How Insurance and Property Technology Disarms Unplanned and Silent Threats

Property Risk Gaps & Traps

KAIROS

CRE & Multifamily | 2021

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EXECUTIVE SUMMARY

Commercial real estate has been a slow adopter of new technology, but that's about to change. - NAIOP

Exposur e Gap

“Insurance premiums, deductibles, and costs related to unplanned or catastrophic events are on the rise with no end in sight.”

Executive Summary

Many industries tend to be early adopters of technology. The banking, travel and media industries quickly incorporated, and were transformed by, technological advances. These first-movers were quick to adopt new ways of serving their clients and engaging their workforce. Other industries have been slower to adopt new trends, and this is particularly true of the commercial real estate industry - at least until last year when Covid became the catalyst for owners to rethink operational strategies. This change of mindset has been largely driven out of necessity, in order to address new, near-term operational requirements such as hands-free access, occupancy tracking, and air quality conditions. Where does the CRE industry go from here? How does technology help to achieve sustainability goals? Property owners have few options available to reduce costs without negatively impacting service levels unless they start incorporating additional technologies into their strategic planning – both in the present and the future. This requires owners to fully embrace technology that empowers owners to make data-informed decisions.

The Authors spent months speaking with asset managers and representatives from the insurance industry about new risk mitigation strategies that should benefit both owners and insurers. Together, we concluded that one of the most underestimated drivers of decreasing net operating income (NOI) is the costs related to unplanned events, more specifically, events that fall below insurance deductibles. We heard one consistent theme in all of our interviews, no matter which side of the table they were on - insurance premiums, deductibles, and costs related to unplanned or catastrophic events are on the rise with no end in sight. Throughout this paper we explore how to integrate data into your decision-making regarding unexpected events that decrease NOI. New technologies provide data that helps owners de-risk their portfolios by minimizing the frequency and severity of Unplanned Events. We also look at how technology improves the customer experience and translates into additional revenue. The two-pronged approach we recommend is both simple, yet often challenging:

(1) Identify the Problem to
(2) Find the Solution

IDENTIFYING THE PROBLEM

Generally, the problem is declining NOI, but it takes many forms. Owners can address the challenge from both sides with technology - increase revenue and lower operating expenses. In this paper, our focus is on events we are characterizing as "Unplanned Events." Unplanned Events come in all shapes and sizes and depend on the asset's characteristics, including property type, geography, location, age, construction type, and the quality of the equipment and maintenance programs.

Causes of Unplanned Events vary widely and include failed/aging equipment, accidents, vandalism, construction defects, and others. Based on information obtained during our interviews, the most significant challenges are caused by water, fire, and organic growth. Here are the key themes of our conversations followed by an outline of potential solutions to improve the bottom line and drive value.

- Increasing Insurance Costs
  - Rising Premiums
  - Massive Deductible Increases
  - Increasing Unplanned Events
- Rising Utility Costs
- Pressure on Capital Budgets
- Less Satisfied Residents/Tenants
- Difficulty Determining ROI
- Rising Construction Period Incidents

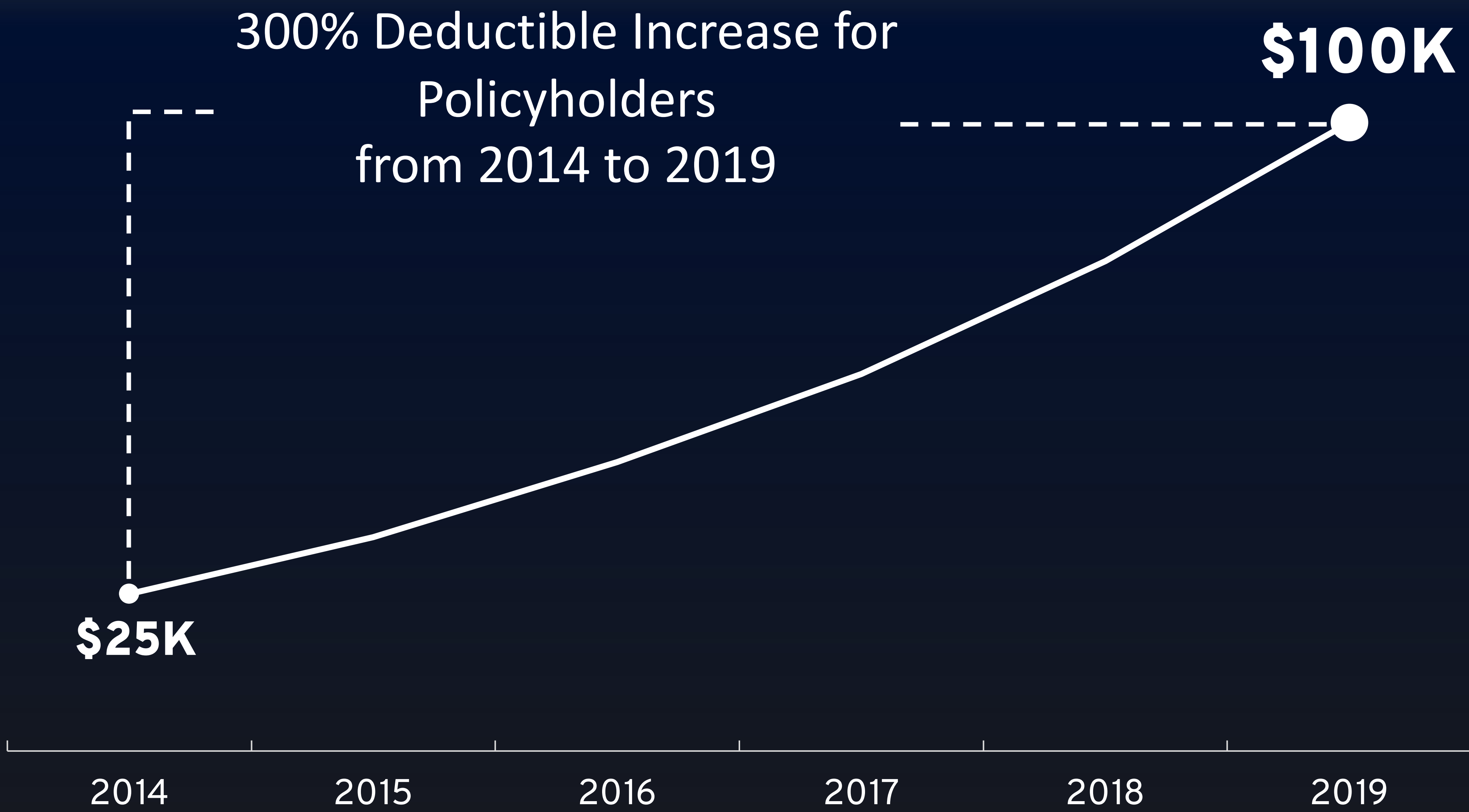
Increasing Insurance Costs

To identify what key drivers are behind recent price increases in both insurance premiums and deductibles; we think it is helpful to understand conditions and recent trends in the insurance industry. As outlined by the Insurance Information Institute (www. iii.org), “The property/casualty insurance industry cycle is characterized by periods of soft market conditions in which premium rates are stable or falling, and insurance is readily available. This soft market condition stands in contrast to periods of difficult market conditions where rates rise, coverage may be more difficult to find, and insurers’ profits increase”[1]. From 2013 to 2018, the insurance markets were soft, but in 2019, markets began moving in the other direction. One insurance executive explained that carriers started to pay closer attention to the significant increase in frequency of smaller claims resulting from smaller unplanned incidents during renewal meetings three or four years ago. Some policyholders got the message, some did not, likely because we were coming off a soft market, so no one was “feeling the pain.” As noted by Abe Freeland, Managing Partner at Willis Towers Watson,

“Everyone I’ve spoken with about risk management tech solutions was really eager to hear more because there is internal pressure to get this type of frequency and attritional loss off of our books.” Carriers ultimately started to increase premiums and also started to take a harder line on the smaller incidents by pushing up deductibles. Not only do these small events eat away at available funds for larger events, they come with a significant administrative burden, which also takes up carriers’ valuable resources.

75% of all real estate losses come from accidental discharge related to plumbing, HVAC systems and appliances and that springtime preventative maintenance (startup) to HVAC’s can pay huge dividends in loss avoidance. – The Hartford

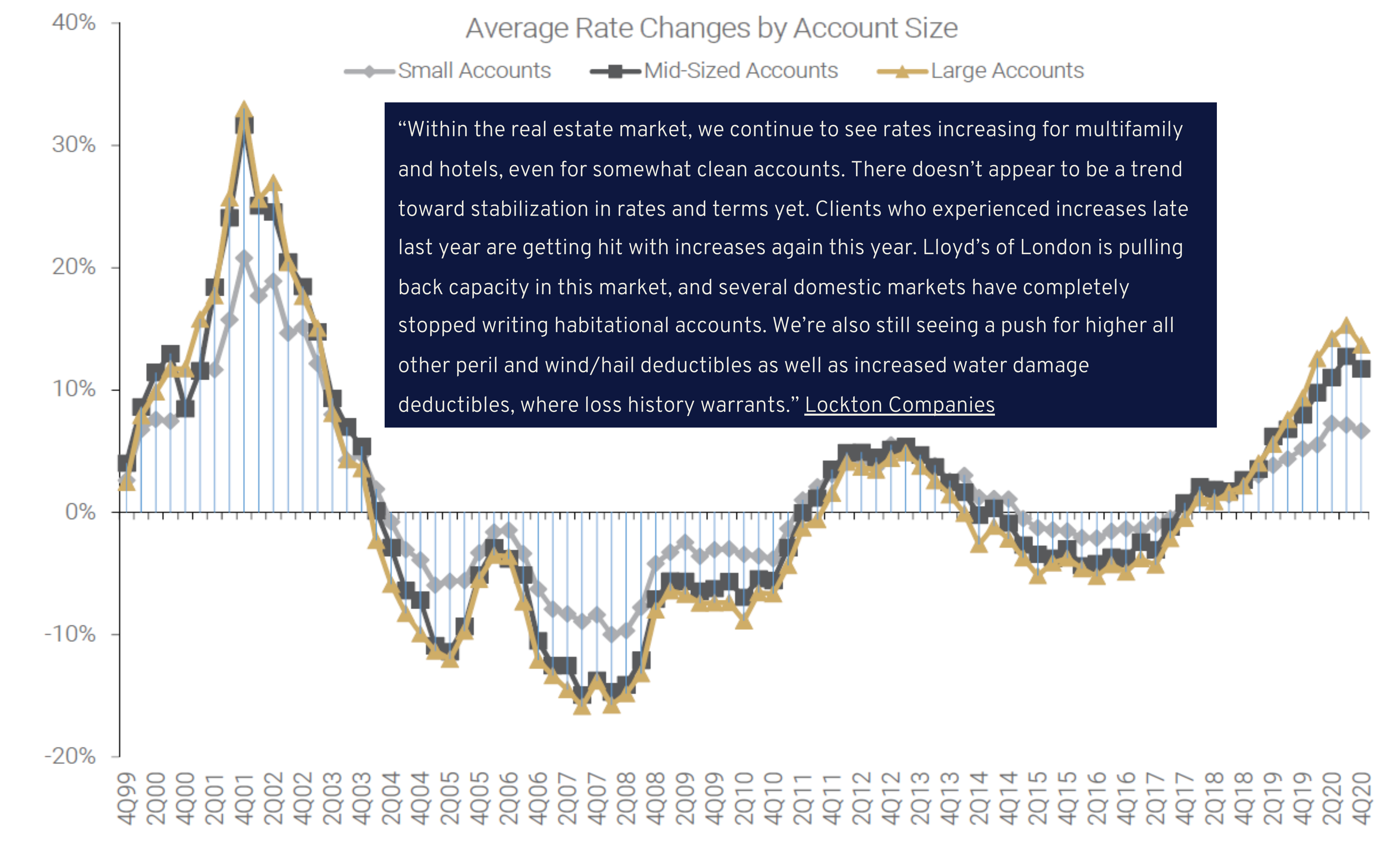
Rising Insurance Premiums & Deductibles



Average property rate increases of around 20% are the norm, but for certain occupancy types and larger, more complex risks – especially those with losses or catastrophe exposure – increases start at 30% or higher, brokers say.

From <https://www.businessinsurance.com/article/20200707/NEWS06/912335482/Property-insurers-impose-policy-restrictions,-hike-rates-renewals>

"Q4 2020 was the 13th consecutive quarter of increased premiums" – The Council of Insurance Agents & Brokers' Commercial Property/Casualty Market Report Q4 2020



"Within the real estate market, we continue to see rates increasing for multifamily and hotels, even for somewhat clean accounts. There doesn't appear to be a trend toward stabilization in rates and terms yet. Clients who experienced increases late last year are getting hit with increases again this year. Lloyd's of London is pulling back capacity in this market, and several domestic markets have completely stopped writing habitational accounts. We're also still seeing a push for higher all other peril and wind/hail deductibles as well as increased water damage deductibles, where loss history warrants." Lockton Companies

Graph by - The Council of Insurance Agents & Brokers

Rising Insurance Premiums

Based on discussions with senior representatives from the insurance industry, there are three components to these increasing premiums:

- An increase in catastrophic events.
- A significant increase in number and magnitude of events that historically did not reach catastrophic levels, such as the wildfires across North America.
- Increased frequency of smaller Unplanned Events primarily consisting of fire- and water-related incidents and concentrated within the multifamily, senior housing and student housing sectors but impacting all property types to some degree. The feedback from our interviews highlighted that insurance premium increases over the last few years have ranged anywhere from 5%-15%. Some asset managers we spoke with have experienced increases as high as 15% - 20% over multiple years. The multifamily sector typically gets hit first and the hardest by the impact of overall insurance price increases due to incident frequency.

20%-30%

The range of insurance premium increase over the last few years.

Massive Deductible Increases

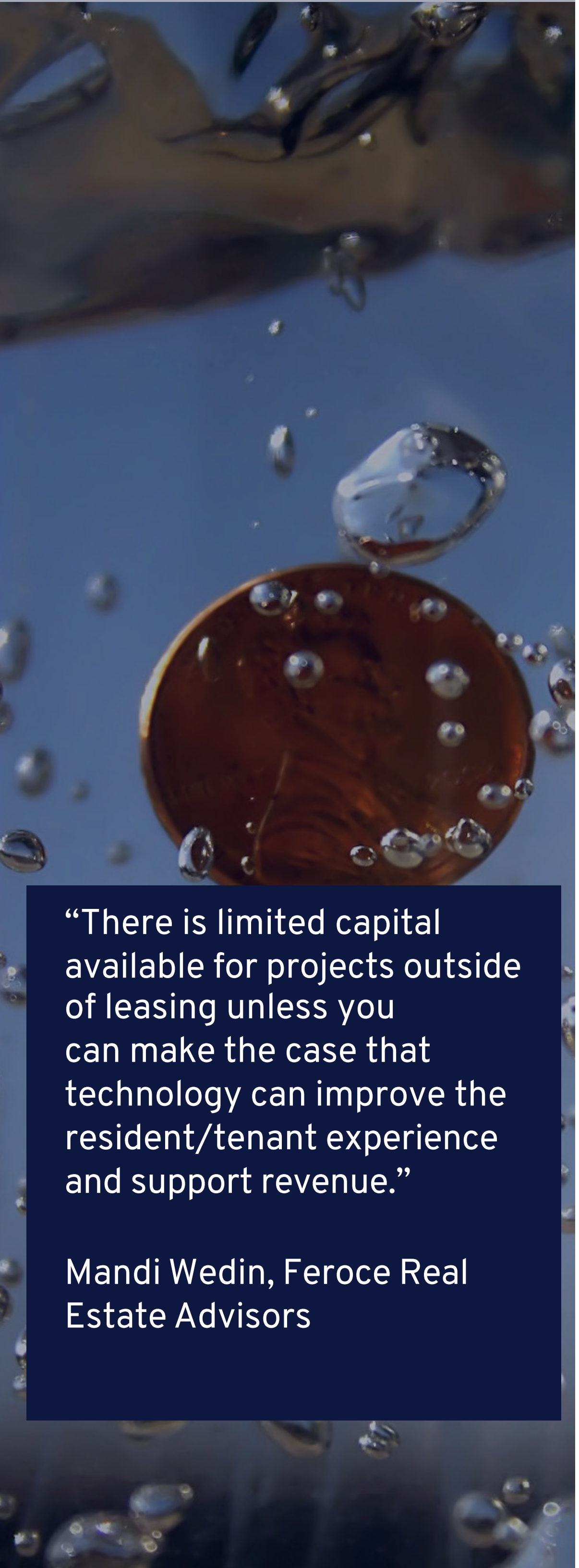
There has been a significant increase in deductibles in the last several years. Historically deductibles ranged from $10,000 to $25,000 per occurrence, but now it is not unusual to see them as high as $100,000 per occurrence. Another pricing structure that has been implemented by several carriers in the last couple of years maintains the overall deductible at $25,000 but carves out any water-related incidents and sets deductibles for these events as high as $250,000 per occurrence. Unless property owners start taking steps to minimize the frequency of these Unplanned Events, deductibles are anticipated to continue increasing.

Increasing Unplanned Events

Unplanned Events are growing in frequency and severity. Our industry leaders agree the most likely contributing factors are aging properties and equipment, the rapid pace of construction and resulting defects, as well as inconsistent or lack of proper preventative maintenance. With the substantial increases to deductibles described above, these costs have an increasingly detrimental impact on NOI and thus value. A few examples follow:

Example 1:

Large portfolios of legacy apartment communities built from the 80s through the early 2000s are consistently experiencing the need for either first or second iteration replacement requirements. As HVAC components get pushed beyond their expected useful lives with laymen quality repair work the rise in subsequent property damage is substantial.



> “There is limited capital available for projects outside of leasing unless you can make the case that technology can improve the resident/tenant experience and support revenue.”
>
> Mandi Wedin, Feroce Real Estate Advisors

- **Example 2:** In some regions, assets may be more prone to organic growth if residents do not operate the HVAC properly or during times of vacancy. There is a danger zone when humidity and temperature reach certain levels for an extended period, producing conditions which are conducive to organic growth. How long does it take for your maintenance team, or the resident, to notice the humidity? The longer it takes, the more significant damage you may have. Do you have to move the resident out to resolve the problem? Most insurance policies have exclusions for organic growth, so the costs are likely to hit NOI directly.

- **Example 3:** Let’s say there is an issue with overheating mechanical equipment, which sets off the fire alarm. In this case, there will be costs related to water extraction, repair costs for flooring and drywall, potential costs for temporary relocation of residents/ tenants, overtime for staff, and more. It is unlikely that these costs will reach your deductible, especially now that it may be as high as $250,000 if you have a policy that carves out water-related events, as noted above. Are these costs segregated from your typical repair and maintenance costs? How can you stop these incidents from happening or at least minimize the magnitude of the damage?

Rising Utility Costs

Exclusive analysis of 12 US cities shows a combined price of water and sewage has increased by an average of 80% between 2010 and 2018.

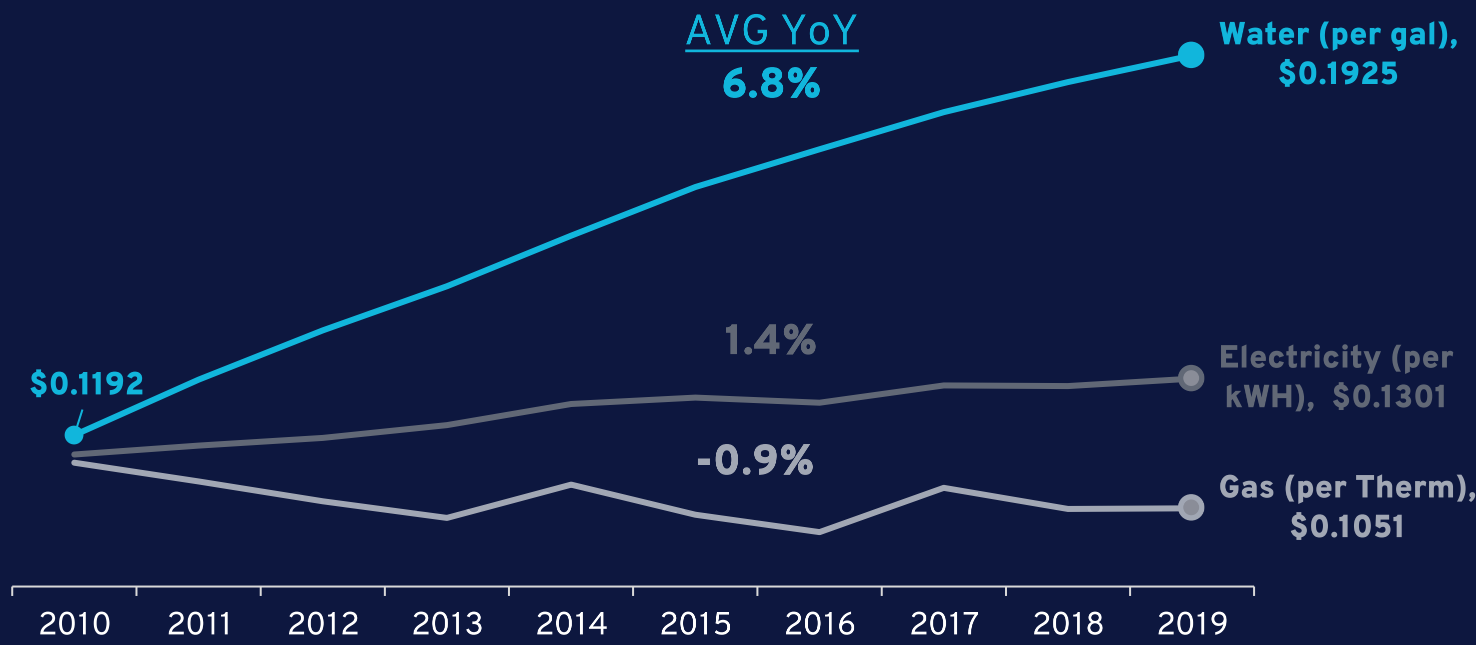
The U.S. population has doubled over the past 50 years, while our thirst for water has tripled. With at least 40 states anticipating water shortages by 2024, the need to conserve water is critical.[1] In 2020 More than 1.5 million households in 12 major U.S. cities with publicly operated water utilities owe $1.1 billion in past-due water bills, according to a Circle of Blue investigation.
The EPA predicts that one-third of all households will not be able to afford their water bill by 2025.[3] How can landlords and residents/ tenants work together to be more sustainably minded with the added benefit of lowering utility costs?

Rising Capital Costs

As portfolios age, capital budgets need to increase, which in addition to inflation, puts pressure on cash flow. Per the 3Q2020 Turner Construction Cost Index, between 2011 and 2019, cost increases accelerated and averaged more than 4%[4]. Cost increases in 2020 were down slightly, but with most delayed projects back on track at this point, we believe there is a greater likelihood of increases to return in the near term. Cost increases impact not only new developments, but also tenant improvements, renovations and capital replacements, making it critical for owners to optimize their capital resources. There are multiple technologies now available to help extend the life of capital equipment including HVAC, elevators, hot water heaters, chillers, boilers, etc. What steps are you taking during due diligence to evaluate where implementation of technology may help lower capital expenditures over your hold period? Are you providing all of the data and tools to your property teams to operate your assets in the most efficient and cost effective way?

Water Prices are Rising at 3x Inflation

The EPA predicts 1/3 of households will not be able to afford their water bill by 2025



Sources: https://www.eia.gov, https://www.statista.com/statistics/720418/average-monthly-cost-of-water-in-the-us/

Top 10 Water Management Techniques

Following are the top 10 water best management practices that EPA has implemented to reduce water use at facilities throughout the Agency.

1. Meter/Measure/Manage
2. Optimize Cooling Towers
3. Replace Restroom Fixtures
4. Eliminate Single-Pass Cooling
5. Use Water-Smart Landscaping and Irrigation
6. Reduce Steam Sterilizer Tempering Water Use
7. Reuse Laboratory Culture Water
8. Control Reverse Osmosis System Operation
9. Recover Rainwater
10. Recover Air Handler Condensate

Reputational Risk

You cannot ignore the potential for Unplanned Events to have a significant impact on revenue. While all property types have Unplanned Events that are disruptive to the residents/tenants, multifamily assets typically have a higher frequency of incidents due to their very nature. Multifamily assets have much more equipment likely to cause Unplanned Events, including washers & dryers, refrigerators, hot water heaters, HVAC, multiple sinks, etc. The disruption that these unexpected incidents cause is incredibly frustrating because they disrupt someone's home which these days can also impact virtual work and school. Asset managers agree that there is very little tolerance for disruption and having maintenance staff in homes these days. This demands owners start focusing more on solutions to stop and/or minimize disruptions. Commercial office properties will typically experience fewer disruption events; however, the severity can be far more significant given the larger, more expensive equipment and potential property damage. One asset manager we interviewed indicated the average water damage loss was $40,000 to $70,000 per occurrence in their commercial portfolio.

Difficulty Determining ROI

One of the challenges of evaluating technology platform solutions is the difficulty of accessing the data to calculate a return on investment (ROI). The availability of the underlying data is critical for owners to identify where the opportunities exist to make an investment in a technology platform. In cases where owners have visibility into the data, such as utility usage, investments are made in solutions that reduce energy consumption and create value. In cases where the cost savings and the revenue improvements are not easily quantifiable, the ability to calculate the ROI is hampered. In order to better evaluate the opportunities to create value, more owners are using different lenses to analyze the data that they already track while increasing the number of data points that they track. With this information, owners are able to pursue technology solutions that create long-term value. During our interviews, we learned that across all property types and owners, there is no prevailing standard for tracking costs attributed to Unplanned Events. The owners noted that they did not have access to historical data related to Unplanned Events due to a few key issues: differing policies for when and which costs were capitalized or expensed; the costs for a single event were spread out across multiple expense line items; and, in many cases, an event was not tracked when the costs fell below the deductible. Additionally, many owners did not track if Unplanned Events influenced a tenant's decision to vacate or renew a lease. Given this lack of data, owners highlighted the difficulty of calculating the ROI for a solution to reduce the number and impact of Unplanned Events. As noted by one asset management team we interviewed, the lack of data is a fixable problem.

To address the data on the cost side, they now track the expenses related to Unplanned Events in a separate account, which will soon provide them with a true representation of the impact on the asset's NOI and cash flow. As insurance deductibles increase significantly and create higher uninsured exposures, the need for cost tracking of Unplanned Events becomes more acute. The owners who implement new procedures for tracking the cost and revenue impacts will have the opportunity to create value at the asset through the implementation of technology solutions based on a clearly calculated ROI.

Finding the Solution

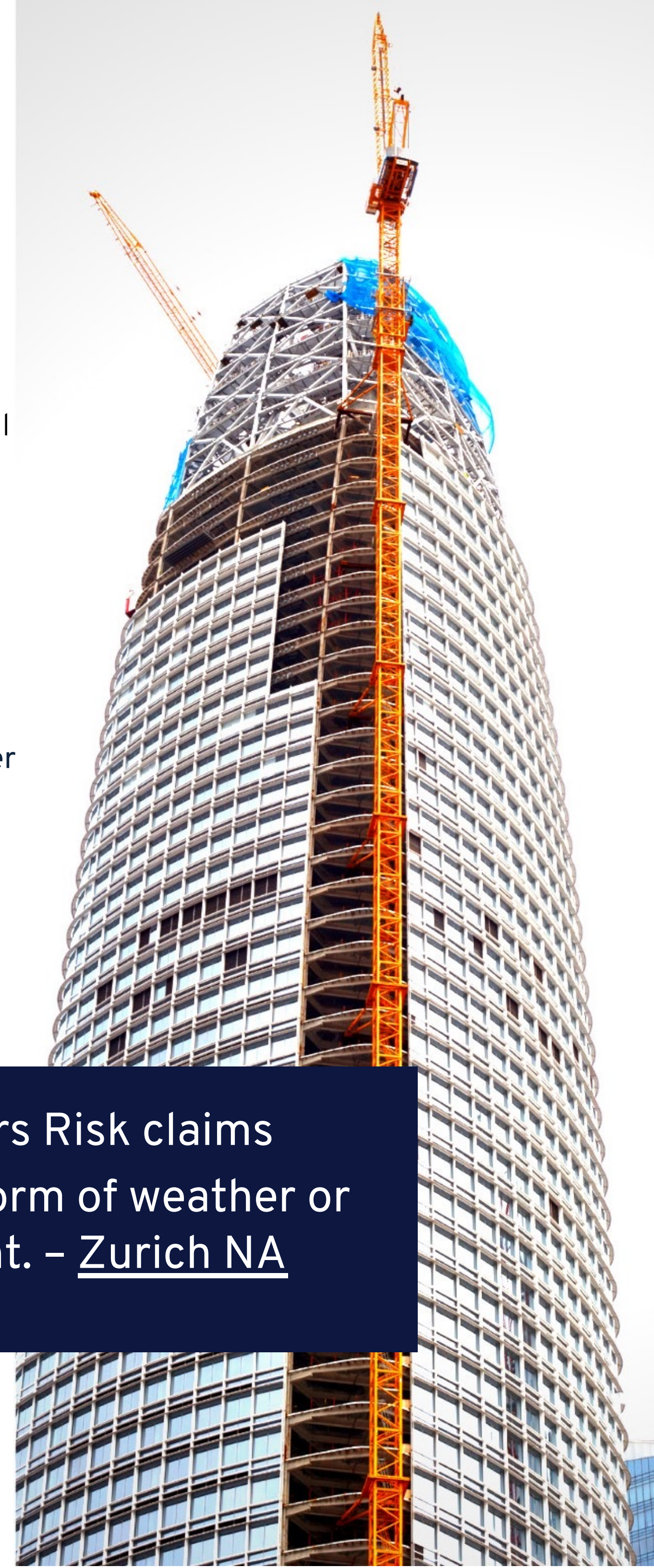
So, where do you even begin? Identifying the problem is an important step, but taking action once the problem is identified is critical. Clear and usable data insights should, if used properly, reduce confusion and unnecessary spending - both operating expenses and capital expenditures. This is precisely why the threat of inevitable loss events keep asset managers up at night. Below, we provide suggestions for property teams to implement in order to mitigate exposure to these Unplanned Events and, importantly, the resulting expense increases and revenue attrition - all of this with a mind to improving NOI and cash flow.

- Implement Technology
- Submeter for Direct Utility
- Responsibility
- Improve Resident/Tenant Satisfaction
- Work with Your Insurance Carriers
- Improved ROI Calculations

Construction Risk Mitigation

Insurance loss data over the past 10 years shows that water damage has become a leading cause of Builder's Risk claims" per Kevin Farlow, CRIS (link to article). The insurance professionals we spoke with also noted that there has been a significant increase in incidents, mostly related to water, at properties that are still under construction. If this trend continues, you will continue to see substantial increases to Builder's Risk coverage in the near future. Developers and contractors need to begin thinking about ways to implement technology to address this issue such as smart water meters with shut-off valves.

Litigation "Dispute values, durations and volume all increased in North America. After continuously dropping since 2013, the average value of disputes rose from $16.3 million to $18.8 million. The average time taken to resolve construction disputes for North America increased from 15.2 months in 2018 to 17.6 months in 2019." - Arcadis



50% of all Builders Risk claims resulted from some form of weather or escape-of-water event. – Zurich NA

FINDING THE SOLUTION

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Implement Technology

There are many new technologies available to help minimize the number and magnitude of Unplanned Events and extend the life of capital equipment.

- Consider the earlier example of the overheated mechanical equipment. A connected temperature sensor could have provided early notification of the rising temperature near the mechanical equipment and allowed the maintenance team to address it quickly. A connected smoke alarm could help you prevent the escalation of a dangerous kitchen fire that could ultimately save an entire building and the residents that live inside.
- An integrated access control system could prevent unauthorized access to a space which could result in theft, damage and more.
- Smart leak sensors could significantly shorten the notification time of your next water heater tank failure or HVAC condensate line backup.
- Smart sensors can also help identify conditions that are conducive to organic growth, especially in areas that may not be out in the open and easily visible. Implement Technology
- Smart water meters can also be utilized with other technology to provide a shut-off valve in the event of a large water event.
- There are many variations of IoT sensors available to assist with utility savings and sustainability goals.

Assume you have acquired a multifamily asset that has original hot water heaters which are nearing the end of their useful life. Historically, owners would budget to replace a specific number each year. Given that hot water heaters typically start with small leaks before complete failure, leak detection technology can Identify those units that need to be replaced immediately. This allows other units that may still have useful life remaining to be replaced at a later date, thus extending the capital replacement dollars.

We have just touched on a few of the technologies available to optimize your building operations and improve NOI and cash flow.

"Many of the commercial carriers are addressing the issue of water damage via risk engineering focus and coverage changes.
As water sensing technology continues to evolve, the capabilities, effectiveness and cost of these devices are making it more desirable to clients. Over time I believe they will be more commonplace than they are now."

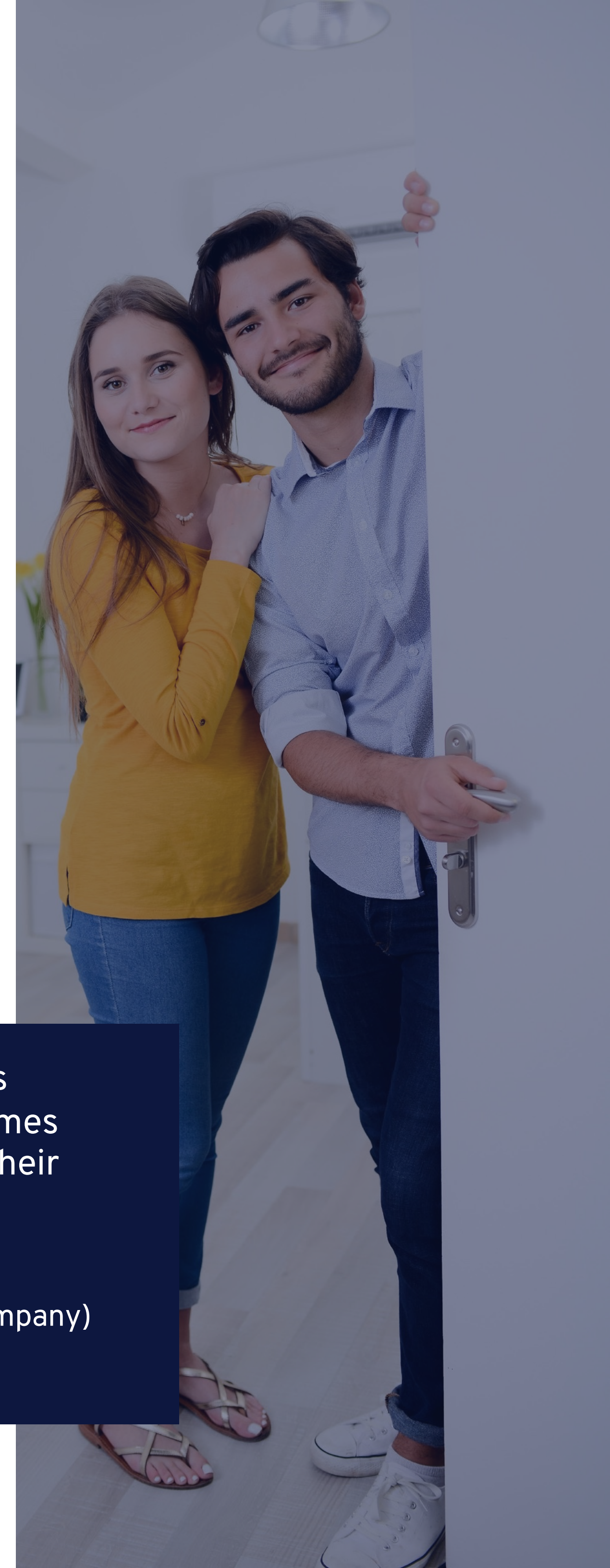
Patrick Daley, Head of Large Property, The Hartford

Submeter for Direct Utility Responsibility

Direct responsibility for utility costs can lower usage. A 2004 study sponsored by the EPA, National Apartment Association, and cities and water districts in the western US showed that separately metering or submetering reduced water usage by approximately 15%. Note that this study concluded there were no water savings while using ratio utility billing systems (RUBS)[3]. According to Multifamily Utility Company, as of 2019, “only 41% of multifamily owners are billing residents back for the utilities they use.” While the majority of apartment homes in the U.S are separately metered for electricity, that isn’t the case for water. Have you considered submetering water? Given the potential for climate change impacts related to water, we are likely to see more governmental regulation around water submetering. California is leading the way by adopting new regulations requiring any new multifamily properties constructed after January 1, 2018, have water separately metered or submetered. Owners may be able to obtain beneficial financing for installation of smart water meters through the PACE Equity Financing program available in a large and growing number of states.

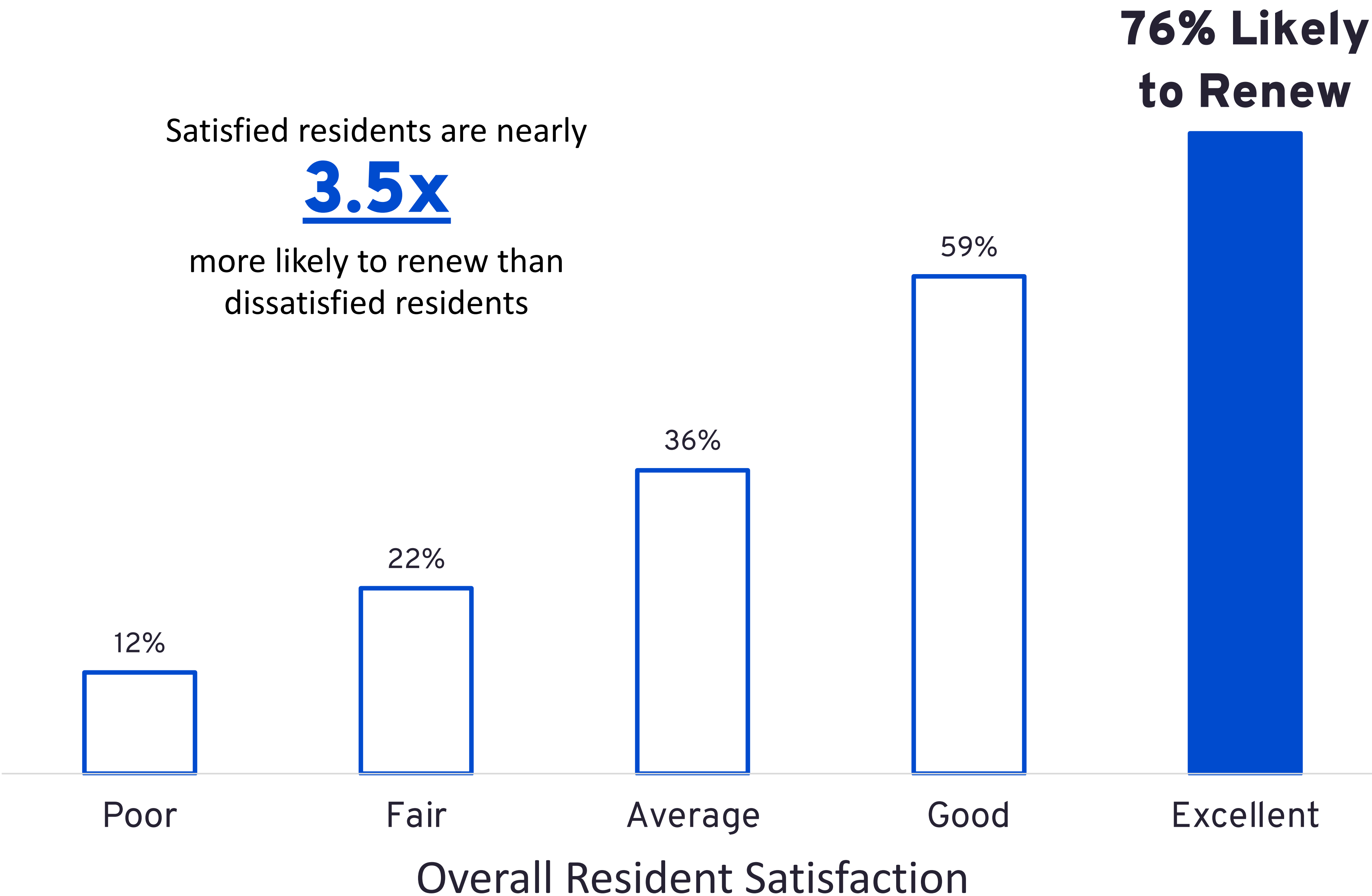
Increase Resident/Tenant Satisfaction

“For over 30 years, Kingsley has studied customer experience and loyalty in the real estate industry. And over the years, through up and down real estate cycles, we’ve seen a consistent and enduring trend of higher levels of customer satisfaction leading to a greater likelihood of lease renewal. In fact, a satisfied apartment resident is typically over three times more likely to renew their lease than a dissatisfied resident. We’ve also consistently seen that property management’s performance is the most important driver of resident satisfaction. Those managers that are responsive in solving residents’ problems, tend to achieve elevated levels of customer loyalty.” Focus your resources on those areas which will improve resident satisfaction. Increase revenue by improving the user experience. If you can increase your retention rate even slightly, you will start to see improved revenue.



> “A satisfied resident is typically over three times more likely to renew their lease.”
>
> Jim Falco, EVP
> Kingsley (a Grace Hill Company)

Link Between Satisfaction and Renewal



Source: The Kingsley Index™

Collaborate with Insurance Carriers

Insurers can be a resource to their policyholders by taking the “Partnership Approach” utilized by firms like FM Global among others. Ensure your insurance carriers have comprehensive information about your portfolio, and they are not just making general assumptions when evaluating the risk. There are new technologies out there to help gather and store this information.

Partner with your carrier - Get their thoughts on what risk management options are available from technology providers that would come with the benefit of rate relief on premiums and deductibles. “Consider off-cycle market meetings and loss control visits with potential alternative carriers. Waiting until the throes of a busy renewal date may not allow enough time for effective conversations.”
Willis Towers Watson – Marketplace Realities 2020 Report
Collaborating can shape and guide decisions to adopt technology that ultimately provide improved loss ratios for both the carrier and policyholders.

Specifically:

- Premium rate relief if risk management technology is adopted. Some carriers for personal insurance lines on single-family homes will purchase leak detection technology as a loss prevention benefit and require the policyholder to implement the technology in exchange for lower premiums.
- Lower the cost of acquiring environmental insurance if the installed technology can alert ownership to conditions that could result in organic growth, as noted previously.

“To help prevent or reduce significant losses due to water intrusion, building owners or managers should understand their exposures, take proactive measures to avoid water damage, and be prepared to act in the event of a water intrusion.”

Patrick Daley, Head of Property, The Hartford

PRACTICAL IMPLEMENTATION

Go for the quick wins but think long term about your property risk management strategy so that you choose truly scalable and cost-effective tech solutions that are as future proof as possible. Ideal solutions have both hard and soft ROI benefits.

Dean Fung-A-Wing
Co-Founder & CEO of Kairos

Identify Pain Points

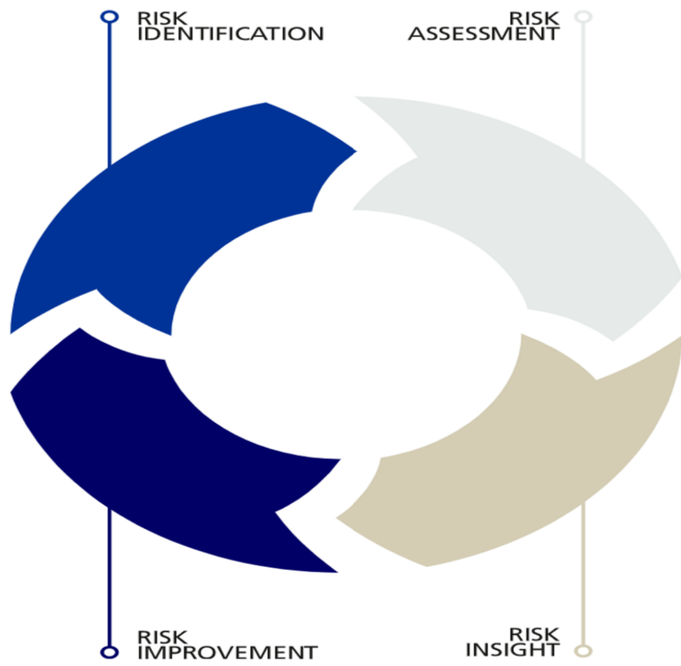
You will need to understand the impact of the increased deductibles for each asset. Take some time, even for a few quarters, to review maintenance, asset/inventory, operations, and employee reports, especially if the information reporting can be generated from tech solutions managing this data. Determine where dollars are spent that may be falling under the radar to find opportunities for savings.

Prepare

If you are not ready to implement technology today, start tracking your costs now. You may determine that your losses are more extensive than you anticipated. Once you have the data, you will be in a great position to evaluate those technologies that will assist you in solving the problems specific to your portfolio.

Take Action

If you are ready to take the plunge, then determine your most significant exposure to the best of your ability. Identify the available technologies to help with your particular risk. Schedule demos with each provider and narrow down your options. If you are comfortable with the technology, then talk with your carrier to see if they will work with you to lower your premiums/deductibles. You may have to move forward with the technology first, by doing a pilot. Then you will have the data to compare the property's historic losses compared to the losses after implementation of the technology. Prepare



"There is a growing appetite (amongst Commercial Insurance Carriers) for doing more than paying claims. It is an achievable goal however the journey to technology adoption is not quick."

Matteo Carbone, Founder and Director, IoT Insurance Observatory

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