COMMUNITY RISK REDUCTION PLAN EVALUATION DECEMBER 2022





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Travis County Emergency Services District 2 COMMUNITY RISK REDUCTION PLAN (CRRP) EVALUATION

December 2022



INTRODUCTION

In 2019, Travis County ESD No. 2 ("the District") published its inaugural Community Risk Assessment ("CRA"). The purpose of the CRA was to gather and analyze data about features of the area that the District serves in order to reduce, mitigate or eliminate risks specific to our community.

The CRA was based on NFPA 1730 (2016 Ed.) and included information pertaining to the demographic makeup, geographical features, past fire experiences, and other key community characteristics.

The CRA revealed several "risks" or focus areas that warranted attention. These were identified as:

Smoke and Carbon Monoxide Alarms Large Scale Incidents (including fire, weather, and man-made threats to high occupancy structures and major community events) Home Cooking Fires Falls Tier II Facilities False Fire Alarm Activations

Following the publishing of the CRA, the District created a Community Risk Reduction Plan ("CRRP"). The CRRP outlined specific goals, objectives, strategies and objectives to utilize over a defined period of time to reduce the impact of risks associated with the focus areas identified in the CRA.

Efforts to draft the CRRP began in late 2019 and the final version of the document was published in early 2020.

The purpose of this document is to, as objectively as possible, evaluate the effectiveness of the CRRP activities that took place between 2020 and 2022.



The CRRP evaluation represents step 6 in the Community Risk Reduction Process

PERFORMANCE MEASURES

To evaluate our performance in comparison to our goals, we included three different benchmarks: Process Measures, Impact Measures and Outcome Measures.

<u>Process Measures</u> monitor program performance in regard to the frequency or quantity, usually in the form of raw numbers or tallies (e.g., How many inspections did we complete? How many people attended the training course?).

<u>Impact Measures</u> evaluate impacts by comparing conditions before programs were initiated to the conditions after (e.g., How do pre and post test scores compare after education on a certain topic? How many violations were corrected?).

<u>Outcome Measures</u> evaluate the long-term data points to determine the effectiveness of the CRRP (e.g., Did we maintain zero fire deaths? Did we improve the fire environment? Did we reduce a certain call type?).

CONSIDERATIONS

The CRRP was written before the COVID19 pandemic and was published the day the first local Work From Home Orders were mandated. The programs and projects identified in the document were created in a pre-pandemic environment. COVID19 had an adverse impact on effectively deploying the CRRP as drafted. For example, many of the initiatives in the CRRP relied heavily on education as a mitigation strategy. With the COVID19 lockdown protocols in place, it became challenging, if not illegal, to meet with the public to educate them on various safety topics. In addition, when the plan was drafted, there were two full time Public Educators that were assigned to meet the stated goals. During the COVID19 response, both Public Educators were furloughed and one did not return. The remaining Public Educator was assigned to COVID19 response activities for over a year.

As a result of our shift in focus and priority, the goals for many focus areas as written in the CRRP were altered significantly and some areas, such as Falls and a portion of Large Scale Incidents, were left untouched.



Working smoke alarms significantly increase your chance of surviving a house fire, according to the National Fire Protection Association (NFPA). In TCESD2, at least 7 out of 10 homes (which is nearly 24,000 homes) are at risk to have expired smoke alarms.

Manufactured homes face an even higher fire risk than other single family homes. The District includes six manufactured home communities, totaling approximately 2,900 homes. Manufactured homes use light-weight construction materials that ignite quickly. Also, these homes tend to be smaller than site-built homes "which supports more rapid fire growth to flashover," per a 2013 NFPA report. The risks for residents of manufactured homes are compounded by their relative lack of working smoke alarms compared to all other housing types, including multi-family properties, per a 2011 federal study of American housing.

GOAL: Reduce life safety risks through the increased presence of working smoke alarms in single family homes.

To help meet this goal, we selected an education and economic incentive approach:

Educate residents about the importance of smoke alarms (Education)

Provide smoke alarms, batteries, and physical assistance to qualifying residents (Economic Incentive)

To evaluate the effectiveness of this program, the following benchmarks are provided followed by the associated data:

PROCESS Evaluation Data:

- Total people directly reached by alarm hotline/education (fliers, video, lessons, etc.) Unable to measure.
- Manufactured home communities total residents directly served, and percent of homes accessed at least 4,048 people (1,531 youth, 2,224 adults, 293 seniors). As an average, we gained entry into 33.42% of our manufactured homes.
- Number of video views Unable to measure.

IMPACT Evaluation Data:

- Knowledge levels pre- and post- alarm maintenance education, when assessment is possible (such as formal lessons or alarm installation events) We were unable to execute as originally planned due to COVID modifications.
- Number of alarms working before vs. after home visits We were unable to execute as originally planned due to COVID modifications.
- Number of alarms installed during home visits, by type We installed 5,352 total alarms (4,347 smokes/1,005 combos).

OUTCOME Evaluation Data and Timeframe:

- <u>Mid-range</u>: For at least the first two years after the District completes a home visit, the alarms in that home successfully alert occupants of a fire:
 - A. As measured for <u>all house fires</u> in the District Unable to measure.
 B. As measured in <u>participating manufactured homes</u> Unable to measure.
- <u>Long-range</u>: Through at least 2030, maintain the District's record of zero fire deaths in manufactured home communities Accomplished.

SUMMARY

During this time period, we applied for and were awarded a FEMA grant in the amount of \$191,361. The funds were used to purchase the equipment needed to install free smoke and/or CO alarms (alarms, step ladders, drills, backpacks, etc.). The funds were also used to reimburse the District for a portion of employee wages for the time they spent supporting the smoke alarm installation program.

The initial plan was to partner with community partners such as large businesses, faith-based organizations and other volunteer groups. The volunteers from these groups were to do the actual installations while our staff supported their work with training and logistical needs.

We had to pivot from this plan very early on in the program period due to the many pandemic restrictions. In cooperation with select Battalion Chiefs, we created and employed a delivery model which relied entirely on our on-duty crews for installations. Each weekend, crews went door-to-door in their designated areas to offer to install smoke and/or CO alarms. Every home in the designated manufactured home communities were offered services at least twice.

This occurred largely during the pandemic when person-to-person contact was limited. In an effort to minimize the risk of disease spread both to and from our staff, we made the decision to minimize the amount of time we spent in each home and limit the interactions with the occupants. Because of this, we ceased gathering many of the data points we were hoping to track and altered our education approach. Instead of using educational videos with knowledge checks after viewing, we opted to leave a brief cooking safety handout.

At the end of our efforts in the manufactured home communities, our crews installed 3,179 alarms (2,742 smokes/437 combos), improving the safety for at least 4,048 people.

Because of the overall success of these efforts, we decided to extend this program to other targeted neighborhoods. Using the demographic data and housing profile information from the CRA, we applied for another federal grant and were awarded \$102,405. The funds were used to purchase smoke and CO alarms and to reimburse the District for a portion of employee wages for the time they spent supporting this particular smoke alarm drive. At the end of our efforts in these targeted areas, we were allowed access into 674 homes where we installed 2,173 alarms (1,605 smokes/568 combos). This improved the life safety for at least 2,100 people (557 youth, 1,203 adults, 340 seniors).

In addition to our targeted installation efforts, we successfully ran our Non-Emergency Smoke and CO Alarm Hotline which allowed us to have conversations with the public. We answered general questions about alarms, walked people through which alarms to buy and advised where to install them. We also used the hotline to coordinate home visits where we provided batteries, smoke/combo alarms, and/or physical assistance to those that qualified.



In TCESD2, from 2013 to 2018, nearly 2 out of every 5 structure fires was caused by cooking. No other fire cause--such as smoking, electrical, candles, or heating--was nearly as likely to occur as home cooking fires in the TCESD2 community. These fires were mostly in private homes, with 62% of cooking fires occurring in single family homes and 25% in apartments. Demographic information on the occupants of local structure fires was not available, nor was ignition source data. However, nationally, cooking equipment (i.e. unattended cooking) is the leading cause of home structure fires and home fire injuries, per NFPA.

GOAL: Reduce the occurrence of home cooking fire calls by 2022.

To help meet this goal, we selected an education and emergency response approach:

Educate the community on the behaviors and technology that reduce their risk of experiencing a cooking fire (Education)

Identify cooking hazards or problematic cooking behaviors during residential calls (Emergency Response)

To evaluate the effectiveness of this program, the following benchmarks are provided followed by the associated data:

PROCESS Evaluation Data and Timeframe:

- Community contacts established N/A
- Group presentations Total, and senior N/A
- People directly reached Total, senior, and residents of manufactured home communities: We gained entry into 1,064 manufactured homes and 674 other 1-2 family dwellings.
- Percent of residents within manufactured home communities who were directly reached We gained entry into 33.42% of the manufactured homes where approximately 4,048 people live.
- Number of residential referrals from Operations personnel N/A

IMPACT Evaluation Data and Timeframe:

• Knowledge levels pre- and post- risk reduction activities We were unable to execute as originally planned due to COVID modifications.

• Cooking hazards and problematic behaviors identified and discussed through residential referrals from Operations personnel N/A

OUTCOME Evaluation Data and Timeframe:

- Mid-range: By 2022, reduce the volume of home cooking fire calls by 10% over the 2016 volume, when there were 34 cooking fires dispatched. In 2021, we had 22 cooking fires. 21 of those fires were confined to container (NFIRS code 113) and 1 was a building fire (NFIRS code 111). This is a 35.3 % reduction.
- Long-range: In 2022, identify the geographic zone with the highest rate of home cooking fires, and reduce the rate there by 10% within five years.

SUMMARY

For this goal, we focused our efforts on educating 1,738 households about proper cooking behaviors and the importance of staying focused while cooking. We did so while installing grant funded smoke alarms in their home.

We also hosted an open house that approximately 800 people attended. We educated families about cooking safety while they were standing in lines for activities.



There are several community festivals and sporting events every year in TCESD2 that each draw thousands of participants. In addition, TCESD2 is home to several target hazards including 35 public and charter schools, dozens of daycares and preschools, and at least 42 large (occupant load 300+) assembly occupancies such as large churches or event centers.

These events and facilities face a variety of natural threats (lightning storms, flooding, tornadoes) and man-made risks (active shooters and other hostile events). Patrons of these locations may not be familiar with the variety of emergency exits, and they may not be trained or equipped to treat injuries or defend themselves. Criminals may target these locations due their vulnerabilities and potential for mass casualties.

These risks are exacerbated by the delays that victims may experience waiting for emergency care or rescue while the scene is being secured.

GOAL: Minimize the impact of a large-scale incident on our community through public safety plans (formalized safety planning for major community events) and an ASHER program (active shooter and hostile event response).

To help meet this goal, we selected enforcement, education, emergency response, and engineering approaches:

Standardize public safety planning for major community events, utilizing municipal partnerships (Enforcement)

Increase community preparedness for active shooters and other hostile or emergency events (Education)

Ensure effective response to active shooter and hostile events (ASHER) (Emergency response)

Increase presence of bleed control kits in the community (Engineering)

To evaluate the effectiveness of this program, the following benchmarks are provided followed by the associated data:

PROCESS Evaluation Data:

- Number of public safety plans submitted for approval 9
- Number of group programs taught 0

- Number of people directly reached through group programs 0
- Number of target hazards directly informed about bleed control kits and community preparedness training 0
- Number of multi-agency drills 1

IMPACT Evaluation Data:

- Estimated number of people attending major events which have an approved and enforced public safety plan 13,000
- Number of violations corrected at major events through the enforcement of public safety plan requirements 46
- Number of target hazards participating in community preparedness programs 0
- Number of target hazards where risks were reduced due to standardized communication methods and expanded multi-agency ASHER drills 0
- Number of bleed control kits added 0
- Knowledge levels pre- and post- community preparedness education, when assessment is possible (such as formal lessons) N/A

OUTCOME Evaluation Data and Timeframe:

- No one loses their life due to blood loss in an active shooter or other hostile event Accomplished.
- Casualties are minimized during an active shooter / hostile event due to community preparedness Incomplete; this is ongoing.
- Casualties are minimized during an active shooter / hostile event or other life safety threat due to effective public safety planning and integrated response Incomplete; this is ongoing.

SUMMARY

We established a strong partnership with the City of Pflugerville (COP) staff members who are responsible for generating safety plans (Incident Action Plans, etc.) for events. Our organization has not historically participated in generating those plans or provided input, even though our personnel would have been heavily involved in any incident warranting emergency response.

However, there is now a standard multi-discipline review process that we assist with. While the procedures are still being established, the system has been used to review several events efficiently and thoroughly in partnership with the Police Department, Parks and Recreation Department, Public Works, etc.

It should also be noted that this plan was created to augment the operational efforts already in place as it relates to ASHER. Multi-discipline trainings continue to occur at regular intervals with local public safety partners.



Tier II facilities are occupancies that present an increased risk to public health and safety due to the amount and/or type of hazardous materials located onsite. These facilities are required by federal law to inform local emergency responders about the type, amount and location of hazardous materials they store or use.

Our district has 41 Tier II facilities. A fire incident or accidental/intentional release of hazardous chemicals at one of these Tier II facilities may increase the likelihood of injury or harm to those responding the incident and to others who may be nearby.

GOAL: Reduce the risk of a hazardous material incident occurring at a Tier II facility, and minimize the impact (civilian and first responder) if one occurs.

To help meet this goal, we selected education, enforcement, and emergency response approaches:

Educate relevant community representatives on Tier II incident response (Education)

Ensure Tier II facilities are compliant with the District's adopted fire code (Enforcement)

Prepare Operations personnel with current, relevant information on Tier II facilities (Emergency response)

To evaluate the effectiveness of this program, the following benchmarks are provided followed by the associated data:

PROCESS Evaluation Data:

- Number of initial inspections and re-inspections 135
- Number of violations 632
- Number of Operations personnel trained 0
- Number of target hazards educated 43

IMPACT Evaluation Data:

- Number of violations corrected 632
- Average number of violations by facility (year-over-year) Incomplete.

OUTCOME Evaluation Data and Timeframe:

- Mid-range: By 2021, achieve 100% compliance by all facilities Accomplished, will reevaluate again in 2023.
- Long-range (indefinitely):
 - A. Maintain 100% compliance by all facilities Incomplete, will reevaluate again in 2023.
 - B. Maintain a record of zero deaths (civilian or first responder) from any incident at these facilities. Accomplished.

SUMMARY

The most impactful step we took in addressing this risk was to hire a part-time employee whose sole focus was inspecting Tier II occupancies. Captain Jim Sides, who retired from the District in August of 2018, served in this role. He inspected 43 occupancies and found a total of 632 violations, all of which were corrected within the prescribed time. Captain Sides created a shared folder of all District Tier II occupancies, including maps of each site.

We also coordinated with Preston Doege, the Local Emergency Planning Committee representative with Austin Fire Department. Mr. Doege secured access for our crews to utilize AristaTek PeacWeb Tier II website. This site provides real-time maps and data concerning each Tier II, including:

- Their location
- The type and amount of hazardous material stored
- Contact information for the facility
- Models displaying the "worst-case" hazardous material release scenarios based on realtime weather.

Some of benchmark data is incomplete. When the plan for reducing the risk of a Tier II incident was created, the intent was to inspect these facilities each year. When the pandemic altered our staffing and focus, the plan shifted to conduct Tier II inspections every 3 years. Tier IIs are up for inspection in 2023.



One out of every three fire-related calls in the District during the examined time period (January 2013 to May 2018) was a fire alarm activation, making this the most frequent fire-related call in the TCESD2 community. Further, fire alarm activations were the third most common call overall. The District responded to 3,121 fire alarm activations, representing 35% of fire call types and 7% of all call types.

A vast majority of fire alarm activations do not represent actual fires and instead are caused by mechanical failures, a lack of or insufficient maintenance, or human interference. There are many risks associated with these "false" alarms. They can desensitize building occupants when they occur several times at the same location, leading to complacency. For first responders, false alarms negatively impact their sleep patterns and overall health. Additionally, these alarms represent an inefficient use of staff time and taxpayer expense. Rough estimates suggest that these calls cost the District \$1.2 million dollars during the examined time period.

GOAL: Reduce the occurrence of false alarm calls by 2022.

To help meet this goal, we selected an educational and enforcement approach:

Educate those potentially affected by the new fee-for-service protocol. (Educational)

Establish a fee-for-service protocol (Enforcement)

Track the location and status of fire protection systems throughout the District (Enforcement)

To evaluate the effectiveness of this program, the following benchmarks are provided followed by the associated data:

PROCESS Evaluation Data:

- Number of letters sent out to key occupancies 5,373
- Number of occupancies (all, district wide) participating in relevant technology 798
- Number of fees issued to occupancies with a history of multiple false alarms There were 322 billable incidents between January 1, 2021 and November 30, 2022.

IMPACT Evaluation Data:

• Number of false alarms among occupancies with a history of multiple false alarms See below for breakdown by year.

• Number of first responder sleeping hours affected by false alarms See below for breakdown by year.

OUTCOME Evaluation Data and Timeframe:

Mid-range by 2022:

Among occupancies with a history of multiple false alarms, reduce the average number of false alarms by 50%.

We saw great success in reducing false alarms in multifamily dwellings with our current criteria. Multifamily dwellings are the second most common property use for false alarms. We saw a 35% reduction in false alarms in these occupancies from 2021 to 2022. We also saw great success in our daycares, with a reduction of 60%.

There was a reduction in 1 or 2 family dwellings but we recognize we need to do more in this area. 1 or 2 family dwellings are our most common property type for false alarms and projections show the number to be nearly double multifamily dwellings.

	2018	2019	2020	2021	2022 Jan-Nov	Projected 2022	Grand Total "using 2022 projections	% Decrease from 2021 to projected 2022
Property Use								
1 or 2 family dwelling	264	296	302	334	273	298	1494	11%
Multifamily dwelling	161	153	167	241	144	157	879	35%
24-hour care Nursing homes, 4 or more persons	24	28	35	37	31	34	158	9%
High school/junior high school/middle school	12	6	12	33	29	32	95	4%
Warehouse	31	13	11	23	20	22	100	5%
Elementary school, including kindergarten	23	6	25	20	15	16	90	18%
Manufacturing, processing	16	11	7	26	20	22	82	16%
Day care, in commercial property	15	7	9	27	10	11	69	60%
Mercantile, business, other	12	16	8	17	11	12	65	29%
Business office	4	17	11	11	12	13	56	-19%
Mental retardation/development disability facility	7	10	11	22	7	8	58	65%
Hotel/motel, commercial	5	11	6	16	16	17	55	-9%
Church, mosque, synagogue, temple, chapel	5	7	9	7	5	5	33	22%
Residential, other	3	6	1	6	3	3	19	45%
Restaurant or cafeteria	5	4	7	4	3	3	23	18%
Grand total for all property types	691	700	701	948	704	768	3808	19%

Decrease the frequency of fire alarm activations that occur during first responder sleeping hours (21:00 to 06:00) by 10%.

While we did not meet our stated goal of reducing fire alarm activations that occurred during first responder sleeping hours (9pm-6am) by 10%, we do have a deeper understanding of what's causing our false alarms, when they are occurring, and where they tend to occur. Knowing this information is helpful to create future plans that attack this issue at its root cause.

Year	Total	9pm-5:59am	% that occurred during sleeping hours			
2018	691	184	27%			
2019	700	195	28%			
2020	701	194	28%			
2021	948	258	27%			
2022 (*Jan-Nov)	704	190	27%			
Projected 2022	768	207	27%			



Property Use	2018	2019	2020	2021	2022 (Jan-Nov)	2022 Projected	Grand Total
1 or 2 family dwelling	68	77	77	92	72	79	416
Multifamily dwelling	59	61	66	86	63	69	349
Warehouse	12	5	2	6	8	9	33
Manufacturing, processing	5	4	2	8	8	9	30
24-hour care Nursing homes, 4 or more persons	4	7	4	4	3	3	23
Day care, in commercial property	2	2	2	13	2	2	21
Mercantile, business, other	4	3	2	6	2	2	19
Elementary school, including kindergarten	1	2	6		3	3	13
Business office	2	2	1	3	3	3	12
High school/junior high school/middle school			2	3	2	2	10

Long-range by 2027:

Reduce the number of false alarm calls by 15% as compared to the 2017 call volume, when there were 629 false alarm calls. N/A

Know the location and status of 100% of the fire protections systems within the district. Accomplished.

SUMMARY

In order to implement a fee-for-service program, we first had to establish what violations we would bill for and the associated fees.

We defined a billable incident as a false alarm that resulted in an emergency response that was caused by either a system malfunction due to a faulty device, an improper system design or installation, improper maintenance, or any other system-related failure. Fees began after the third false alarm in a rolling 12-month period. The fourth false alarm resulted in a \$400 fee, while the 5th and beyond were \$500 each.

Once the guidelines were established and we had board approval, we notified all apartment complexes of the new initiative.

We launched the program in January of 2021 and in the first year, 89 occupancies experienced a false alarm that fit our billing criteria. There were 194 billable incidents in 2021 excluding the month of February. Texas was hit with Winter Storm Uri February 13-17, 2021. This major winter and ice storm caused extensive power outages and left a flurry of busted pipes and other damages. We did not feel it was appropriate to bill for any false alarms that occurred as a result of the storm. All billable incidents in the month of February were excused.

While money was not a driving force for this initiative, we did bill for \$25,900 in 2021 and \$12,800 in 2022 (January 1 – November 30).

We also partnered with The Compliance Engine (TCE) to assist with ensuring fire safety systems are tested and maintained as required. With some variation, most fire alarm and fire sprinkler systems are required to be inspected and tested annually by a state-licensed 3rd party contractor (we refer to these contractors as Inspection, Testing and Maintenance companies or ITMs). TCE is a cloud-based portal that tracks the location and status of all fire sprinkler and fire alarm systems in the District by allowing ITM companies to upload their inspection reports and findings into a system our staff can monitor. In years past we had a general idea and understanding of where the fire and life safety systems throughout our District were located. Now we know exactly how many systems we have, where they are located, and what condition they are in.

TCE also assists with communicating with individual commercial occupancies. When it is time for a system to be inspected, TCE will send a letter to the responsible party notifying them and will also provide the name/contact number of the last company who performed the service. If an occupancy doesn't respond or is delayed in their inspection and testing, TCE will call them directly. To date, TCE has sent over 5,000 letters on our behalf, directing businesses throughout our District to have their fire/life safety system serviced. TCE has also made nearly 2,500 calls to area businesses, reminding them to get their systems inspected.

In summary, TCE helps to facilitate a more efficient review, tracking, and follow-up process with occupants to correct deficiencies and maintain fire alarm and fire sprinkler systems. Systems that are properly maintained are more likely to properly function in the event of an actual emergency and less likely to produce a false alarm.