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December 31, 2020

The Honorable Ronald D. Kouchi,
President and Members of the Senate
Thirty First State Legislature
State Capitol, Room 409
Honolulu, HI 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of
Representatives
Thirty First State Legislature
State Capitol, Room 431
Honolulu, HI 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting two (2) copies of the Department of Labor and Industrial Relations (DLIR) State Fire Council's Reduce Propensity Ignition Cigarette Program Report for the fiscal year ending June 30, 2020, as required by section 132C-3(e), Hawaii Revised Statutes (HRS).

In accordance with section 93-16, HRS, I am also informing you that the report may be viewed electronically at <http://labor.hawaii.gov/find-a-report/>.

Sincerely,

Anne Eustaquio
Director

Enclosure

Hawaii State Fire Council



Current Status of the Reduced Propensity Ignition Cigarette Program in Hawaii

*Submitted to
The Thirty-First State Legislature
January 2021*

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State Fire Council (SFC)

The SFC is administratively attached to the State of Hawaii's (State) Department of Labor and Industrial Relations (DLIR) and comprised of four county Fire Chiefs. The SFC's primary mission is to develop a comprehensive statewide fire emergency management network for the protection of life, property, and the environment.

The SFC is responsible for adopting a state fire code, applying and administering federal fire-related grants, and administering the Reduced Ignition Propensity Cigarette (RIPC) Program. The SFC advises and assists county fire departments, where appropriate, and prescribes standard procedures and forms related to inspections, investigations, and reporting of fires.

It also advises the Governor and legislature on issues relating to fire prevention, protection, fire safety, and any function or activity for which the various county fire departments are responsible.

The SFC staff consists of two Administrative Specialists, a Secretary, and an RIPC Program Specialist. The DLIR administers the appropriated funds to pay for the salaries of three positions, and the salary for the RIPC Program Specialist is acquired from certification fees received every three years from cigarette manufacturers.

<https://labor.hawaii.gov/sfc/>

Purpose

This report is being submitted to the State Legislature pursuant to Hawaii Revised Statutes (HRS) 132C-3(e) following the conclusion of each three-year RIPC certification period. The purpose for submitting this report is two-fold—to promote fire safety, especially as it relates to smoking-related fires and its effect on the State's first responders, residents, and visitors and to provide our legislators with an update on the accomplishments of the RIPC Program from July 1, 2017 through June 30, 2020.

Regulatory History

The concept for a cigarette that would self-extinguish surfaced in 1929 after a smoking material fire in Lowell, Massachusetts (MA). Then MA Congresswoman Edith Nourse Rogers called for the National Bureau of Standards to develop a self-extinguishing cigarette. After three years of research, the concept was brought to the cigarette manufacturers, but was never implemented. The following is a brief chronology of how the RIPC was finally enacted into law, nationally and in Hawaii:

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- In 1974, Senator Phil Hart of Minnesota introduced a bill to require self-extinguishing cigarettes, but was defeated by tobacco interest groups.
- In 1979, the American Burn Association and the International Association of Fire Chiefs formed a grassroots campaign for fire-safe cigarettes.
- In that same year, MA Congressman Joe Moakley introduced a fire-safe cigarette bill to prevent future cigarette fire tragedies from occurring.
- In 1980 and 1984, Senators Alan Cranston of California and John Heinz of Pennsylvania, respectively, introduced similar bills. Concurrent Congressional efforts continued to be introduced without success until 2000.
- Campaign organizers, together with the National Fire Prevention Association (NFPA), realized that the political climate in Washington had become more hostile to cigarette regulation. So they redirected the campaign at the state level. In August 2000, New York became the first state to enact a cigarette fire safety law. Their regulatory process took three and one-half years and became effective June 28, 2004.
- MA Congressman Moakley continued to spearhead the movement until his death on May 28, 2001. Senators Richard Durbin (Illinois) and Samuel Brownback (Kansas) and Congressmen Edward Markey (MA) and Peter King (New York) reintroduced Moakley's Fire Safe Cigarette Act. Canada became the first country to require fire-safe cigarettes using the same test method when their law became effective on October 1, 2005.¹
- During the ensuing years, each of the 50 states passed their own versions of an RIPC law, which was based on New York's original statute.
- The 2008 Hawaii State Legislature and the Governor signed Act 218 into law, and Hawaii became the 36th state to require only RIPC be sold. By the end of 2011, RIPC laws were effective in all 50 states and the District of Columbia.

Hawaii already had programs in place to address the alarming health statistics that have been linked to cigarette smoking and smoking-related materials. However, the RIPC law helps regulate the type of cigarettes that can be sold in Hawaii, thereby reducing the incidents of fires caused by cigarettes and smoking-related materials and decreasing the number of injuries, fatalities, and property loss that occur with home-related fires.

¹ Coalition for Fire Safe Cigarettes (2011), *History of Fire-safe cigarettes*, NFPA, Quincy, MA

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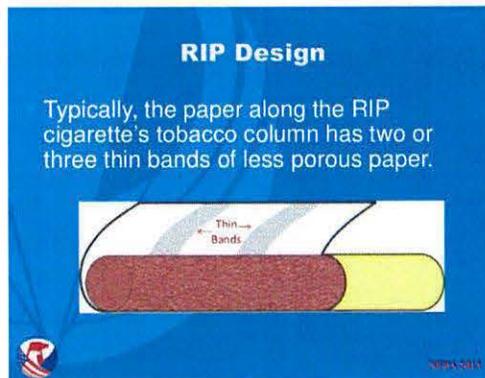
https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0132C/HRS_0132C-.htm

Recently, an alternate smoking paraphernalia rapidly became a prevalent hazard in our State. Although E-cigarettes are not covered under Hawaii's RIPC law, this report will shed some insight on "vaping" hazards, some of which directly involve fires and explosions.

<https://no-smoke.org/wp-content/uploads/pdf/E-Cigarette-Explosions-and-Fires.pdf>

RIPC Defined

RIPC, also known as fire standard-compliant (FSC) or fire-safe cigarettes, utilizes paper with two or three thin bands of less-porous paper that acts as "speed bumps" to slow down a burning cigarette. If an RIPC is left unattended, the burning tobacco will reach one of the speed bumps and self-extinguish.



(Photo courtesy of the U.S. Consumer Product Safety Commission and the NFPA)

Hawaii's RIPC law does not apply to cigars, roll your own cigarettes, cigarettes sold on federal property, duty-free cigarettes, and devices known as E-cigarettes.

Fire Impact

According to the Centers for Disease Control and Prevention (CDC), only 15.5% of the adult population were current smokers in 2016 compared to 33.2% in 1980. Despite this fact, smoking remained the leading cause of home fire deaths during the five-year period from 2012 to 2016. During this five-year period, an average of 18,100 (5%) reported residential structure fires were started by smoking materials. These fires killed an average of 590 people (23%), injured 1,130 (10%), and caused \$476 million in direct property damage (7%) each year.

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Note that an increase in indoor smoking bans resulted in an increase in residential smoking-related fires that started outside of a home. The leading area of origin for home smoking fires between 2012 and 2016 was an exterior balcony or open porch (18%).²

A new low of 16,500 home smoking material fires occurred in 2016, which was 77% lower than the 70,800 fires in the 1980s.

However, although the 2016 estimate of 660 home smoking material fire deaths was 64% lower than the 1980 estimate of 1,820 deaths, it was the highest seen since 2006. The smallest number of smoking material fire deaths was in 2011. The increase in smoke alarm use since the late 1970s and early 1980s and the reduction in people who smoke have played key roles in contributing to the overall reduction in fires and fire deaths of all types.³

Hawaii's RIPC law helped to reduce the number of fires started by cigarettes in the State. However, other smoking-related materials have unfortunately been the cause of fires. These materials include cigars, matches, cigarette lighters, and other open flame or smoking materials. The following are some highlights of smoking material fires that occurred in the period highlighted in this report.

Child playing with lighter caused building fire, explosion in Palolo (April 3, 2018)

Honolulu Fire Department officials determined that a child playing with a lighter started a fire at the Palolo Valley Homes. Six units at the complex were involved. Total damage to these units was \$1,115,000. Three people at the scene were transported to hospitals, one in critical condition.⁴

Follow-up article: ***Cleanup underway in Palolo as expert explains danger of oxygen-fueled explosion.*** A 3,500-liter oxygen cylinder used for medical purposes was heated and compromised during the blaze causing the explosion which rocked the complex. It is important to note that fires exposed to additional oxygen from one of these cylinders will rapidly disperse, enhancing the intensity of the blaze with the possibility of an explosion. Fire officials said, "It's important for parents to supervise their children, and keep matches and lighters out of their reach."⁵

² Ahrens, Marty (2019), *Home Fires Started by Smoking*, NFPA, Quincy, MA, p.1

³ Ibid., p. 2

⁴ Pascual, Cherry (2018), *Child playing with lighter caused building fire, explosion in Palolo* SJL, Lily Broadcasting. Honolulu, HI

⁵ Namata, Bridgette (2018) *Cleanup underway in Palolo as expert explains danger of oxygen-fueled explosion*

Ewa Beach house fire sparked by cigarette-smoking gear (June 20, 2018)

Honolulu Fire Department fire investigators determined that unattended smoking materials found in a bedroom caused a fire at a home in Ewa Beach. Black smoke was already billowing out a second-floor bedroom when fire fighters arrived. Five occupants inside the residence were able to safely evacuate the burning building which caused \$187,000 of damage to the structure and \$8,000 to its contents.

A spokesman for the Honolulu Fire Department stated that ashtrays, lighters, packs of cigarettes and other smoking materials were found in the bedroom where the fire originated. There were no injuries.⁶

Man smoking in brush cause of fire (July 22, 2019)

A teenager was arrested after admitting that embers from a marijuana pipe he was smoking ignited a fire that ultimately burned about 80 acres of brush mauka of Piilani Highway just north of Mapu Place in Kihei. Maui police said the teen stated the fire spread quickly, and that he wasn't able to put it out. He was released pending further investigation of second degree reckless endangerment. There were no injuries and no damages reported.⁷

Smoking-Related Fires in Hawaii

Between January 1, 2000, and June 30, 2010, there were a total of 2,128 smoking-related fires. Property losses amounted to \$33,039,765, and content losses amounted to \$5,617,460 (see Table 1). There were 6 civilian fatalities, 40 civilian injuries, and no fire fighter fatalities; however, 21 fire fighter injuries resulted from these fires (see Table 3).

Between July 1, 2010, and June 30, 2019, there were a total of 728 smoking-related fires. Property losses amounted to \$19,327,095, and content losses amounted to \$5,264,350 (see Table 2). There were 10 civilian fatalities, 35 civilian injuries, and no fire fighter fatalities; however, 5 fire fighter injuries resulted from these fires (see Table 4).

These statistics show a roughly 67% reduction in the total number of smoking-related fires and almost a 40% reduction in property losses compared with the period prior to and after the passing of the State's RIPC law (see Tables 1 and 2). Content losses remained the same during both time periods.

⁶ Staff (2018), *Ewa Beach house*

⁷ Staff (2019), *Man smoking in brush cause of fire*

Unfortunately, while there was a slight decrease in civilian injuries after the RIPC law was enacted, the number of civilian fatalities increased during that same period (see Tables 3 and 4). Sadly, these numbers mimic the national statistics.

Electronic Cigarettes (E-Cigarettes)

E-cigarettes or E-Cigs have been sold in the U.S. since 2007 as a means to help smokers kick their reliance on tobacco. They have been heavily promoted as a safe alternative to the traditional cigarette. While E-cigarette explosions are relatively rare, they can cause serious harm. Although not a major focus of this report, risks of injury from explosions and fires were included as an aspect of smoking material-related hazards meriting concern within the fire service community across the U.S.

According to a 2017 report by the U.S. Fire Administration (USFA), a total of 195 explosions and fires involving E-cigarettes were documented by the U.S. media between January 2009 and December 31, 2016. The incidents resulted in 133 acute injuries, of which 38 (29%) were severe. Fortunately, no deaths resulted during any of these incidents.⁸

Other than E-cigarette devices, no other consumer product places a battery with a known explosion hazard in close proximity to vital parts of the human body. Of the 195 documented E-cigarette incidents, 61 occurred while the device was in a pocket, 60 occurred while the device was in use, and 48 resulted while the device battery was being charged.⁹

Recommendations shared by the USFA in their report included the following:

Use only products that have been evaluated for their safety. Look for UL (a leading global safety science company) markings on these devices. However, even with the protections being implemented to E-cigarette devices, the possibility of battery failure and injury cannot be eliminated. As long as E-cigarette use increases and lithium-ion batteries continue to be used to power these devices, explosions and fires will continue to increase, and unfortunately, severe injuries will continue to occur.¹⁰

In 2016, the U.S. Food and Drug Administration (FDA) [brought E-cigarettes](#) under its tobacco product authority. Before this rule was finalized, E-cigarettes, cigars, and hookah and pipe tobacco products could be sold without any review of their ingredients, how the products were made, and any potential dangers each might have. Last year, the agency held [a public workshop](#) that focused on concerns regarding the safety of E-

⁸ McKenna, L. (2017), *Electronic Cigarette Fire and Explosions in the United States*, p. 1

⁹ Ibid., p. 6.

¹⁰ McKenna, L. (2017), *Electronic Cigarette Fire and Explosions in the United States*, p. 13

cigarette batteries. The FDA also launched a [safety campaign](#) and offered tips on how to help avoid E-cigarette explosions.¹¹

E-Cigarette Fires in Hawaii

An E-cigarette sparked a fire on January 12, 2016, on a Hawaiian Airlines flight from Oahu to Maui. Maui police say the fire started in the baggage area. The pilot was able to extinguish the fire with a fire extinguisher and land the plane safely. Investigators later found that the fire started from an E-cigarette that was stored in a checked bag. Authorities tracked down the owner who admitted to storing it in his checked bag, which violates federal Department of Transportation rules. No charges were filed against the passenger.¹²

On December 3, 2017, a Pearl City man suffered severe injuries to his face when an E-cigarette exploded in his mouth. Matt Yamashita, 25, said, "I just got out of my car and I was ready to play basketball, but I just wanted to take a few puffs of vape before I played. As soon as I took that first rip, it just blew up in my face." The explosion took out four of his teeth. About 40 stitches are now holding his mouth together. Yamashita said he kicked his traditional cigarette habit and switched to vaping five years ago.¹³

Smoking and Fire-Related Trends

According to the CDC, only 15.5% of the adult population were current smokers in 2016 compared to 33.2% in 1980. The CDC also reported that 13.7% (34.2 million people) of all adults (aged 18 years or older) were current smokers in 2018. However, despite today's reduced percentage of smokers, cigarette smoking and other smoking-related materials remains the leading cause of home fire deaths. According to Truth Initiative, 12.8% of adults in Hawaii were smokers in 2017, compared to the national average which was 17.1%. Among Hawaii high school students, 8.1% smoked at least one cigarette a day compared to the national average of 8.8%. In 2017, 4.7% of adults in Hawaii used E-cigarettes and smokeless tobacco.

According to the FDA and the CDC's 2018 National Youth Tobacco Survey, more than 3.6 million teens were reportedly addicted to vaping, the term used to describe someone smoking an E-cigarette. Other studies show that young people who take up vaping are four times as likely to escalate to regular cigarettes later in life. "We've seen a great

¹¹ U.S. FDA, (2016), *The Facts on the FDA's New Tobacco Rule*, Silver Spring, MD

¹² HNN Staff (2016, January 16), *E-cigarette sparks fire on Hawaiian Airlines flight to Maui*

¹³ Devera, J. (2017), *GRAPHIC: Hawaii man seriously hurt after e-cig explodes in mouth*

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increase in the rates of JUUL (a popular American E-cigarette company) use since it came on the market a few years ago, and we're seeing people use it at a younger age," stated Dr. Bryan Mih, a pediatrician at Kapiolani Medical Center for Women and Children. Nationally, nearly 12% of high school students and 3% of middle school students report using E-cigarettes regularly. Hawaii has more than twice the national average, with 26% of high school students who say they have used E-cigarettes and other related products more than once.¹⁴

<https://www.cdc.gov/tobacco/datastatistics/factsheets/fastfacts/index.htm#beginning>
<https://truthinitiative.org/research-resources/smoking-region/tobacco-use-hawaii-2019>

Hawaii RIPC Highlights, Projections, Efforts (July 1, 2017 through June 30, 2020)

Every three years, cigarette manufacturers must submit documentation to recertify their product. A fee of \$375 must accompany each brand's name/style certification. Each manufacturer can cease sales of their various products at any time, and fees are not refundable. In the last three years, four manufacturers discontinued their sales. The following are projected for the next three years:

- An estimated average of \$97,000 in certification fees will be collected.
- Fees collected will be used to cover ongoing program expenses, including salaries and benefits, office supplies, travel, expenditures to conduct inspections, and other related duties stipulated in HRS 132C.
- If the RIPC Special Fund were reduced to a critical level, the RIPC office would reevaluate the certification process and increase fees to ensure the program could continue to be effective. As of June 30, 2020, the RIPC Special Fund balance was just over \$671,000. Prior to the hiring of the RIPC Specialist, certification fees were being collected, but was not being expended by the program. The balance is sufficient to support the administration and enforcement duties of the RIPC Program. A surplus is favorable because of the uncertainty of future certification fee collections.

In this period, 1,925 field inspections were conducted on Oahu (see Table 5). A total of 131 field inspections were conducted on Hawaii and Molokai. As of June 30, 2020, a total of 867 brand/styles cigarettes were approved for sale in the State. Field inspections revealed that less than one-half of these brand/styles are actually being sold in retail outlets.

¹⁴ Hawaii Pacific Health (2019), *Not so hidden dangers of electronic devices*

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Just under 600 cigarette brand/styles were purchased and sent for independent RIPC testing (see Table 5), of which four brand/styles failed. This office conducted subsequent testing of these cigarettes and, in two cases, manufacturers were informed to cease selling these brand/styles in Hawaii until subsequent tested samples passed.

How to Prevent Fatal Residential Fires

A Swedish study that analyzed residential fatal fires to identify prevention strategies noted that smokers receiving home care were a particularly high-risk group. These victims tended to be intimate with ignition, i.e., their clothing or bedding ignited and there were mobility issues that made escape impossible.

Based on these findings, the authors predict that conventional thermally activated sprinklers could prevent 31% of these deaths, one-half of the 68% estimated overall. A suppression system that was activated by a smoke detection system could potentially save 88%, although the higher rates of unwanted smoke alarm/detector activation would be an issue.

Only 14% would be saved by a home smoke alarm alone. In the short term, the authors recommend flame-resistant bedding and clothing for this population. These predictions are to prevent 50% and 31% of these deaths, respectively.¹⁵

Positive Cigarette Legislation

During the 2019 Legislative Session, lawmakers in Hawaii proposed legislation that would begin phasing out cigarettes in the State which would ban them altogether within the next several years, at least for people aged 100 or younger.

The aim of the bipartisan Hawaii H.B. 1509 is to raise the legal minimum age to use cigarettes to exclude everyone but centenarians by 2024 to “keep people healthy and alive in the Aloha State,” stated Representative Cynthia Thielen, one of the sponsors of the bill.

According to the bill, cigarettes are “considered the deadliest artifact in human history,” causing “more preventable disease, death, and disability than any other health issue” in the State. The bill aims to raise the legal minimum age to purchase or possess cigarettes to 30 by next year, 40 by 2021, 50 by 2022, 60 by 2023, and 100 by 2024. The timetable would allow the State to plan for a loss in cigarette tax revenue. The bill does not apply to cigars, chewing tobacco, or E-cigarettes.

¹⁵ Ahrens, Marty (2019), *Home Fire Started by Smoking*, NFPA, Quincy, MA, p. 7

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Currently, Hawaii smokers are paying a cigarette tax of \$3.20 per pack, which is the fifth highest in the country. Only New York (\$4.35), Connecticut (\$4.35), Rhode Island (\$4.25), and Massachusetts (\$3.51) have implemented higher taxes on cigarettes in the U. S. In 2015, Hawaii became the first state in the nation to ban smoking for anyone younger than 21.

Dr. Richard Creagan, a retired physician said, "...this is more lethal, more dangerous than any prescription drug, and it is more addicting," he told the Hawaii Tribune-Herald while referring to cigarettes. "In my view, you are taking people who are enslaved from a horrific addiction, and freeing people from horrific enslavement. We, as legislators, have a duty to do things to save people's lives. If we don't ban cigarettes, we are killing people."¹⁶

Unfortunately, this proposal was held back by the House Committee on Health. The committee explained that the bill was too extreme for the State at this time and more feedback from the public is needed before allowing it to become law.¹⁷

Hawaii could mark another first in the nation by increasing the minimum age to 25 to purchase tobacco and electronic smoking devices. Nearly four years after Hawaii banned the sale of cigarettes to those under the age of 21, H.B. 2507, which was co-introduced by Dr. Creagan and Representative John Mizuno, Chairman of the House Committee on Health, would make it illegal for anyone younger than age 25 to purchase cigarettes. "The impetus for that legislation was the deleterious effect of nicotine on the developing teenage and young adult brain," said Dr. Creagan, adding that it was in part due to the "epidemic of vaping use by teenagers." Opposition and support for this legislation was evenly split among the testifiers.

Before H.B. 2507 can go back to the floor, the House Committee on Judiciary and Finance must advance the bill to the full House for a vote. The bill can then crossover to the Senate for consideration.

In addition to H.B. 2507, there are several other bills moving in the Legislature related to tobacco and electronic smoking device use and sales.

H.B. 2540, also introduced by Dr. Creagan, would have banned cigarette sales by increasing the minimum age to purchase them to age 100 by 2025 and passed the House Committee on Health after being gutted and its contents replaced. The measure, if passed, would increase taxes on tobacco and tobacco-related products by an unspecified amount.

¹⁶ Bever, Lindsey (2019), *Younger than 100? Soon, you might not be able to smoke cigarettes in Hawaii*

¹⁷ Staff (2019), *Hawaii cigarette bill dies*, Nexstar Broadcasting, Honolulu, HI

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H.B. 2347, which bans the sale of flavored tobacco products in Hawaii, also passed the House Committee on Health with amendments and removed menthol and tobacco flavors from the ban. A companion bill in the Senate, S.B. 2903, has yet to be assigned a committee hearing.

H.B. 2456, which would make it unlawful to ship e-liquid and electronic smoking devices containing e-liquid passed the bill on February 7, 2020, as amended in H.D. 1, and referred the bill to the Consumer Protection and Commerce and Judiciary Committees where it is pending. The Senate Committee on Consumer Protection and Health on February 13, 2020, passed the companion bill, S.B. 2231, on its second reading and referred the bill to the Judiciary and Ways and Means Committees where it is pending in the Judiciary Committee.

H.B. 2348, which would create penalties for retailers who sell electronic smoking devices and tobacco to persons under age 21, was adopted and referred to the Finance Committee as amended in HD 2 on February 14, 2020. S.B. 2904, the Senate companion bill, passed second reading as amended in SD 1 and was referred to the Judiciary and Ways and Means Committees.

In late January, the American Lung Association recommended that lawmakers enact public policies to reduce tobacco use and exposure to secondhand smoke by prohibiting the sale of flavored tobacco products; implementing a tax on electric smoking devices in parity with other tobacco products; and maintaining funding for tobacco prevention and cessation programs. Those suggestions were contained in the organization's annual State of Tobacco Control report grading Hawaii in five categories on policies to prevent and reduce tobacco and E-cigarette use. Grades are as follows: "D" for its funding of tobacco prevention programs, "C" for its level of state tobacco taxes and coverage and access to services to quit tobacco, "B" for its age restrictions, and "A" for its smoke-free workplace laws.¹⁸

RIPC Recommendations

1. Request that the legislature support the installation of smoke alarms and residential sprinklers. If a fire occurs, properly installed and maintained smoke alarms provide an early warning signal to alert occupants of a fire condition. Residential sprinkler systems help to reduce the risk of deaths, injuries, and property damage. They activate 24 hours a day, seven days a week without human intervention or action to control or extinguish a fire.

¹⁸ Jensen, C (2020), *Smoking in the crosshairs: Bill raising Hawaii's legal tobacco age to 25 passes House committee*

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Regardless of the efforts currently in place to reduce the use of cigarettes and other smoking-related materials, whether for health or fire safety reasons, fires involving these materials continue to occur.

Installing automatic extinguishing systems in all types of occupancies will further reduce the 358,300 home structure fires, 2,500 fatalities, and more than 12,000 injuries that average yearly in the U.S.

Research conducted by the USFA on sprinklers has shown that fire sprinklers and smoke alarms together in a home can reduce your risk of dying in a fire by 82 percent. Other fire sprinkler factors to consider include:

- Reduces heat, flame, and smoke from a fire, thereby greatly reducing the risk to fire fighters
- Ensures a quicker response to a fire since residential fire sprinklers are more sensitive to heat than those found in businesses or industrial buildings and can detect fires much sooner
- Come in different colors and can blend in with your home decor. Some can be concealed in ceilings so they are not noticeable
- Are very reliable. Sprinkler heads will only activate when the temperature in the room rises quickly, and usually one sprinkler above the fire and possibly a second head next to it will activate when a fire starts.
- Offer the resident investment protection. Fire sprinklers can prevent devastating home damage by extinguishing flames quickly. Fire sprinklers can limit the damage caused by smoke and fire. Fire sprinklers cause less damage than water damage caused by fire fighting hose lines.
- Are easy to install. Installing a residential home sprinkler system in a home under construction or being remodeled requires only a little extra piping and labor and greatly increases fire safety for residents.
- Does not put a burden on residential water requirements. Home fire sprinklers can be connected to the home water supply and requires less water than business and industrial systems.
- Can be done at a minimal cost. On average nationally, a sprinkler system costs about \$1.35 per square foot. (At the request of the SFC, Commercial Plumbing Services, a local plumbing company located in Kapolei, Hawaii submitted quotes to install residential sprinkler systems in an average Hawaii residence. Their

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estimate for a 1,800-square foot, single-family dwelling is \$2,088. Their estimate for a 2,200-square foot, two-family dwelling is \$2,243.)

- Can lower insurance costs. Installing a residential sprinkler system has the potential to lower homeowner's insurance rates by 5 to 15 percent.¹⁹

On November 29, 2017, a two-alarm fire broke out on the 38th floor of the Keauhou Place condos on South Street. Light smoke was seen emanating from one of the units around 3:30 p.m. The HFD was able to quickly extinguish the flames and credits a fire sprinkler system in helping to contain the fire. Investigators believe it may have started as a kitchen fire. No one was home at the time.

"When the sprinkler did activate, what that did is it contained the fire to the room of origin. It allowed enough time for our fire fighters to get to the floor and to fully extinguish the fire without it spreading to other units," said Fire Captain Kevin Lyons.²⁰

Although it has been more than three years since the fire at the Marco Polo condominium left 4 people dead and 13 others injured, the SFC is still facing stiff opposition from the building industry to repeal State legislation that prohibits any county from requiring residential fire sprinklers in new one- and two-family dwellings. Act 83, Session Laws of Hawaii 2012, prohibits counties from requiring automatic fire sprinklers in new or existing one- and two-family dwellings, except to address a variance from access road or fire fighting water requirements. The law was scheduled to sunset in 2017, but Act 53, Session Laws of Hawaii 2017, extended the prohibition to 2027. The debate on this issue revolves around the fire services' contention that sprinklers save lives, limit fire damage, and protect the environment. Opponents contend that sprinklers cost money, other built-in safety measures are adequate, and Hawaii's housing prices are already one of the highest in the nation.

On November 13, 2018, the State Building Code Council (SBCC) adopted the State Residential Code that required all State construction of one- and two-family dwellings to install residential fire sprinklers. This was a victory for fire safety and the future of State housing residents that included the Department of Hawaiian Home Lands.

Almost a year later, Mayor Kirk Caldwell signed Bill 69 into law. Although it is not the mandatory fire sprinkler law that most in the fire service would like to see enacted, it sends out an emphatic message touting the increased safety benefits of retrofitting a high-rise building with fire sprinklers. Above all, this law is one way to prevent another deadly fire in a high-rise building.

¹⁹ USFA (2020), *Home fire sprinklers save lives*, Emmitsburg, MD

²⁰ HFD *extinguished fire on 38th floor of Kakaako highrise*

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Bill 69 mandates that any building over 10 stories must go through a fire safety assessment by a third party. This will affect about 300 apartment buildings in Honolulu that were permitted before 1975 when the City passed the building code that required automatic fire sprinklers in new high-rise construction. In almost all of the evaluations, installing fire sprinklers will be the primary recommendation. However, condominium association owners will be able to opt out of this recommendation, but will still have to comply with several other safety requirements, including installing fire alarms, upgrading elevators, or installing fire doors on every unit.

One key factor will be that condominium association owners who opt out of installing fire sprinklers will have to publicly disclose that fact to current and future owners and residents. This will include displaying a sign on the entrance of the building that informs people that the structure is not equipped with fire sprinklers. The Marco Polo Association of Apartment Owners recently voted to retrofit their entire building with fire sprinklers.²¹

[http://www4.honolulu.gov/docushare/dsweb/Get/Document-205735/DOC004%20\(22\).PDF](http://www4.honolulu.gov/docushare/dsweb/Get/Document-205735/DOC004%20(22).PDF)

2. Request that legislators support future legislation to allow money currently in the RIPC Special Fund to also be utilized to defray program and activity costs for the SFC. Over the years, the initial budget allocated to the SFC has been reduced. The health challenges that the 2019 Novel Coronavirus has placed on our State, along with the financial deficit, will affect all entities of State government, including the SFC. Allowing RIPC Special Funds to be utilized by the SFC will allow the program to continue to develop and support a comprehensive fire service emergency management network for the protection of the State's life, property, and environment. Program funding is self-sustainable through the collection of cigarette certification fees.
3. Request that the legislature continue its pursuit towards the elimination of cigarette smoking and "vaping" in Hawaii. The health discrepancies that these habits bring forth far outweigh the economic benefits that cigarette taxes and RIPC fees bring into the State's revenues.

²¹ Gonzales, M. (2018, May 3), *Mayor Caldwell signs bill to encourage fire sprinklers in high rise buildings*

Conclusion

RIPCs appear to be the principal reason for a 30% decline in smoking-related fire deaths from 2003 to 2011. During the same period, the number of smokers fell by only about 4%. Changes in ignition-resistance mattresses and upholstered furniture have been underway for more than two decades and have also contributed to the decline. The SFC will continue to monitor the effects that the RIPC Program has in Hawaii. The SFC will also continue to advocate for fire and life safety for the community by taking an active role as a member of the SBCC. The purpose of this council is to establish a state building code through the timely adaptation of national building codes that includes the latest fire code adopted by the SFC, the latest edition of the International Building Code, the latest edition of the Uniform Plumbing Code, and Hawaii design standards to implement Act 5, Special Session Laws, 2005 as applicable to emergency shelters and essential government facilities. Above all, the SFC will continue to educate Hawaii's citizens on the advantages of residential fire sprinkler systems to promote the installation of these systems in new building construction, and advocate for a citizen's choice in the decision to retrofit existing residential buildings with these life-saving systems.

Comments or inquiries may be directed to: Earle K. Kealoha, Jr., RIPC Program Specialist, SFC, at ekealoha@honolulu.gov, or 808-723-7173.

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Table 1. Hawaii Smoking-Related Fire Statistics (01/01/2000 to 06/30/2010)

Description	Frequency	Exposure	\$ Property Losses	\$ Content Losses
Heat from other open flame or smoking materials	551	5	\$20,569,960	\$3,093,605
Cigarettes	410	1	\$1,929,810	\$402,220
Pipe or cigar	2	0	0	0
Heat from undetermined smoking material	263	4	\$3,060,475	\$865,875
Match	653	0	\$3,140,400	\$521,385
Cigarette lighter	239	0	\$4,339,120	\$734,375
Totals	2,118	10	\$33,039,765	\$5,617,460

Table 2. Hawaii Smoking-Related Fire Statistics (07/01/2010 to 06/30/2019)

Description	Frequency	Exposure	\$ Property Losses	\$ Content Losses
Heat from other open flame or smoking materials	267	7	\$11,301,230	\$3,785,240
Cigarettes	162	0	\$1,262,020	\$507,995
Pipe or cigar	8	1	\$11,300	\$6,720
Heat from undetermined smoking material	46	0	\$583,275	\$83,310
Match	84	0	\$429,600	\$41,230
Cigarette lighter	153	0	\$5,739,670	\$839,855
Totals	720	8	\$19,327,095	\$5,264,350

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Table 3. Hawaii Smoking-Related Civilian and Fire Fighter (FF) Deaths and Injuries (01/01/2000 to 06/30/2010)

Description	Civilian Deaths	Civilian Injuries	FF Deaths	FF Injuries
Heat from other open-flame or smoking materials	2	10	0	13
Cigarettes	0	9	0	0
Pipe or cigar	0	0	0	0
Heat from undetermined smoking material	1	3	0	2
Match	0	3	0	4
Cigarette lighter	3	15	0	2
Totals	6	40	0	21

Table 4. Hawaii Smoking-Related Civilian and Fire Fighter (FF) Deaths and Injuries (07/01/2010 to 06/30/2019)

Description	Civilian Deaths	Civilian Injuries	FF Deaths	FF Injuries
Heat from other open-flame or smoking materials	8	19	0	3
Cigarettes	0	3	0	0
Pipe or cigar	0	0	0	0
Heat from undetermined smoking material	0	1	0	0
Match	0	0	0	0
Cigarette lighter	2	12	0	2
Totals	10	35	0	5

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Table 5. RIPC Highlights (July 1, 2017 through June 30, 2019)

	FY2018	FY2019	FY2020
Beginning Balance	\$631,725	\$781,539	\$755,880
RIPC Specialist Salary	\$39,926	\$41,356	\$38,805
Office Expenses	\$4,569	\$3,019	\$1,892
Outreach Expenses	\$0	\$1,032	\$44
Honolulu Inspections/ Outreach	141	1,087	697
Outer Island Inspections	54	0	77
Honolulu/Outer Islands/ Mainland Travel Costs	\$4,793	773	2,618
Cigarette Samples Purchased for Testing	92	198	320
Cigarette Purchasing, Shipping, and Testing Costs	\$34,523	\$60,104	\$111,195
Subtotal	\$547,914	\$675,255	\$601,326
Plus Fees Collected	\$233,625	\$80,625	\$69,750
Ending Balance	\$781,539	\$755,880	\$671,076