

NO: P004

DATE: March 4, 2019

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## **PUBLIC SAFETY COMMITTEE**

TO: **Mayor & Council**

DATE: **March 1, 2019**

FROM: **Fire Chief**

FILE: **7320-20**

SUBJECT: **HomeSafe Program Update and Origins**

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## **RECOMMENDATION**

Surrey Fire Services recommends that Council receive this report for information.

## **INTENT**

The purpose of this report is to update Council on the Surrey Fire Services (“SFS”) HomeSafe Program that targets fire risk reduction in the community.

## **BACKGROUND**

The SFS has long championed the value of evidence-based decision making for organizations. HomeSafe was designed and implemented using this approach to respond to the rising incidence of fire in the community. This approach employs each of the following core elements of the evidence-based decision-making process:

- Defining the problem;
- Identifying what data is needed;
- Gathering the information;
- Analyzing the results;
- Applying them to a decision, and
- Evaluating the outcomes.

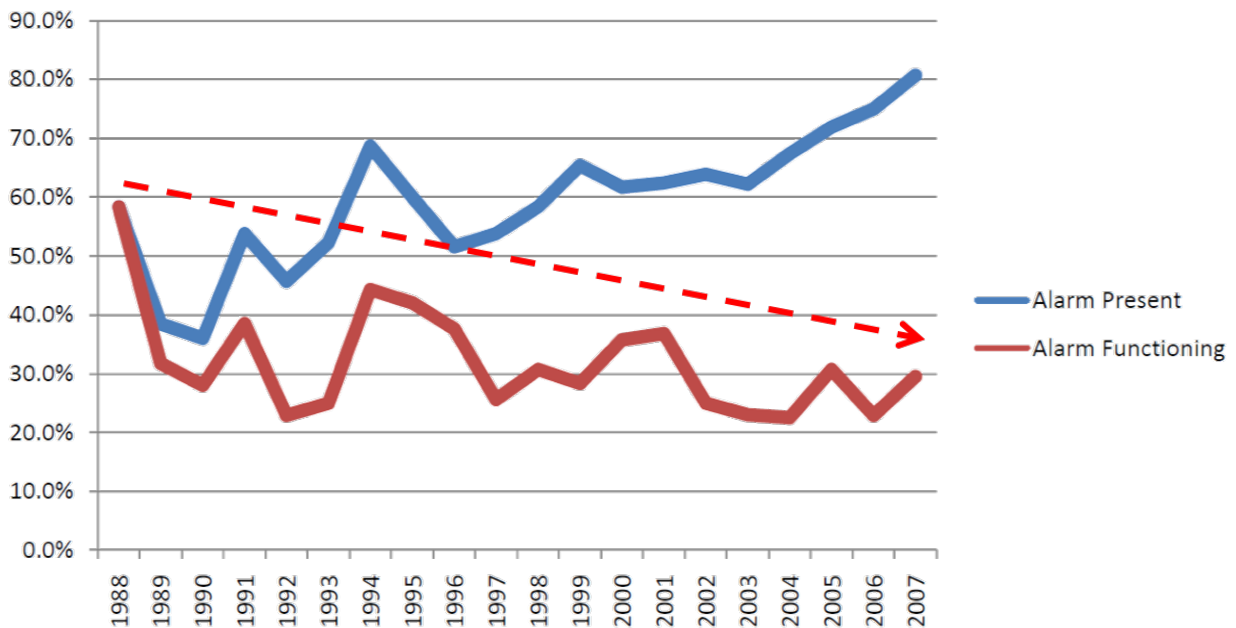
In 2007, the University of the Fraser Valley (“UFV”) was commissioned to review 20 years of fires that occurred in Surrey. This was used to help to formulate a risk-based intervention and prevention campaign to better protect the community from the risk for, and consequences of, residential fires. The study titled, “Residential Fires in Surrey, B.C. 1988-2007”, analyzed 4,758 structure fires. Over these two decades, the rate of fires steadily increased, up to approximately 80-88 fires per year per 100,000 people. The study revealed that the most common property class involved in a structure fire were single-family homes. Of the six communities within Surrey, Newton and Whalley had experienced the highest frequency of fires with cooking being the most common source of ignition accounting for 40% of all residential fires. It was further discovered that the risks of fatality in the event of a residential structure fire are unevenly distributed across the community. Trends were identified within the demographics experiencing fires revealing that the occurrence of fires were non-random.

Households with the following traits were identified as having a higher fire risk:

- Children in the home under the age of 6;
- Seniors over the age of 65;
- Lone parent;
- Unemployment, and
- Mobility (Movers).

A further analysis of these fires discovered that while the presence of smoke alarms became increasingly common between the years of 1988-2007, the likelihood that the smoke alarm would be functioning significantly decreased to the point where less than one-third of residences had functioning smoke alarms in place as demonstrated in Table 1.

**TABLE 1**



Smoke alarms are a primary prevention of fire related casualties. The study “Smoke Alarms Work, But Not Forever (2012) makes three main points:

1. Present, functioning smoke alarms save lives;
2. Smoke alarm functionality deteriorates with time, and
3. Targeted prevention and education efforts increase functioning smoke alarm coverage.

This study was based on an analysis on almost 50,000 fires occurring in Alberta, B.C. and Ontario over a 5-year period involving 663 fatalities. The findings demonstrated that the death rate per 1,000 fires in the absence of a present, functioning smoke alarm was 74% greater than when a functioning smoke alarm was present. Working smoke alarms were also found to reduce property damage by 19%. These fires tended to be smaller and confined more often to the object, area and room of origin thereby significantly reducing the cost of recovery to the homeowner. Importantly this study recognized that in the absence of an ongoing, sustainable fire prevention and education program, the positive impacts will diminish over time.

In 1990, TriData Corporation in the U.K. published, “Proving Fire Education Works”, which highlights the positive impact of public-education strategies as an effective way to reduce residential fires. In this research, home visitations are shown to be particularly effective when delivering fire education.

Recognizing this, a BC Smoke Alarm Movement was launched in October 2012 challenging all communities of BC to ensure there is a present, functioning smoke alarm in every home in the Province. Support for the campaign came from many stakeholders across the Province including the Ministry of Justice and Attorney General. The Province estimated that smoke alarm movement would decrease the rate of annual fire deaths by 32%. The SFS took a leading role during this campaign in promoting working smoke alarms in Canada.

These best practices led to the development of an evidence-based, cost effective, targeted fire prevention campaign. The goal was to drive down the frequency and severity of fires, reduce the economic burden of recovery from fire and reduce fire-related casualties.

## **DISCUSSION**

With the problem clearly defined and evidence to support it, in 2008 the SFS operationalized HomeSafe. This proactive, evidence-based fire prevention program connects local fire hotspots with the social data linkages identified in the 2007 UFV study to target neighbourhoods with the greatest risk of fire and highest concentrations of high-risk residents. Demographic data was extracted from Statistics Canada Census Survey and overlaid on a map of previous incidents of fires occurring in single dwelling residences. Firefighters were given addresses within their areas to go door-to-door distributing information packages on fire safety, an offer to install a free smoke alarm and a free home safety inspection. After the first two years an evaluation was completed and published in the Journal of Safety Research (2012) titled, “Reduced frequency and severity of residential fires following delivery of fire prevention education by on-duty fire fighters: Cluster randomized controlled study”. At that time 18,473 addresses had been visited representing 14% of all homes in Surrey excluding apartments. The evaluation process revealed that there was a 64% reduction in the annual rate of fires for HomeSafe houses. When fires did occur in the HomeSafe houses, the following results were discovered:

- Smoke alarms were activated in 46% of cases compared to 17% pre-intervention;
- 38.6% of fires were confined to the object of origin, compared to 11% pre-intervention, and
- Average loss of \$33,486 compared to \$66,707 pre-intervention.

The outcomes of the HomeSafe campaign within the first two years of implementation provided measurable results shown to increase the safety the residents of Surrey. Table 2 is a clear indication of the outcomes that have been achieved by HomeSafe efforts in driving down the death and injury rates as well as the rates of fire occurrence as of the end of 2018.

TABLE 2

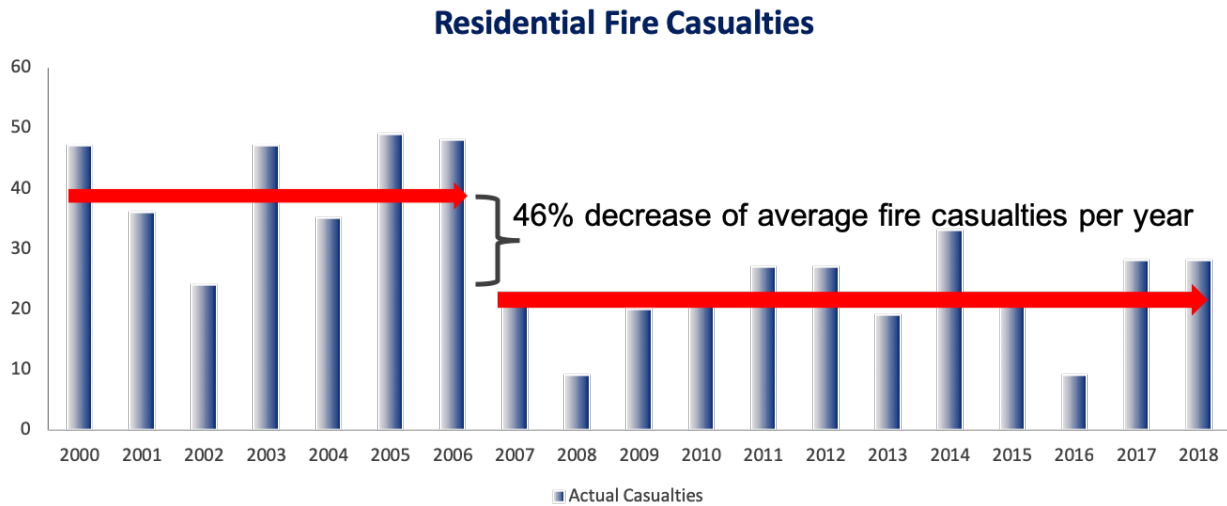
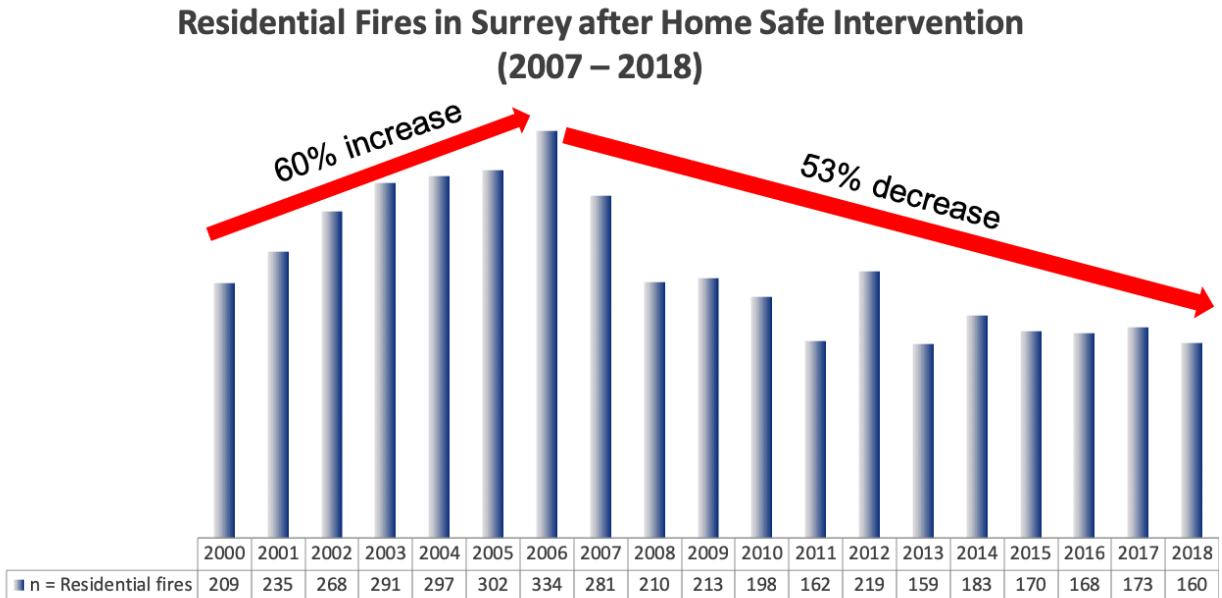


Table 3 demonstrates the rising trajectory rate of residential fires before HomeSafe was implemented in the community. The results were a constant and steady decrease in the rate of fires once HomeSafe became operational and ongoing.

TABLE 3



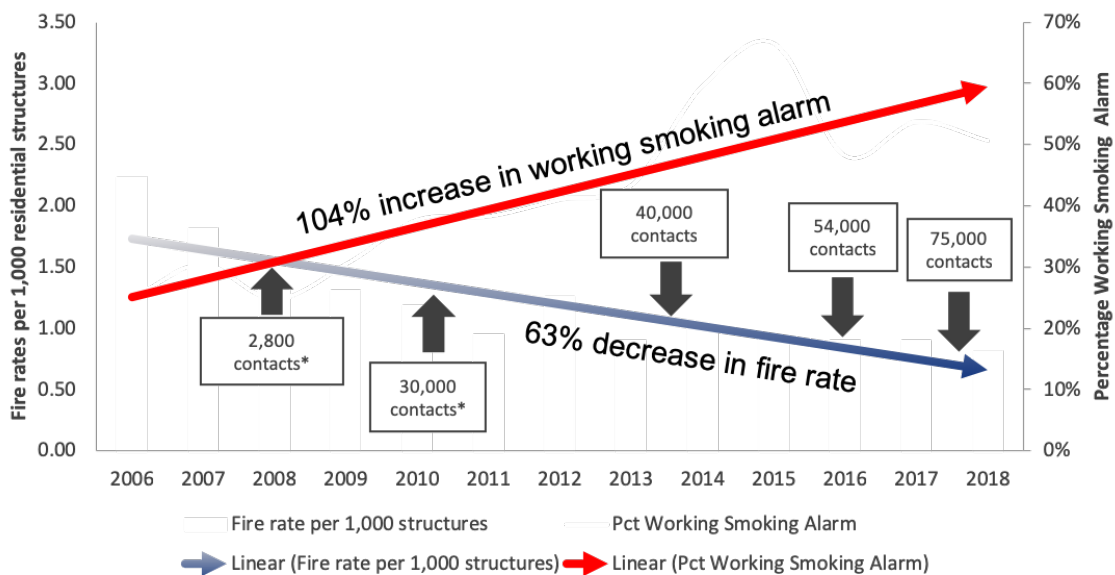
Evaluation of community risks and fire hotspots have been continually reassessed to integrate current data into the program and ensure risk reduction efforts continue to be effective.

Partnerships have been developed with stakeholders in the community in order to further reach the identified vulnerable high-risk demographics. Each year targeted outreach is expanded to include the food bank, tax lineups and senior events. Value was added to the program by installing combination smoke alarm/carbon monoxide detectors to give residents

better service to address safety concerns within the home. Opportunities to increase value in service delivery will continue to be explored and implemented within the HomeSafe Program. In 2017, the SFS created a community engagement program that deployed community engagement volunteers to deliver targeted door-to-door fire prevention materials and smoke/CO alarm installs. This was a cost-effective opportunity to expand the capabilities and ensure the sustainability of the HomeSafe Program while offering opportunities for community volunteering within the SFS. Firefighters continue to check the status of smoke alarms during calls for service, install smoke/CO alarms if necessary, and carry out scheduled HomeSafe visits through community requests. Firefighters have also been trained to observe signs of human trafficking and elder abuse since they are well positioned within the community. In this way, the new firefighter/volunteer delivery model of the HomeSafe Program has enabled the SFS to amplify risk reduction efforts in the vulnerable sector of the community.

Table 4 demonstrates the effectiveness of the HomeSafe Program from its inception until now. The number of contacts made with households in Surrey to deliver fire prevention material and install smoke alarms and the subsequent impact those contacts had on the rate of fires and working smoke alarms are displayed.

**TABLE 4**



Contacts made by Surrey Fire Services to each residence as part of Home Safe inspections (conceived in 2007 and implemented in 2008). The program utilized key indicators across the city demographics to focus resources on providing support to seniors and other at risk residents to target fire risks.

By continually analyzing fire hotspots and leveraging social linkage data, the HomeSafe Program has evolved over the years in order to remain a cost-effective use of resources to reduce fires and fire losses in the community. By understanding that fire risk is non-random and the trends associated with fire risk, the SFS will continue to effectively target resources at the most vulnerable demographic within Surrey to reduce the occurrence and impact of fire below the levels which have been achieved over the past several years.

## **SUSTAINABILITY CONSIDERATIONS**

The work of this project supports the objectives of the City's Sustainability Charter 2.0. In particular, this work relates to Sustainability Charter 2.0 in the themes of Inclusion and Public Safety. Specifically, this project supports the following Desired Outcomes ("DO"):

- Inclusion DO2: Surrey is a caring and compassionate city supports its residents of all backgrounds, demographics and life experiences;
- Public Safety DO1: Residents are safe and have a strong sense of security in all neighbourhoods and throughout the city, and
- Public Safety DO4: Local residents and businesses are connected and engaged within their neighbourhoods and with the broader community – including police, public safety partners and social service agencies-to enhance safety.

## **CONCLUSION**

Using an evidence-based decision-making approach to a rising rate of fires in Surrey, the SFS designed a program to target the population most at risk of fire in areas of high incidents of fire occurrence. The education delivered was designed to address the highest ignition sources of previous fires, with a door-to door delivery method. The success of Surrey's HomeSafe Program was awarded the 2013 Community Health and Safety Program Excellence Award by the International City/County Management Association.

Despite the regional and provincial trends that show increasing rates, the outcomes of the HomeSafe Program continue to successfully reduce fire and fire fatalities within Surrey. The SFS will continue to monitor the effectiveness of the initiative to ensure the safety of residents.

Len Garis  
Fire Chief