflect water damage potential, and many insurers use proprietary models that factor in the age of plumbing, usage of smart leak detectors, etc., when underwriting high-value homes. The California Department of Insurance has also encouraged insurers to innovate on this front, even approving filings that give premium credits for mitigation devices. Local fire departments, while mainly focused on life safety, have started educating residents that maintenance of residential sprinklers is critical to avoid failures –

because a poorly maintained system helps no one (it might fail to control a fire and cause water damage).

In essence, insurers have adapted by becoming more proactive and data-driven about water risks. Rather than shy away from insuring $10M homes altogether (a lucrative market if managed well), they are pushing mitigation and using pricing signals to encourage homeowners to safeguard against leaks. Some insurers even provide value-added services by offering home risk assessments where they will point out a potential freezing risk or install water sensors in risk areas. The goal is to prevent losses before they happen, improving both the homeowner's experience and the insurer's profitability.

Automist: Reducing Water Damage Without Sacrificing Fire Protection

An innovative fire suppression solution now offers a way to balance fire and water risk in high-value homes. Automist, developed by UK-based firm Plumis, is an electronically controlled water mist system designed as an alternative to traditional home sprinklers. Recently launched in the U.S. market after over 14,000 UK installations, Automist is positioned as a smarter and faster internal fire sprinkler that uses less water, minimizes false activations, and operates up to 14x faster than a concealed fire sprinkler. For insurers and homeowners, it represents a potential game-changer in risk management.

Introductory video to Automist: https://www.youtube.com/watch?v=Kj0hNelAz0Y

How Automist Works: Unlike conventional sprinkler systems that rely on heat to burst a mechanical bulb on a sprinkler head, Automist uses an intelligent algorithm and a wall-mounted, swivelling spray nozzle. When smoke is detected, the system doesn't immediately deluge the room. Instead, it employs a "double knock" verification – using both smoke and heat/rate-of-rise sensing to confirm a developing fire threat. Only if both sensors agree there is a real fire risk will the system activate. This greatly reduces false alarms (for instance, it won't trigger just from burnt toast or a candle, scenarios that often set off smoke alarms). Once activated, Automist's infrared-guided nozzle pinpoints the fire's location and discharges a high-pressure water mist fog directly at the source of flames. The mist is composed of fine droplets, which absorb heat and smother the fire rapidly by displacing oxygen and cooling, much like a traditional sprinkler – but in a targeted way. Its faster response time could significantly reduce both the spread of fire and the extent of associated damage, helping protect high-value interiors and the things that matter most.

Water Use and Damage Prevention: Critically for insurers, Automist uses far less water than a standard sprinkler. Automist uses up to 90% less water than an equivalent conventional sprinkler system to suppress a fire. In practical terms, that means a fire can be controlled with maybe 30 gallons of water instead of 300. By avoiding flooding the entire room and focusing water mist only where needed, the system greatly limits collateral property damage. Plumis describes it as "targeting the fire, not flooding your

home." The unit connects to a normal domestic water line and does not require the huge flow rates of sprinklers, so it inherently cannot dump the same volume of water. For context, where a single sprinkler might pour out 24 gallons per minute, Automist's misting pump might use on the order of 2.4 gallons per minute (delivering it as a dense fog). Less water discharged = less damage if it ever goes off. Real-world fire demonstrations have shown minimal water accumulation beyond the immediate vicinity of the target, a stark contrast to the widespread soaking from traditional sprinklers.

Moreover, Automist is a **"dry pipe" system** – the piping or hose network stays free of water until the moment of activation. This means minimal risk of leaks or bursts from the suppression system when idle. Homeowners do not have to worry about hidden sprinkler pipes corroding or freezing; there is simply no standing water in the Automist lines. As Plumis notes, the design "provides the fire protection you need without the risk of burst pipes", since it won't freeze in cold weather and avoids the constant pressure that can rupture fittings over time. The dry system and sensor logic also make accidental discharge nearly impossible – the system physically cannot spray water unless the control unit has detected fire conditions via multiple sensors. There are no fragile glass bulbs to break accidentally, and even jostling the spray head will not cause a release. These features directly address the key failure modes of traditional sprinklers. As a result, the likelihood of an Automist causing an accidental water damage event is exceedingly low, a fact not lost on insurers evaluating the technology.

Despite using less water, Automist maintains **robust fire-fighting performance**. It has undergone extensive fire testing to meet safety standards. In the United States, Automist recently achieved UL certification (UL 2167A) as the first targeted residential water mist system to meet that benchmark. This third-party certification demonstrates that Automist can reliably suppress typical home fires to the same level of effectiveness expected of NFPA 13D sprinkler setups. Importantly, the UL listing and compliance approvals mean that Authorities Having Jurisdiction (building code officials) can approve Automist as an alternative to traditional fire sprinklers in new construction or retrofit scenarios. In other words, a luxury home builder or owner in California can now install Automist to satisfy the state's fire sprinkler requirement, with the approval of fire safety regulators. The fact that it operates significantly faster than standard sprinklers could also mean earlier suppression and lower losses – a critical factor in luxury properties where seconds matter. This regulatory acceptance is crucial for insurers – it assures that using Automist does not compromise fire protection, and policies can treat it similarly (or even favourably) compared to standard sprinklers from a coverage standpoint.

Conclusion – Balancing Fire and Water Risk with Innovation

As insurers navigate the dual challenge of rising water damage claims and persistent fire risk in high-value homes, technologies like Plumis Automist offer a practical path forward. Designed to deliver effective fire suppression with dramatically reduced water usage, Automist helps resolve the growing tension between fire protection and water damage liability. For insurers, it represents a way to reduce claims costs, protect underwriting profitability, and offer clients a more resilient, insurable home.

Real-world deployments are already proving its value. In Hawaii, Automist is helping insurers cover remote PPC 9 and 10 homes that lack municipal water infrastructure or fast fire response. Its dry-pipe, low-water design makes it ideal for island homes. Meanwhile, in Colorado, Automist has been deployed in high-altitude areas where freezing temperatures make wet-pipe systems vulnerable. By eliminating the need for tanks, water main upgrades, or extensive plumbing retrofits, it enables internal fire protection in homes that would otherwise be too difficult or expensive to equip. Brokers and carriers in wildfire-prone states are including Automist in broader resilience strategies, combining it with ember-resistant vents, wildfire sprinklers, and defensible landscaping to strengthen home insurability.

One notable case involved a London apartment fire where Automist quickly extinguished the flames, containing the damage to a single room and requiring only minimal clean-up. While broader loss data is still being collected, early indicators show that Automist can significantly reduce both fire severity and water damage.

Ultimately, the goal is not only to make homes insurable in challenging environments — whether due to wildfire, remote location, or water infrastructure limitations — but to genuinely improve safety for residents. Automist shows that with the right tools, insurers can turn emerging risks into opportunities for smarter protection.

About Plumis

Plumis is a global leader in intelligent fire suppression, pioneering next-generation solutions that redefine how homes are protected. Unsatisfied with traditional fire protection systems that have changed little in over a century, we've forged our own path — combining advanced technology with human-centred design to protect like a firefighter would: targeting the source of the fire quickly, efficiently, and with minimal disruption.

Our flagship innovation, Automist, is designed to dramatically reduce the damage caused by both fire and water. Recognized as one of TIME's Best Inventions of 2023 and winner of Gold at the 37th Edison Awards, Automist exemplifies our mission: to create safer, smarter, and more sustainable homes. With a dry-pipe, precision-activated mist system, Automist not only suppresses fires effectively, but also helps mitigate false activations and plumbing-related water damage — a growing concern in high-value and remote homes.

At Plumis, we have a laser focus on finding better ways to reduce the devastating impact of fire, smoke, and water damage. We're proud to support insurers, brokers, and homeowners in turning emerging risks into smarter protection — and providing true peace of mind for every household we help protect.

For more information, visit www.plumis.com or contact fireprotection@plumis.com.

Sources

- Insurance Information Institute – Homeowners insurance claim frequency and causes (iii.org)
- AIG Private Client Group – White Paper on Water Damage in High Net Worth Homes (wssus.com)
- AIG "Myths and Misconceptions about Water Damage" – luxury home risk insights (www-604.aig.com)
- Chubb / Risk Industry Data – High-net-worth water claim trends (mdjwlaw.com/
- bogleheads.org)
- California Department of Insurance – *Spatial Analysis of Water vs. Non-water Claims* (house value vs. water severity) (insurance.ca.gov)
- California Dept. of Insurance consumer study – non-renewal rates after water claims (kiplinger.com)
- City of Dixon Fire Dept – Residential Sprinkler FAQs (maintenance and myths) (cityofdixonca.gov)
- NFPA/Home Fire Sprinkler Coalition study – Sprinklers reduce fire damage and water usage (menlofire.gov)
- QRFS (fire protection blog) – Causes of accidental sprinkler discharges (blog.qrfs.com)
- Apartment Assoc. of LA – Earthquake sprinkler leakage exclusion (members.aagla.org)
- Local Plumbing CA – Insurance requirements for leak detectors (California 2024) (localplumbingca.com)
- Kiplinger – *Dangers of Water-Damage Claims* (insurer behavior on water losses) (kiplinger.com)
- Insurance Journal/PropertyCasualty360 – Water damage prevalence in luxury homes (bogleheads.org via Bogleheads forum citation)
- Menlo Park Fire District – CA Home Fire Sprinkler fact sheet (freeze protection, env. benefits) (menlofire.gov)

