



**Travis County Emergency Services District #2
Pflugerville Fire Department**

203 E Pecan St, Pflugerville, Texas 78660
www.PflugervilleFire.org (512) 251-2801

**COMMUNITY RISK ASSESSMENT (CRA)
December 2018**



This page intentionally left blank.

TABLE OF CONTENTS



Travis County Emergency Services District 2 (TCESD2) **COMMUNITY RISK ASSESSMENT (CRA)**

December 2018

REPORT BACKGROUND	4
DISTRICT OPERATIONS	5
COMMUNITY PROFILE	6
A Brief History	6
Geographic Overview	6
Population	7
Industry and Employment	8
Major Community Events	9
Demographic Risk Factors	10
Risk by Age	10
Risk by Race	10
Risk by Socioeconomics	10
Risk by Geographic Region	11
Risk by Language and Literacy	11
DEMOGRAPHIC PROFILE	12
District-wide Demographics	13
Demographic Zone Comparison	14
Zone 1 Demographics	15
Zone 2 Demographics	16
Zone 3 Demographics	17
Zone 4 Demographics	18
BUILDING STOCK PROFILE	19
Housing Risk Factors	19
Housing Age	19
Housing Age by Year Built Map	20

Housing Type	21
Manufactured Homes	21
Apartments	21
Senior Living and Group Homes	24
Other Building Risk Factors	24
Schools	24
Hotels	25
Assembly Occupancies	26
Large Churches	26
Event / Entertainment Centers	26
Gyms / Recreation Centers	27
Parks with frequent mass gatherings over 1,000 people	27
Clubs/bars	27
Building Stock Profile Map	29
RESPONSE PROFILE	30
Selected Call Type Counts by Year	30
Top 10 Call Types	30
Apartment Structure Fires - Box Alarms Map	32
Brush Fire Calls Map	33
Carbon Monoxide Calls Map	34
Cardiac-Related Calls Map	35
Non-Traffic Calls with Police Map	36
Structure Fires: Other (Non Apartment) Map	37
Traffic Accident Map	38
Water Rescue Calls Map	39
Fire Alarm Activations	40
Structure Fires Caused by Cooking	40
Falls	41
HAZARD PROFILE	42
Tier II Facilities	43
Critical Infrastructure	46
Low Water Crossings	46
CONCLUSIONS AND NEXT STEPS	47
APPENDIX	48
Process	48
Interactive Maps	49
Data Sources	49
Assumptions and Limitations	50

REPORT BACKGROUND

Travis County Emergency Services District #2 (referred to in this document as **the District** or **TCESD2**) has been actively involved for many years in the traditional 3 E's of fire prevention: Enforcement, Engineering, and Education. In the mid-2010's, the District began an organizational and cultural transition towards "community risk reduction" as the foundation for all divisions. TCESD2 leaders began identifying and pursuing opportunities to become more integrated, strategic, and accountable than ever before in protecting their personnel and the community. The District recognized that modern-day risk reduction was very different than the traditional "Prevention" model, in that it should:

- integrate all District personnel in all divisions,
- consider all risks and hazards (not only fire),
- incorporate all available data, and
- be well supported by community partnerships.

But before risks could be reduced, they would need to be identified and prioritized. District personnel--both civilian and sworn--took several months in 2018 and early 2019 to craft the first-ever Community Risk Assessment (CRA) for TCESD2 using existing data and knowledge. The District based this project on **National Fire Protection Association (NFPA) standard 1730**, which states:

"Conducting a CRA is the first step toward management of risk based on local needs and circumstances. It is intended to collect and analyze data to make decisions about programs and resources necessary for the implementation of a Community Risk Reduction Plan (CRRP)."

A well written CRA should provide multiple levels of information on the fire and life safety challenges facing a community, including both broad overviews and neighborhood-level perspectives. Similar to the NFPA, Vision 20/20, which is a national platform for strategically preventing fire loss, advocates that fire departments develop a CRA as their launching point for effectively managing increasingly complex layers of risks. Vision 20/20 describes CRA development as an intentional process "which will ultimately be expected by their community and elected officials," and further explains that **a CRA represents the first two steps in a 6-step community risk reduction process**, shown here:



DISTRICT OPERATIONS

The District covers 75 square miles, encompassing the entire City of Pflugerville and portions of unincorporated Travis County, Texas. While the District is not a municipal fire department, the City of Pflugerville represents about 1/3 of its square mileage, and the other 2/3 is unincorporated Travis County. The District conducts administration, training, and other activities from these facilities:

- Administration Building – 203 E Pecan Street, Pflugerville
- Conference and Education Center – 201B E Pecan Street, Pflugerville
- Pfluger Hall – 203B E Pecan Street, Pflugerville
- Training Facility and Field – 18412 Cameron Road, Manor

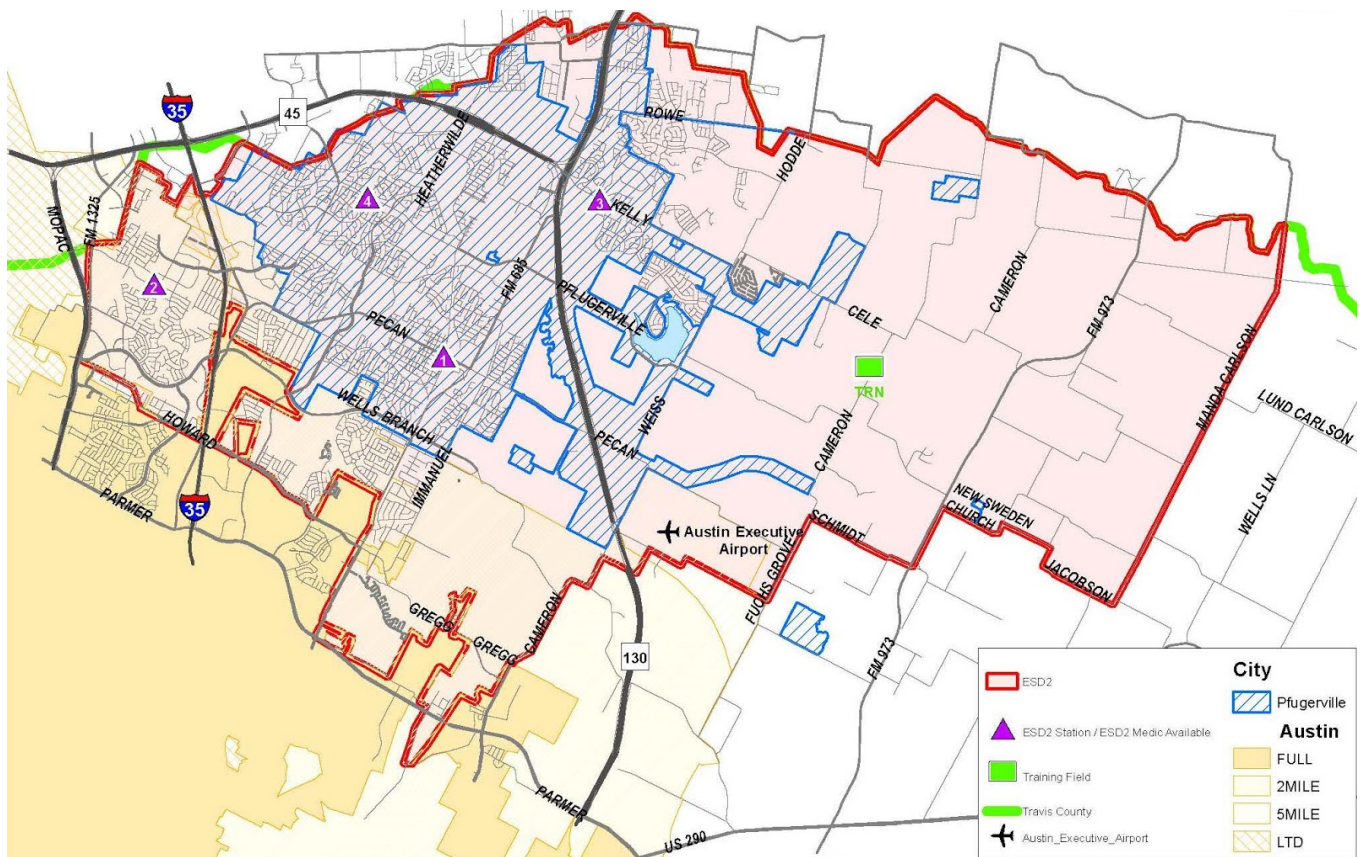
The District conducts fire and medical emergency response out of four fire stations:

- Fire Station #1 – 203 E Pecan Street, Pflugerville
- Fire Station #2 – 15300 Bratton Lane, Austin
- Fire Station #3 – 2301 Kelly Lane, Pflugerville
- Fire Station #4 – 911 Pflugerville Parkway, Pflugerville

In addition, the following facilities are in development:

- A Central Supply and Receiving Warehouse is projected to be completed in late 2019 at 911B Pflugerville Parkway, Pflugerville
- Fire Station #5 is projected to be completed in early 2020 at 1541 W. Pflugerville Loop, Pflugerville
- Fire Station #6 is expected to break ground in 2020 along the Weiss Lane corridor.

The District is an all-career department. As of October 1, 2018, the District has a total of 175 authorized full-time employees, 151 of which are sworn firefighter or firefighter/paramedic positions.



COMMUNITY PROFILE

A Brief History

Pflugerville was founded in 1860 when William Bohls established a general store and post office in his residence, and he named the town in honor of Henry Pfluger, according to city officials. Pfluger first arrived in the area in 1849, leaving his German homeland to escape the Prussian War.

As the community grew and Central Texas experienced the historic drought of the 1950s, concerned citizens walked across fields asking neighbors for donations to purchase a fire truck. In 1955, the Pflugerville Volunteer Fire Department was formally chartered and a fire truck was purchased for \$4,000. Ten years later, the City of Pflugerville was incorporated. By the early 1990s, voters approved the formation of TCESD2 as it still exists: an independently funded and managed emergency services district (ESD) providing fire suppression, emergency medical services, fire code enforcement, and public education. In 2017 the District began operating its own ambulance service staffed with paramedics out of all fire stations.

Geographic Overview

TCESD2 is located in northeast Travis County immediately north of Austin, the Texas state capital. It is situated about 15 miles north of the Colorado River on the eastern edge of the blackland prairies. It is roughly bound to the west by Farm-to-Market Road 1325, north to the Travis-Williamson county line, east to Manda Carlson Road and Cameron Road, and south to Yager Lane, Dessau Road, and Howard Lane.

The population of the District is essentially evenly divided on the east and west side of Interstate 35 (IH 35). This heavily traveled highway is the most direct route from Middle America to Mexico and is called by many The North American Free Trade Agreement (NAFTA) Highway. Two tollways run through the north and eastern part of the District: State Highway 45 (SH 45) and State Highway 130 (SH 130), respectively. The tollways were built partly to relieve traffic congestion on IH 35. The speed limits on the tollways are 75 and 85 mph; truck/cargo traffic is encouraged to take these roads, which are also designated hazardous materials routes. According to the Texas Department of Transportation, the annual average daily traffic count in 2017 for IH 35 was 185,000; SH 130 was 43,000; SH 45 was 26,000; and FM 685 (which also runs through Pflugerville) was 27,000.

Two electrical distribution centers are located within the District. A solar farm is in development within the District at the site of one of the electrical distribution centers, so the District is including this possible addition of infrastructure in planning for future resource needs.

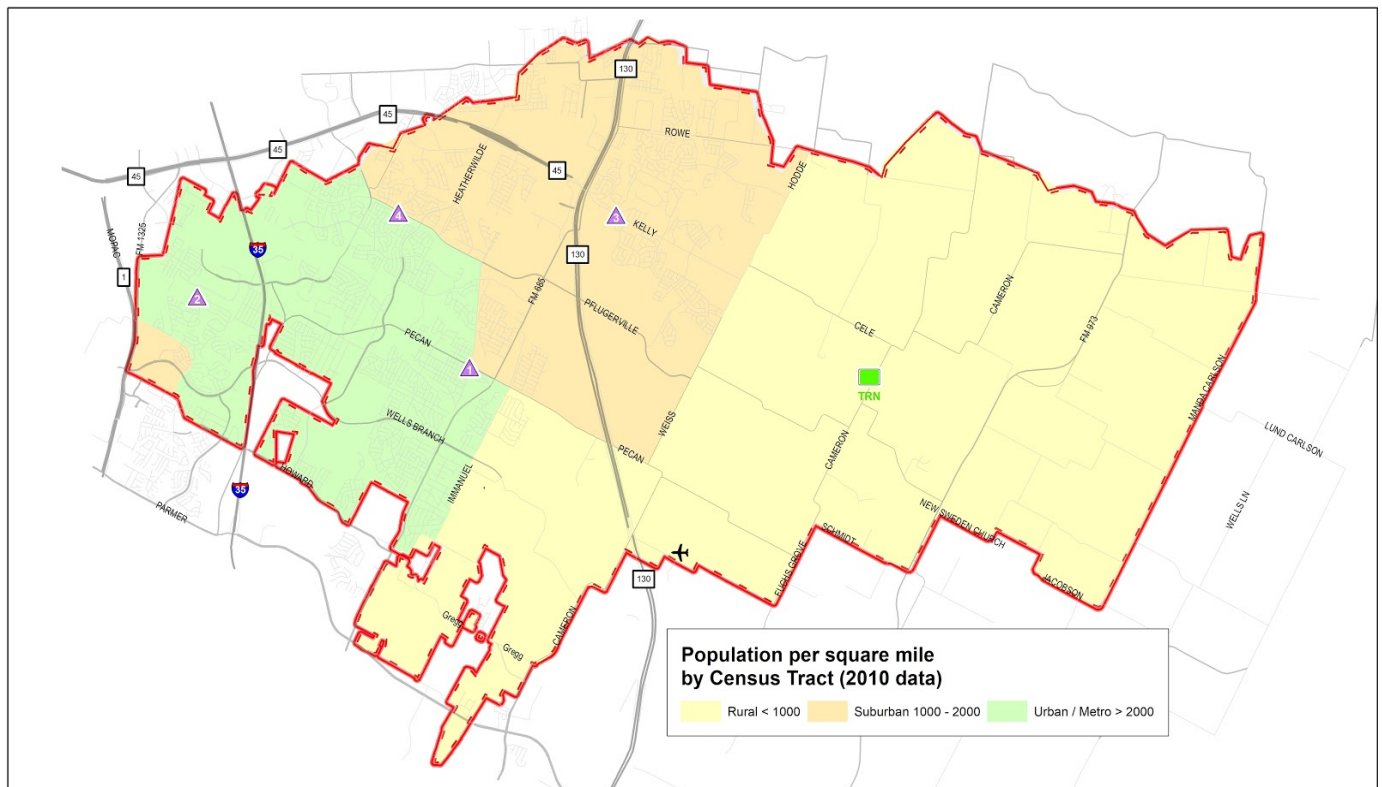
Austin Executive Airport, a public-use airport, is located along SH 130 just outside of TCESD2 boundaries to the southeast. The airport covers an area of 585 acres with two asphalt-paved runways. It is situated to attract executive air traffic as well as overflow from Austin Bergstrom International Airport. Additionally, it is heavily utilized during the Formula 1 racing events at the Circuit of the Americas in Austin. While it is technically located within the neighboring jurisdiction of Travis County ESD 12 (Manor Fire Department), TCESD2 apparatus are often first on-scene for incidents there.

Potable water resources within District boundaries include a lake and water treatment plants. Lake Pflugerville provides some of the area's drinking water supply and is also a recreational site. Large festivals and community celebrations are frequently held at Lake Pflugerville Park (in addition to Pflugers Park and Northeast Metro Park). Other water concerns in the District are the many streams that flood rapidly.

Population

The U.S. Census estimated in 2016 that the population for Census tracts within the District totaled about 121,338 people. However, by 2018, other sources estimated the population has now exceeded 133,000. The population in the District has recently seen unprecedented growth. As noted above, about 1/3 of the District is located within the City of Pflugerville, and the other 2/3 is unincorporated Travis County. The City of Pflugerville (which is entirely contained within District boundaries) nearly tripled in population in the past two decades, from 19,500 residents in the year 2000 to over an estimated 60,000 in 2018. According to a May 2018 U.S. Census report on population estimates, Pflugerville was the third fastest growing city in the nation from 2016 to 2017. The City of Austin, which is adjacent to the District, appeared on a U.S. Census report as experiencing the 12th largest population increase in the United States from 2016 to 2017.

The District's densest areas of population, considered to be "urban" or "metro" by Commission on Fire Accreditation International (CFAI) criteria, is toward the west, south and center of the jurisdiction. The northern area of the District meets the CFAI criteria for "suburban," and the eastern area is predominantly "rural" with plentiful farm fields, livestock and large undeveloped swaths of land. The undeveloped portions of land in the eastern area of the jurisdiction are expected to be fully developed over the next 50 years.



Industry and Employment

According to the Pflugerville Community Development Corporation (PCDC), as of 2017 the largest industry clusters in the City of Pflugerville are trade, transportation, utilities, leisure and hospitality (which includes restaurants), and construction. The Pflugerville area has a high concentration of small businesses and self-employed individuals. The fastest growing employment clusters in recent years included materials, software and information, and research. Between 2011 and 2016, total employment in the city increased 24%, with all industry clusters growing except metalworking. The city's unemployment rate for that period remained below the U.S. average. The City of Pflugerville reported in 2017 that nearly 92% of the adult population has a high school diploma, while nearly 37% of the population has a Bachelor's degree and 12% has a Master's degree or higher.

In summer 2018, the PCDC responded as follows to a TCESD2 inquiry seeking to know the largest local employers by number of employees:

Largest Employers in the City of Pflugerville (by number of employees)

Pflugerville Independent School District	over 2,000 employees
BW Cash Construction Ltd	440
City of Pflugerville	381
Walmart Inc.	325
Avant Technology	300
Flooring Services	200 (projected)
Costco	200 (projected)
Target Stores, Inc.	177
Home Depot U.S.A., Inc.	165
H. E. Butt Grocery Company	161
Baylor Scott & White Medical Center	150 (projected)
Living Spaces	140 (projected)

NOTE: Typhoon Texas water park employs six full-time employees year round as well as over 500 seasonal employees, per the PCDC.

Largest employer information was not available for the unincorporated portions of TCESD2, which tend to be more industrial to the west (Wells Branch) and agricultural to the east. Known major employers within the Wells Branch area include the following companies with 500 or more employees each: Harte Hanks, Hewlett Packard, and Farmers Insurance.

Major Community Events

These are the events with the greatest impact on the local economy and/or the largest number of participants, as of 2018. The community also hosts numerous smaller events.

Event Name	Location	Timeframe	# of Participants	Estimated Economic Impact
Deutschen Pfest	Pfluger Park	3rd weekend of May (Friday 5 pm to midnight; Saturday 11 am to midnight; Sunday 11 am to 5 pm)	Averages 13,500 people over the course of the weekend. Decreased attendance in recent years due to seasonal inclement weather.	Per the City of Pflugerville: The city uses a “portion of gate proceeds” for park improvements. There are over 100 vendors, including several small businesses and nonprofits.
Pflugerville Pfirecracker Pfestival	The Pfield Stadium	4th of July, 5 to 10 pm	Averages 7,500 participants during good weather	Per the City: Revenues from sponsors and food vendors do not begin to cover the city’s \$55k cost.
Pfall Chili Pfest	Downtown Pflugerville (on/around Main Street)	3rd Saturday in October, 12 to 5 pm	Averages 5,000 participants	Per the City: “The City makes income on the approx. 40 booth vendors, which helps with festival costs.” Downtown businesses benefit from crowds. Cup sales go to Downtown Association.
Pflugerville Independent School District high school football games	The Pfield stadium	Thursday and Friday evenings, from late August to mid-November	Averages 3,000 to 5,000 persons per game	Per PfISD: Approximately \$10,000 a game
Pflugerville Chamber of Commerce EXPO & Pfamily Pfestival	the field northeast of Pecan St. and Swenson Farms Blvd.	Daytime (i.e. 10 am to 3 pm) on a Saturday between mid-September and early October	Attendance over the course of the day can range from less than 3,000 persons up to 5,000+ depending on the weather, including vendors and volunteers	Information not provided to TCESD2 as requested

Demographic Risk Factors

The risk of death or injury from fire and other mechanisms is not the same for everyone in a community. According to 2015 fire risk report from the U.S. Fire Administration (USFA):

“Casualties are not equally distributed across the U.S. population, and the resulting risk of death or injury from fire is not uniform. It is more severe for some groups than for others. Much can be learned from understanding why different segments of society are at a heightened risk. ... When determining fire risk, geographic, demographic and socioeconomic factors all come into play.”

In its report, the USFA shares the following and other observations on demographic risk factors:

RISK BY AGE

Older adults: Adults ages 50 or older have a greater relative risk of dying in fires than the general population. Those ages 85 and older have the highest risk of fire death. When physical and cognitive abilities are diminished, as is often the case for the elderly, fire risks increase. Nearly half of all older adults are on several prescription medications, which may cause drowsiness, especially when combined with alcohol. Nationally, many older adults live alone on meager incomes, often in substandard housing.

Young children: The very young (ages 4 or younger) are at a higher risk of fire death and injury than older children (ages 5+). The very young usually cannot escape independently from a fire, lacking the mental faculties and physical capabilities. Additional concerns are the thin, delicate skin of young children, their curious nature, and their inability to recognize danger. Some researchers have also found that sleeping children do not respond appropriately to smoke alarms compared to the general population, remaining quite groggy even when awoken by an adult during a fire.

RISK BY RACE

African Americans and **American Indians/Alaska Natives** are at greater risk of fire death than the general population. African American children constitute a large and disproportionate share of total fire deaths, accounting for 33% of fire deaths among children in 2015 but only representing 15% of the total population. American Indians/Alaska Natives are 40% more likely than the general population to die in a fire. This contrasts Asian/Pacific Islander Americans, who are 60% less likely to die in a fire than the general population.

RISK BY SOCIOECONOMICS

There is an inverse relationship between fire risk and income. Poorer population groups have the highest risk of fire injury or death, while the wealthiest have the lowest risk per national statistics. This is especially true for children in poor homes, who are more likely to be left alone than their affluent peers--often because they live in single-parent households.

RISK BY GEOGRAPHIC REGION

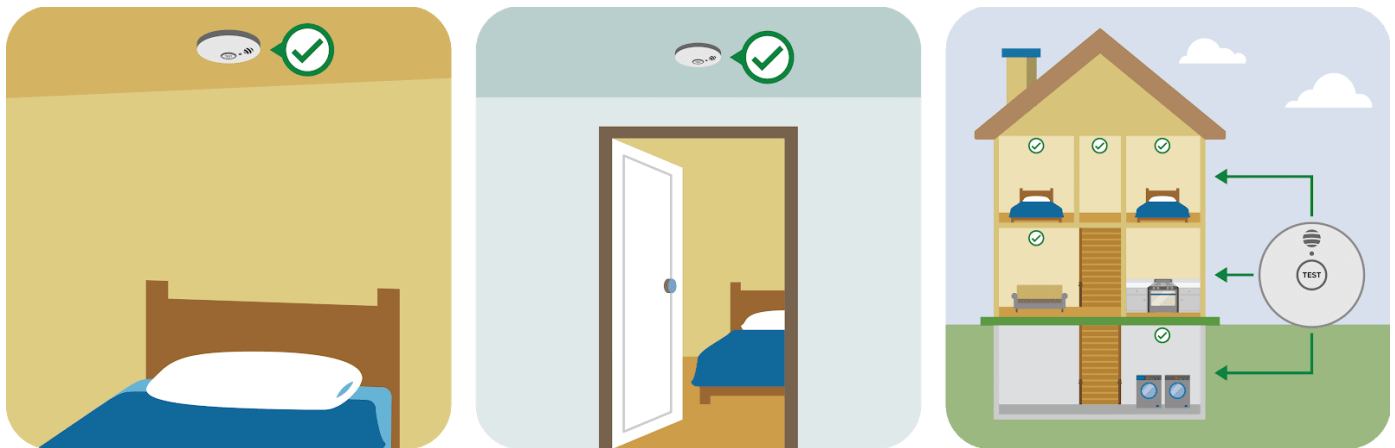
The risk of dying in a fire is greatest for people living in the U.S. South (including Texas). This may be attributed to the intermittent need for occasional heating from portable heating devices. Other sources including the Hartford Insurance Index indicate lightning strikes as a common cause of fires in the South.

RISK BY LANGUAGE AND LITERACY

Illiteracy and language barriers are additional demographic risk factors for fire and life safety issues. While speakers of a foreign language might also have basic English competency, safety messages are often better understood and more readily acted upon in their native language. According to NFPA, two populations at higher fire risk are immigrants and refugees:

“Language barriers, cultural differences, and inexperience with unfamiliar home technologies are factors that mark the challenges of helping newcomers live safely from the threat of fire in the home.”

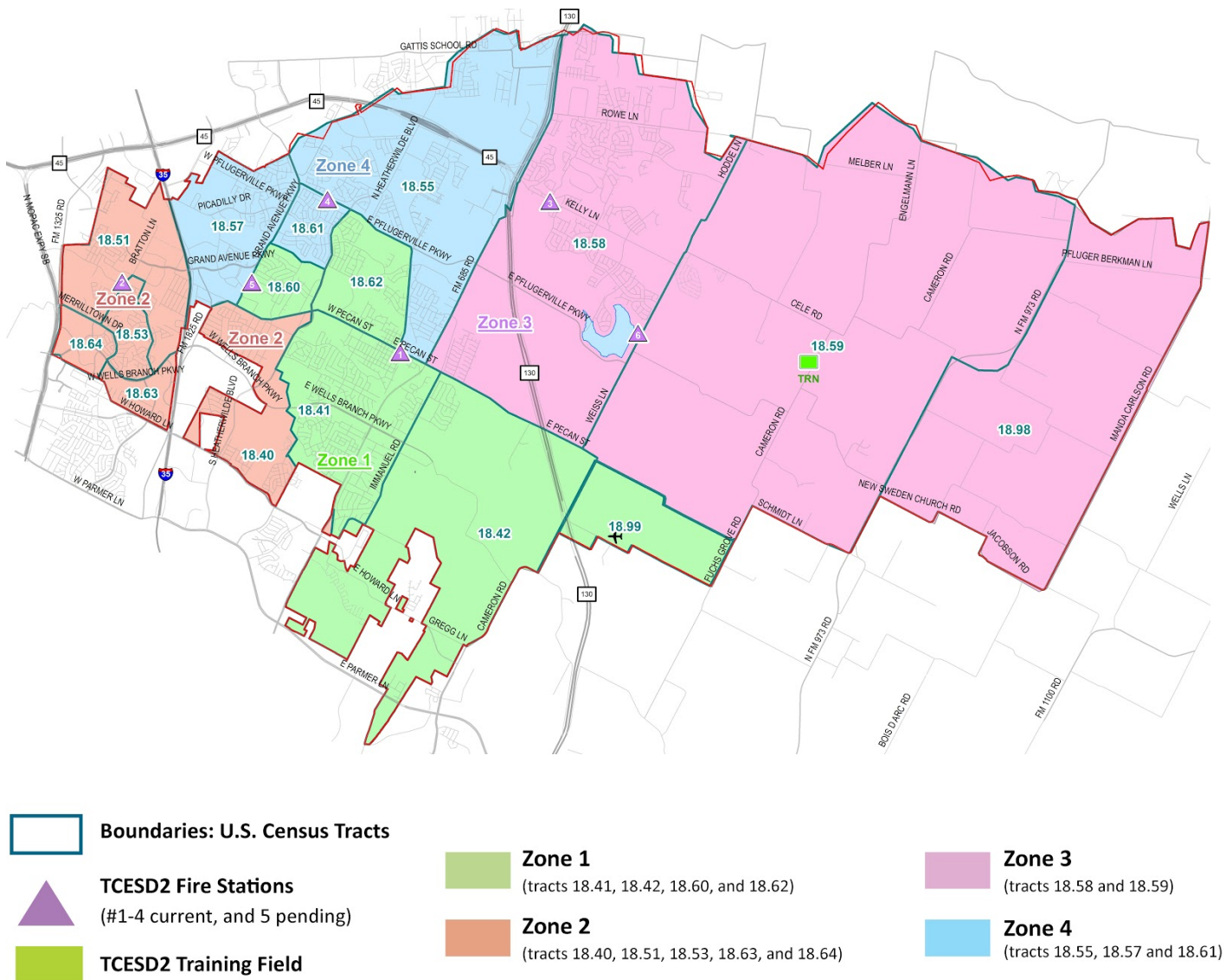
The USFA goes on to explain that more than 30 million adults in the U.S. cannot read, write or do basic math above a third-grade level. Just because someone can speak a language (whether English or a foreign language) does not necessarily mean he/she can read and understand written messages from the fire department on signs, fliers, news media reports, or social media. Effectively delivering safety messages to people from diverse linguistic and cultural backgrounds, who may have varying degrees of literacy, can be a major challenge to keeping communities safe. Messages with pictures, as shown in this USFA pictograph illustrating where smoke alarms are needed in a home, can help overcome some communication barriers.



DEMOGRAPHIC PROFILE

TCESD2 utilized U.S. Census 2016 data estimates to create this demographic profile, based on the District's four current fire station operational response areas. For the purposes of this CRA, the District identified these four response areas as "zones," which generally align with groups of U.S. Census tracts. (For example: Zone 1 is roughly the same as Fire Station 1's primary response area.) The following data points were reviewed and analyzed for the entire District and also for each TCESD2 response zone:

- Zone population (number of people)
- Age
- Disabilities
- Household income (both the total annual household income as a dollar figure, and the percentage of households living under the poverty line of approximately \$35,000 a year)
- Language
- Race



DISTRICT-WIDE DEMOGRAPHICS

TOTAL DISTRICT POPULATION:

121,338 people

ANNUAL HOUSEHOLD INCOME:

18.6% less than \$35,000

\$82,934 on average

DISABILITIES (“difficulties”):

2.24% hearing

1.61% vision

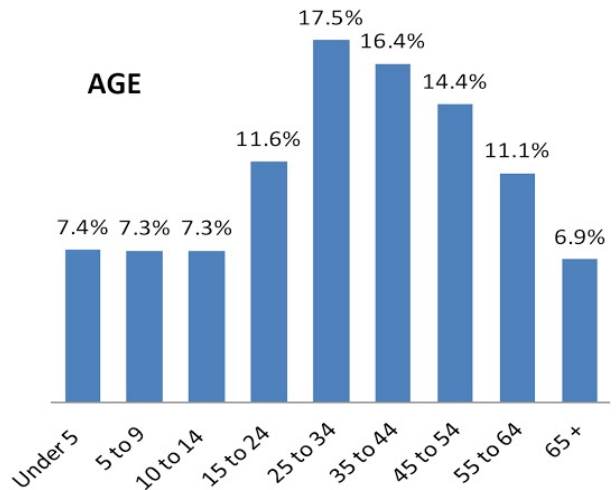
3.17% cognitive

4.15% ambulatory

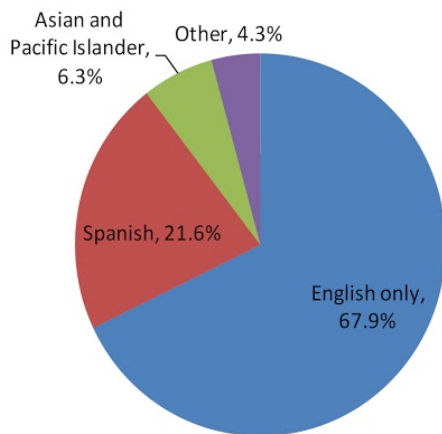
1.61% self-care

3.06% independent living

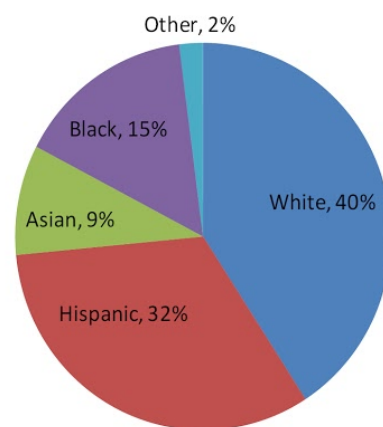
AGE



LANGUAGE



RACE



TCESD2 Demographic Highlights

Nearly 1 in 5 of all households in the District lives below the poverty line. The smallest percentage of these households are in Zone 3 at 7% of the households, compared to 25% of the households in Zones 1 and 2. The average annual household income for the District is \$82,934.

Of the 121,338 total District population, age brackets for risk groups are as follows:

- 26,694 (or 24%) of residents are “younger children” under age 14
- 14,075 (or 12%) are “young adults” age 15 to 24
- 13,470 (or 11%) are “younger seniors” age 55 to 64
- 8,378 (or 7%) are “older seniors” age 65 or older

The TCESD2 community racial composition is approximately 40% White, 32% Hispanic, 15% African American, 9% Asian, and 2% other races. The two racial groups that the USFA identified as being the greatest risk of dying in a fire compared to the general population are represented as follows in the TCESD2 community:

- The total number of African Americans is 9,722.
- The total number of American Indians/Alaska Natives is 323.

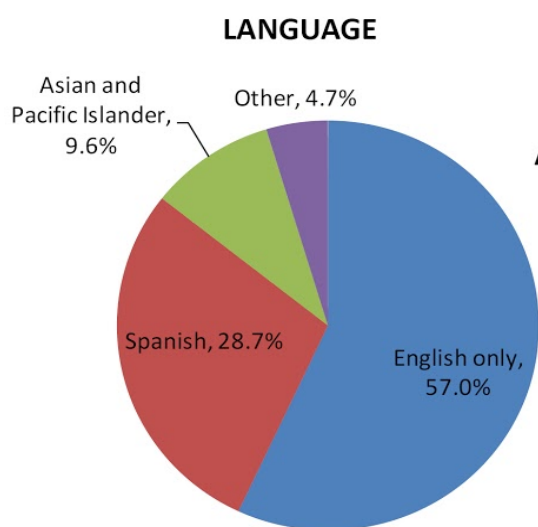
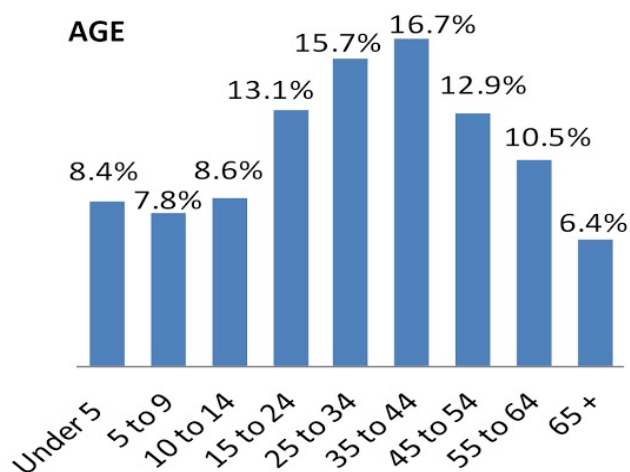
Nearly 1 in 4 residents speak Spanish, and 6% of residents speak an Asian or Pacific Islander language.

Source: 2016 U.S. Census American Community Survey 5-year estimates

Demographic Zone Comparison

	District Wide	Zone 1	Zone 2	Zone 3	Zone 4
Population	121,338	38,111	31,132	22,969	27,478
Age					
Under 5	7.4%	8.4%	8.4%	9.8%	3.1%
5 to 9	7.3%	7.8%	6.2%	8.3%	7.6%
10 to 14	7.3%	8.6%	5.7%	7.1%	8.1%
15 to 24	11.6%	13.1%	11.1%	10.3%	12.1%
25 to 34	17.5%	15.7%	23.4%	16.8%	15.2%
35 to 44	16.4%	16.7%	16.4%	18.0%	16.6%
45 to 54	14.4%	12.9%	12.7%	15.6%	16.3%
55 to 64	11.1%	10.5%	9.6%	8.6%	10.5%
65+	6.9%	6.4%	6.5%	5.6%	7.1%
Annual Household Income					
Percent less than \$35,000	18.6%	22.5%	25.7%	7.2%	13.2%
Average	\$82,934	\$74,174	\$67,989	\$105,599	\$83,973
Race					
White	40%	31%	39%	56%	44%
Hispanic	32%	40%	33%	23%	29%
Asian	9%	13%	8%	6%	8%
Black	15%	13%	18%	13%	17%
Other	2%	2%	2%	2%	2%
Language					
English Only	67.9%	57%	65.6%	82.1%	73.7%
Spanish	21.6%	28.7%	24.2%	23.3%	16.7%
Asian/Pacific Islander	6%	9.6%	3.9%	4.4%	5.8%
Other	4.3%	4.7%	6.3%	1.2%	3.9%
Disabilities ("difficulties")					
Hearing	2.24%	2.10%	1.80%	2.50%	3.40%
Vision	1.61%	2.00%	1.60%	0.62%	2.30%
Cognitive	3.17%	3.30%	3.00%	2.70%	4.60%
Ambulatory	4.15%	4.00%	4.60%	2.80%	6.30%
Self-care	1.61%	1.70%	1.70%	1.30%	2.20%
Independent Living	3.06%	2.90%	3.60%	2.80%	3.70%

Source: 2016 U.S. Census American Community Survey 5-year estimates



38,111 people

22.5% less than \$35,000

\$74,174 on average

2.1% hearing

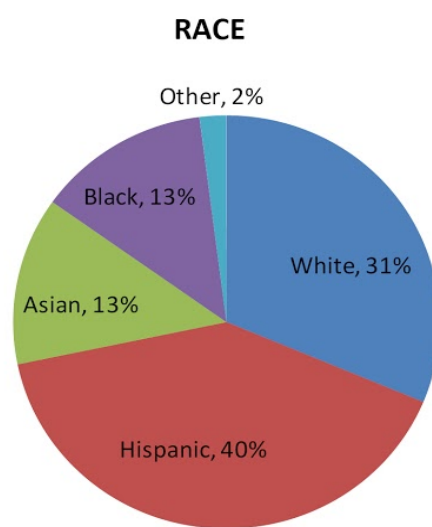
2% vision

3.3% cognitive

4% ambulatory

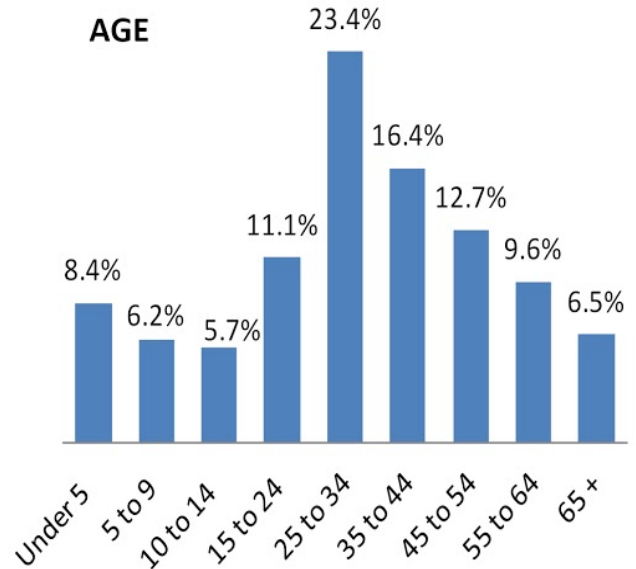
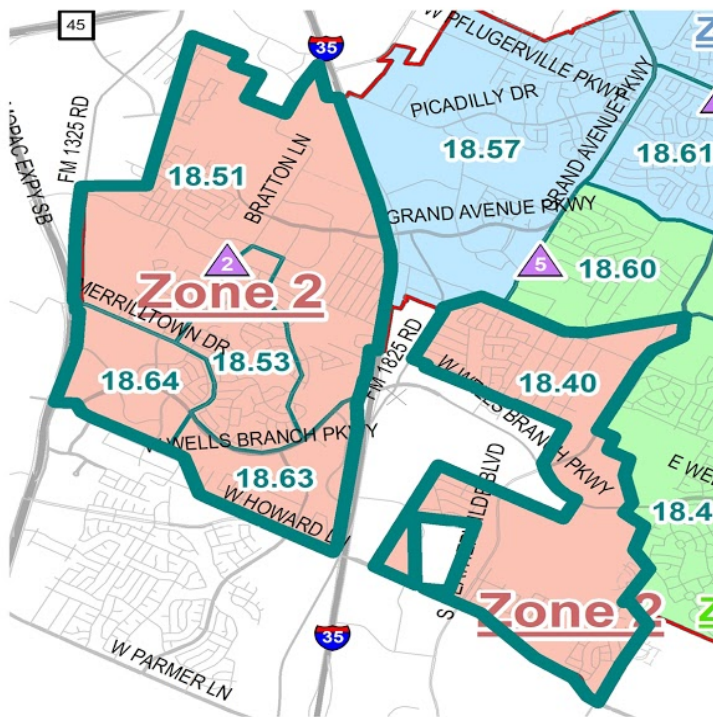
1.7% self-care

2.9% independent living

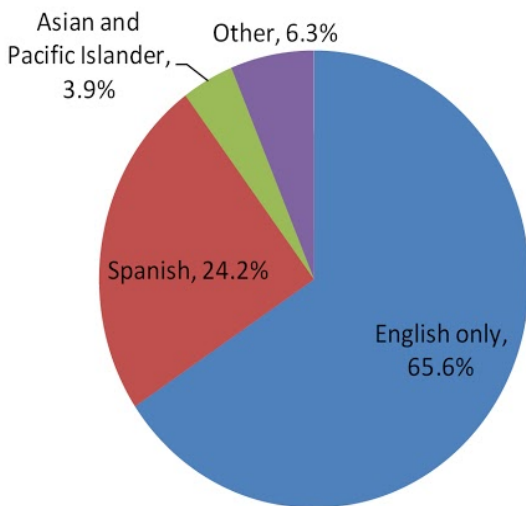


- Zone 1 is not only the most populated within the TCESD2 community at 38,111 total residents (compared to fewer than 23,000 people in Zone 3), but it was also the most relatively diverse.
- Zone 1 is home to the most Asians (3,954) which is well over half of ALL the Asians within the entire TCESD2 community and the most speakers of an Asian or Pacific Islander language (3,657).
- Zone 1 is 40% Hispanic (15,244 people), which is both the highest concentration and total number of Hispanics in the TCESD2 community. Zone 1 includes 10,938 Spanish speakers.
- Almost one in four residents in Zone 1 lives below the poverty line.
- Zone 1 has the most seniors overall (6,460) as well as the most senior living facilities and relatively oldest housing stock. (NOTE: While Zone 1 has the most total seniors, Zone 4 has the highest density of seniors.)

Observations: TCESD2 Zone 2 Demographics



LANGUAGE



TOTAL ZONE 2 POPULATION:

31,132 people

ANNUAL HOUSEHOLD INCOME:

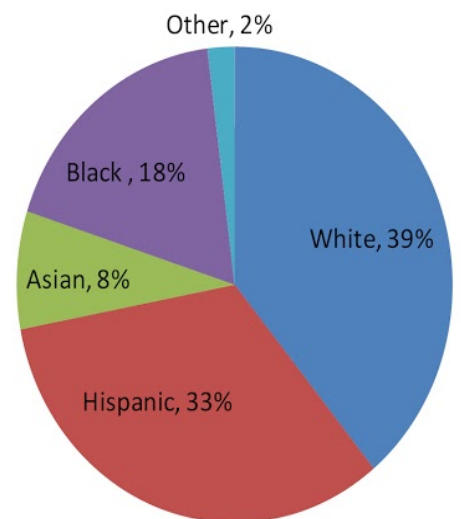
25.7% less than \$35,000

\$67,989 on average

DISABILITIES ("difficulties"):

1.8% hearing
1.6% vision
3% cognitive
4.6% ambulatory
1.7% self-care
3.6% independent living

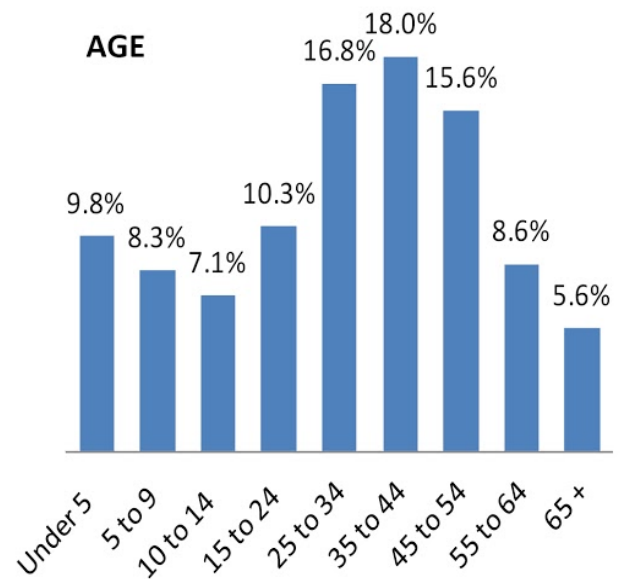
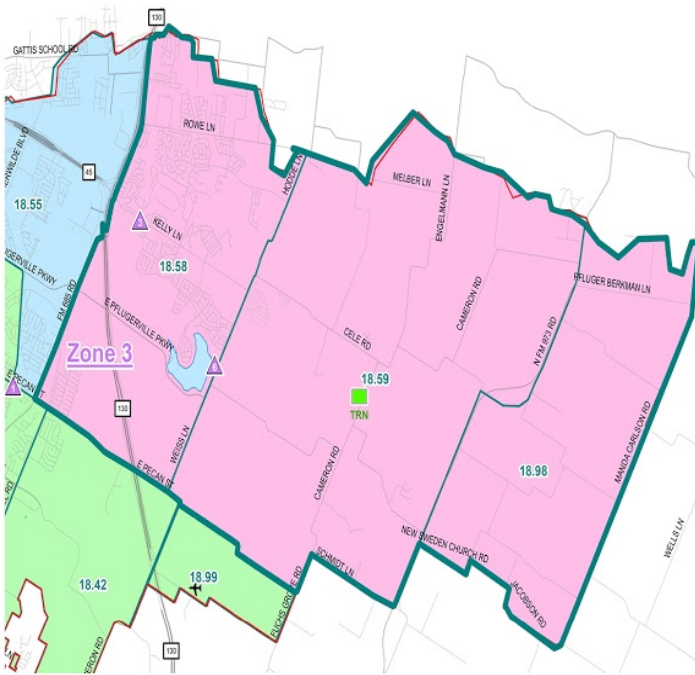
RACE



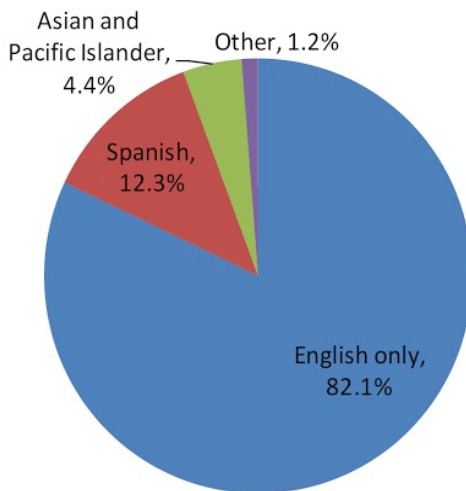
TCESD2 Zone 2 Demographic Highlights

- One in four residents in Zone 2 lives below the poverty line.
- Zone 2 has the greatest density of African Americans (18%) and greatest total number of African Americans (5,604 people), closely followed by Zone 1 (13%, 4,954 people).
- Residents of this zone have the lowest household income in the District, with an average annual income of \$68,000 compared to the District high of \$106,000 in Zone 3 and District-wide average of \$83,000.

Observations: TCESD2 Zone 3 Demographics



LANGUAGE



TOTAL ZONE 3 POPULATION:

22,969 people

ANNUAL HOUSEHOLD INCOME:

7.2% less than \$35,000

\$105,599 on average

DISABILITIES ("difficulties"):

2.5% hearing

.62% vision

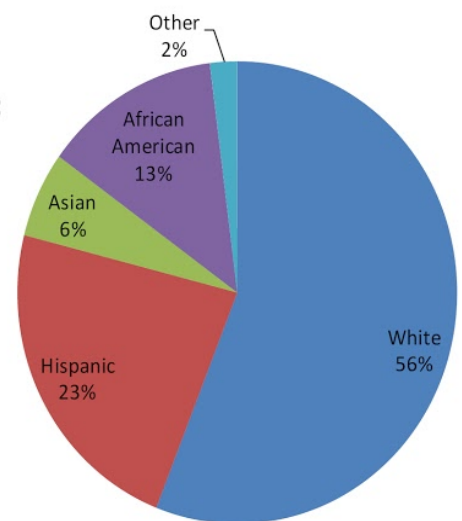
2.7% cognitive

2.8% ambulatory

1.3% self-care

2.8% independent living

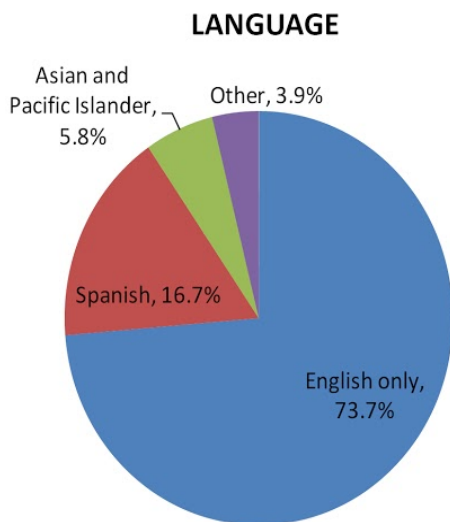
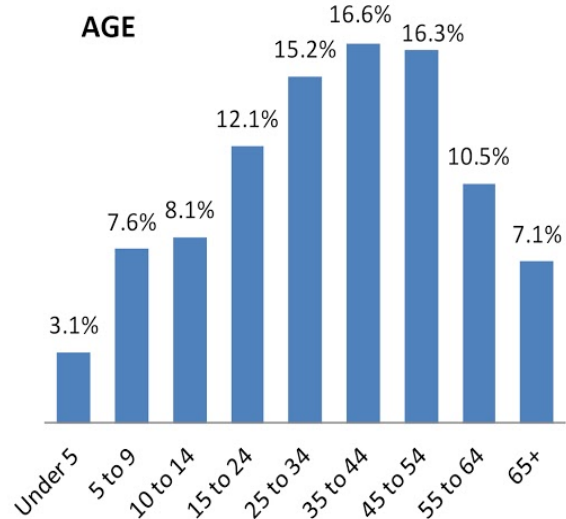
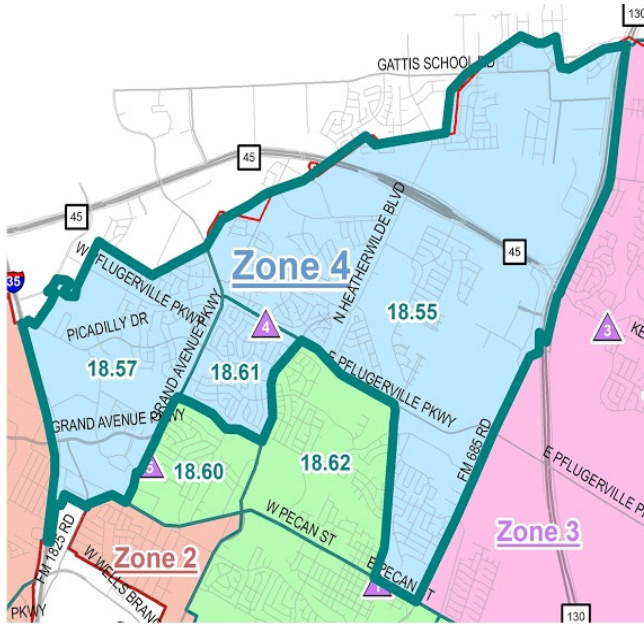
RACE



TCESD2 Zone 3 Demographic Highlights

- Zone 3 has the fastest growing population in the District; residential development is heavily concentrated here. However, currently this is the least populated zone in the District.
- Zone 3 has the greatest density of children, with 1 in 4 residents being 14 years old or younger. Also, this zone has the greatest percentage of the riskiest childhood age group per the USFA: children under age 4, who represent 10% of the population in this zone.
- This zone is predominantly white, with 82% English speakers.
- This zone is much more affluent than the three other zones; average household income here is nearly twice that of Zone 2.

Observations: TCESD2 Zone 4 Demographics



TOTAL ZONE 4 POPULATION:

27,478 people

ANNUAL HOUSEHOLD INCOME:

13.2% less than \$35,000

\$83,973 on average

DISABILITIES ("difficulties"):

3.4% hearing

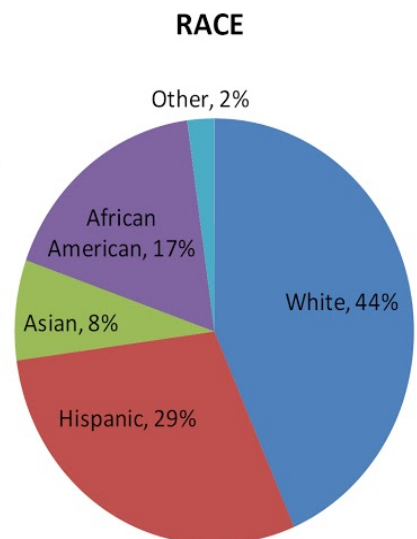
2.3% vision

4.6% cognitive

6.3% ambulatory

2.2% self-care

3.7% independent living



TCESD2 Zone 4 Demographic Highlights

- Zone 4 has the greatest density of seniors age 55 or older, at approximately 4,825 people.
- Zone 4 has the least children; the concentration of young children is less than half that of any other zone in the District.
- Zone 4 has the second highest household income in the District, on average.
- The population in Zone 4 represents the highest risks for the most types of disabilities, by far. Approximately 934 people in this area report having a hearing disability, 1,264 have a cognitive disability, 1,731 have an ambulatory disability, and 1,017 have an independent living disability.

BUILDING STOCK PROFILE

The Building Stock Profile describes occupancies in the community and identifies some of their risk factors such as building type, age, use, and the occupants' personal risk factors.

Housing Risk Factors

HOUSING AGE

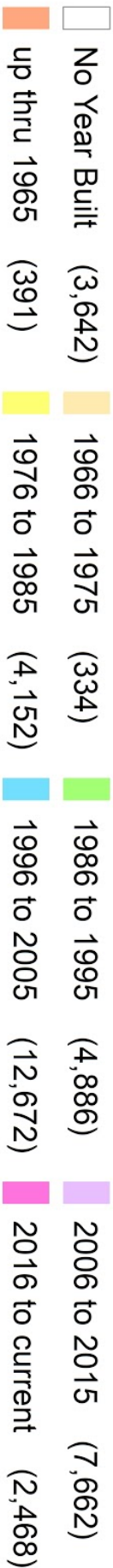
When studying fire risk factors in residential housing, it is important to know and consider when the home was built for reasons including:

- **Contaminants** - Construction materials in older homes more often contain asbestos and other contaminants, creating hazards for the residents, first responders, and investigators.
- **Code Changes** - The last 50 years have seen several major updates to international and local codes including fire code, building code, and electrical code. Codes have become more stringent and evidence-based over the decades, leading to enhanced safety for residents and first responders alike. However, certain construction materials (such as laminated I beams) that are more common in newer homes are actually prone to earlier collapse during a house fire.
- **Smoke Alarms and Carbon Monoxide Alarms** - With these code changes also came changes to the required number, location, power source, and general functionality of both smoke alarms and carbon monoxide (CO) alarms. For example, older homes (prior to the 1990s) typically do not have any alarms in the bedrooms. Since the early 1990s, new homes have been required to be built with hard-wired, interconnected alarms, including one in every bedroom in addition to the common area(s) and at least one on every level of the home.

The District was able to determine for this report that over 70% of the 32,600+ homes in TCESD2 were built since these code changes were enacted for alarms, putting them at generally lower risk. However, approximately 72% of the homes in TCESD2 are at risk to have expired smoke alarms, which most Americans (per a NFPA study) are not aware should be replaced every 10 years.

Data from the Travis County Central Appraisal District show that 27% of TCESD2 homes were constructed more than 24 years ago, 35% between 14 and 23 years ago, and the remaining 28% less than 13 years ago. (Homes/parcels with no age data total 10%.) Some areas within the TCESD2 community have much higher numbers of older homes than others, as shown in the Housing Age map that follows.

Source: Travis County Central Appraisal District

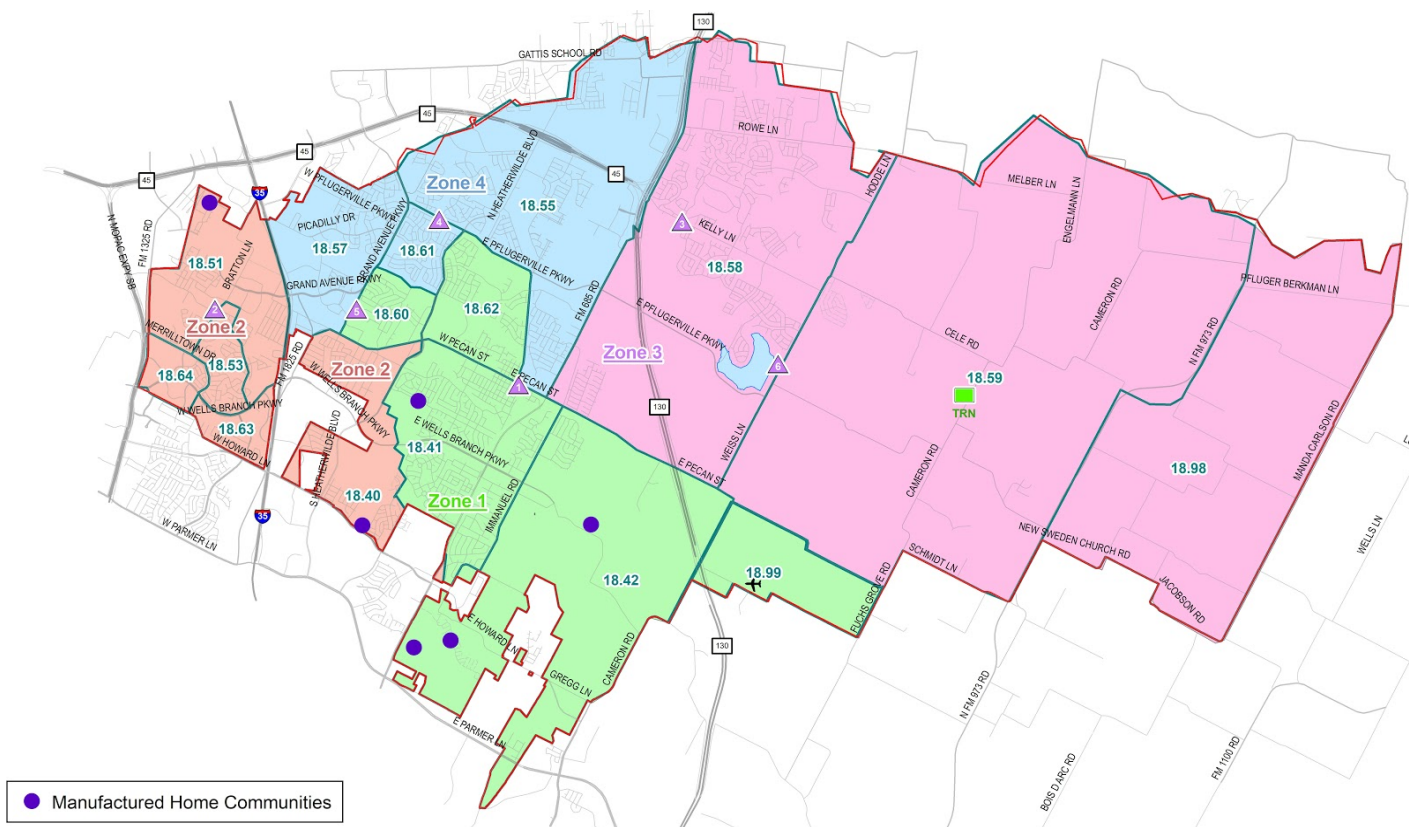


HOUSING TYPE

While the vast majority of fires across the United States do occur in residences, not all residences are at equal risk. The District studied local housing types for this report, focusing primarily on apartments and manufactured homes for the reasons listed below.

Manufactured Homes

Manufactured homes face higher fire risks than other households. Manufactured homes use light-weight construction that ignites more quickly, and these homes tend to be smaller than site-built homes “which supports more rapid fire growth to flashover,” per the NFPA’s 2013 report on manufactured home fires. The risks for manufactured home residents 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. Six communities (neighborhoods) of manufactured homes were identified in the District, as shown below, which include approximately 2,900 manufactured homes that house an estimated 7,540 people.



Apartments

Historically, apartments are the most fire-prone buildings in the District, second only to single family dwellings. Apartment residents face an elevated risk of fire injuries and death in part because fire can spread more quickly from residence to residence, especially if sprinkler systems are not present and/or attic draft stops are not intact. Across the nearly 50 local apartment complexes currently operating in the District, nearly a third (about 31%) are not fully sprinklered or lack automatic fire alarm systems. There are

well over 12,100 units currently with a conservative estimate of at least 20,000 people living in them. Seven complexes serve only senior citizens, who are by their age at higher fire and life safety risk. The following table describes the apartment complexes now in TCESD2, **listed by the number of apartment units**.

Name of Apartments	Street Address	City or County?	# Units	# Buildings	# Floors	Sprinklers
Hyde Park	2801 Wells Branch Pkwy, Austin	County	576	23	3	Yes
Chardonnay	1801 Wells Branch Pkwy, Austin	County	504	23	2&3	Only Building #19
Mansions at Stone Hill	1316 Town Center Dr, Pflugerville	City	414	39	2&4	Yes
Emerson, The	1221 New Meister Lane, Pflugerville	City	384	31	2	Yes
Hunt Club	3101 Shoreline Drive, Austin	County	384	22	2&3	No
Churchill Crossing	14100 Thermal Drive, Austin	County	372	24	2&3	No
Century Stone Hill	1225 Town Center Dr, Pflugerville	City	370	30	2&4	Yes
Sage at Place (2)	15835 Foothill Farms Loop, Pflugerville	City	351	34	2&3	Yes
Villas at Tech Ridge	13838 The Lakes Blvd., Pflugerville	County	350	12	3	Yes
Aura	3300 Wells Branch Pkwy, Austin	County	348	12	3	Yes
Autumn Ranch	413 Swenson Farms Blvd, Pflugerville	City	336	14	3	Yes
Colonial Grand	1630 Wells Branch Pkwy, Austin	County	336	14	3	Yes
Oaks at Tech Ridge	14000 The Lakes Blvd, Pflugerville	County	336	12	3	Yes
Estraya at Falcon Pointe	2132 Falcon Village Lane, Pflugerville	City	324	26	3	Yes
Riverhorse Ranch	1525 Grand Avenue, Pflugerville	City	324	16	2&3	Yes
Lakes at Renaissance Park	14000 Renaissance Court, Austin	County	308	15	3	Only Building #O
Preserve at Wells Branch	1773 Wells Branch, Austin	County	308	15	3	Only Building #1
Park at Wells Branch	1915 Wells Branch, Austin	County	304	18	2&3	No
Lodge at Merriltown, The (senior living)	14745 Merriltown Drive, Austin	County	294	59	1&2	No
Ridgecrest	3101 Wells Branch Pkwy, Austin	County	284	14	2&3	Yes
Nine at Shoreline	3501 Shoreline Drive, Austin	County	282	4	2&3	Yes
Broadstone	1720 Grand Ave, Pflugerville	County	280	12	3	Yes
Riverhorse Ranch I	16107 White River Blvd, Pflugerville	City	278	13	2&3	Yes
Continued on next page						

Continued from previous page

Name of Apartments	Street Address	City or County?	# Units	# Buildings	# Floors	Sprinklers
Heritage Lakes (senior living)	2215 Kelly Lane, Pflugerville	City	273	Not yet completed	-	Yes
Villas at Spring Trails	901 New Meister Ln, Pflugerville	City	270	22	2&3	Yes
Highlands, The	1501 S. Heatherwilde Ave, Pflugerville	County	264	14	3	Yes
Milan	1720 Wells Branch Pkwy, Austin	County	263	9	3	Yes
Rosemont at Heather Bend	16701 Heatherwilde, Pflugerville	City	256	13	2&3	Yes
Biltmore at the Park	16021 Biltmore Ave, Pflugerville	City	250	12	3	Yes
Westchester Woods	19600 Heatherwilde Blvd, Pflugerville	City	250	25	2&3	Yes
Links at Forest Creek	20404 Poppy Hills Trail, Round Rock	County	220	55	2	Yes
Parkside Crossing	3400 Shoreline Drive, Austin	County	218	11	2&3	Only 3-story buildings
Conservatory, The (senior living)	14320 Tandem Blvd, Austin	County	216	3	4	Yes
Arbors, The	1831 Wells Branch Pkwy, Austin	County	212	16	2&3	Only Bldg. #5
Cambridge Villas Apts. (senior living)	15711 Dessau Road, Pflugerville	City	208	55	1	Yes
Allegre Point	1833 Cheddar Loop, Austin	County	170	11	3	Yes
Cove at Heatherwilde (senior living)	16500 Yellow Sage, Pflugerville	City	168	42	1	Yes
Home Towne at Picadilly (senior living)	500 Grand Ave, Pflugerville	City	168	22	3	Yes
Cottages, The	14300 Tandem Blvd, Austin	County	167	17	2	Only Bldg. #3
Affinity at Wells Branch (senior living)	14508 Owen Tech Blvd, Austin	County	154	1	4	Yes
Sweetwater	2323 Wells Branch Pkwy, Austin	County	152	8	2&3	No
Sage at Place (1)	1001 Nimbus Drive, Pflugerville	City	104	26	2	No
Townes on 10th	1200 S 10th St., Pflugerville	City	90	25	2	Yes
Windermere Townhomes	15914 Windermere, Pflugerville	City	80	22	2	Yes
Arts at Bratton's Edge	15405 Long Vista Dr., Austin	County	78	5	3	Yes
Pflugerville Meadow Apts.	201 Meadow Ln, Pflugerville	City	19	6	1	No

Continued on next page

Continued from previous page

Name of Apartments	Street Address	City or County?	# Units	# Buildings	# Floors	Sprinklers
La Rue Condominiums	209 Noton Ct., Pflugerville	City	10	1	2	No
Walter Avenue Apts	200 Walter Ave., Pflugerville	City	8	2	2	No
TOTALS:		26 county; 22 city	12,161 units	904 buildings	n/a	15 not fully sprinklered

Senior Living and Group Homes

This category includes a total of 45 senior- or group-home occupancies in the District, including senior independent living apartments, assisted living facilities, nursing facilities, and group homes with vulnerable adult populations of varying disabilities (physical, cognitive/intellectual, mental). They are mapped at the end of this Building Stock profile. These residents tend to have a diminished ability to self-evacuate, meaning enforcement, education, and emergency rescue capabilities are especially important. For more information about fire risks among the elderly, see this report's Demographic Profile.

OTHER BUILDING RISK FACTORS

Schools

The likelihood of a fire spreading at a well designed school with modern-day fire suppression and alarm systems is relatively low. However, the impact of a school fire or malicious attack could be devastating in terms of the risky age groups served, as well as the numerous variables in their activities and whereabouts within the school. The following table lists each of the **35 public and charter schools in TCESD2**, indicating that about 29% of local schools are not fully sprinklered. (The District may include similar information about daycares/preschools in a future CRA.)

School Name	Sprinklers
BROOKHOLLOW ELEMENTARY SCHOOL	Yes
CELE MIDDLE SCHOOL	Yes
CHAPARRAL STAR ACADEMY	Yes
CONCORDIA HIGH SCHOOL	No
DEARING ELEMENTARY SCHOOL	Yes
FANNIE MAE CALDWELL ELEMENTARY	Yes
HARMONY CHARTER SCHOOL (The District frequently runs calls here, although it's in the Austin Fire Dept. jurisdiction.)	Yes
HENDRICKSON HIGH SCHOOL	Yes
HIGHLAND PARK ELEMENTARY	Yes
IDEA CHARTER SCHOOL	Yes
Continued on next page	

Continued from previous page	
School Name	Sprinklers
JOE LEE JOHNSON ELEMENTARY	Yes
JUBILEE CHARTER SCHOOL (formerly Athlos)	Yes
KELLY LANE MIDDLE SCHOOL	Yes
MOTT ELEMENTARY SCHOOL	Yes
MURCHISON ELEMENTARY SCHOOL	Yes
NORTHWEST ELEMENTARY	No
OLD TIMMERMAN ELEMENTARY - VACANT	No
PARKCREST MIDDLE SCHOOL	Stage Only
PFLUGERVILLE ELEMENTARY SCHOOL	No
PFLUGERVILLE HIGH SCHOOL	Partial
PFLUGERVILLE MIDDLE SCHOOL	No
PFLUGERVILLE OPPORTUNITY CENTER	Yes
PREMIER HIGH SCHOOL	Yes
RENAISSANCE EDUCATION FOUNDATION	Yes
RIOJAS ELEMENTARY SCHOOL	Yes
ROWE LANE ELEMENTARY	Yes
RUTH BARRON ELEMENTARY SCHOOL	Yes
SPRINGHILL ELEMENTARY SCHOOL	Stage Only
TIMMERMAN ELEMENTARY	Yes
VIRGINIA COLLEGE	Yes
WEISS HIGH SCHOOL	Yes
WELLS BRANCH ELEMENTARY	Partial
WIELAND ELEMENTARY	Yes
WINDERMERE ELEMENTARY	Stage Only
WINDERMERE PRIMARY	Yes

Hotels

There are currently five hotels located in the District, with two more approved for construction in the near future. Most of these are classified as “mid rise” hotels (4 stories) for the purpose of emergency response, however one of the hotels pending construction is expected to exceed 4 stories making it a “high rise.” Risk factors for hotels include their high occupancy load, close proximity of clubs/restaurants to sleeping areas, storage of flammable materials, transient population, guests’ unfamiliarity with the property’s layout and exits, and human behavioral risks.

Assembly Occupancies

Assembly occupancies allow large numbers of people to gather, which for TCESD2 translates to a higher concentration of people to potentially rescue, treat and transport in the event of a fire or emergency medical situation. Patrons of assembly occupancies may not be familiar with the variety of emergency exits. Additionally, criminals seeking to cause widespread harm could target an assembly occupancy to produce a higher number of casualties, whether through bombs, firearms, chemical attacks, or other weapons. This pattern has emerged nationally especially within schools, churches, and movie theaters.

The District identified assembly occupancies with a maximum occupancy load over 300 people as “high risk” in terms of possible impact. They are categorized and listed below:

Large Churches: (15 total)

CALVARY CHAPEL	1601 W PECAN ST
CHURCH OF JESUS CHRIST OF LDS	700 N HEATHERWILDE BLVD
FIRST BAPTIST CHURCH	306 S 10TH ST
FIRST UNITED METHODIST CHURCH	500 E PECAN ST
HILL COUNTRY BIBLE CHURCH	303 E PFLUGERVILLE PKWY
IMMANUEL LUTHERAN CHURCH	500 IMMANUEL RD
NEW SWEDEN LUTHERAN CHURCH	12809 NEW SWEDEN CHURCH RD
PFLUGERVILLE COMMUNITY CHURCH	1214 E PFENNIG LN
POINT OF GRACE LUTHERAN CHURCH	19507 FM 685 RD
SHORELINE CHRISTIAN CENTER	15201 BURNET RD
ST. ELIZABETH'S CATHOLIC CHURCH	1520 N RAILROAD AVE
ST. MARY'S MISSIONARY BAPTIST CHURCH	1202 W PECAN ST
STONEHILL 7TH DAY ADVENTIST CHURCH	4301 KELLY LN
THE FAMILY ROOM CHURCH	16108 YELLOW SAGE
WELLS BRANCH COMMUNITY CHURCH	2113 E WELLS BRANCH PKWY

Event / Entertainment Centers: (7 total)

AUSTIN INDOOR SOCCER	1404 ROYSTON LN
Continued on next page	

Continued from previous page	
AUSTIN PARK AND PIZZA	16231 N IH 35 SVRD S
CINEMARK MOVIE THEATER	18820 HILLTOP COMMERCIAL DR
LUCAS EVENT CENTER	15803 WINDERMERE DR
SPARETIME ENTERTAINMENT CENTER	1724 FM 685 RD
THE PFIELD (PFISD)	1440 W. PECAN ST
TYPHOON TEXAS	18500 SH 130 RD

Gyms / Recreation Centers: (5 total)

24 HOUR FITNESS	1401 TOWN CENTER DR
GOLD'S GYM	21315 NORTH SH 130 NB
PFLUGERVILLE RECREATION CENTER	400 IMMANUEL RD
PLANET FITNESS	2700 W PECAN ST
WELLS BRANCH MUD REC CENTER	3000 SHORELINE DR

Parks with frequent mass gatherings over 1,000 people: (1 total)

NORTHEAST METROPOLITAN PARK	2906 E PECAN ST
-----------------------------	-----------------

Clubs/bars open after dark with most of their business coming from alcohol sales: (13 total)

BAHADI'S	907 FM 685 RD
EDGE OF TOWN, THE	15601 VISION DR
FOXIES	16328 N IH 35 SVRD S SVRD
GROWLER BAR, THE	1300 FM 685 DR
HANOVERS DRAUGHT HAUS	108 E MAIN ST
LAST CALL	1615 GRAND AVENUE PKWY 212
MARSHALL'S TAVERN	113 E PECAN ST
Continued on next page	

Continued from previous page	
MAVERICKS DANCE HALL	1700 GRAND AVENUE PKWY
PERFECT 10	16511 BRATTON LN
RAGGEDY ANNE'S	2113 W WELLS BRANCH PKWY 600
RED ROOSTER'S PUB & GRUB	109 E PECAN ST
SPINNERS	14106 N IH 35 SB A
UNCLE GARY'S BAR	19903 FM 685 RD BLDG B

[illegible]

RESPONSE PROFILE

Selected TCESD2 Call Type Counts by Year: Jan. 2013 to May 2018

As a measure of risk and predictor of future incidents, NFPA 1730 states that a Community Risk Assessment should include a “Response Profile” of past responses to a wide variety of call types including fires, medical, carbon monoxide, traffic accidents, rescues, and other calls specific to the community. The table below lists the call types recommended for review by NFPA 1730 and others. **These call types are mapped on the following pages by call location.** The data analysis for each map focuses on the 2013 to 2017 years, since the full years’ data for 2018 was not available when this analysis began.

Call Type	2013	2014	2015	2016	2017	January to May 2018
Apartment Structure Fire	12	12	15	21	18	12
Brush Fire	13	4	5	3	6	6
Carbon Monoxide	7	19	44	32	36	15
Cardiac Related	288	275	353	386	330	156
Non-Traffic with Police	310	325	329	327	376	179
Structure Fires - Other	49	52	58	62	64	35
Traffic Accident	490	474	507	625	673	292
Water Rescue	7	9	7	4	5	2

TCESD2 Top 10 Call Types: Total Jan. 2013 to May 2018

Because the NFPA 1730-recommended call type analysis did not include some of the District’s most frequent calls, the District also compiled the top call types to ensure that community-specific response risks were identified. Calls from January 1, 2013 to May 28, 2018 totaled 42,872. Of these, 8,936 calls were fire related and 33,936 were medical related.

Rank	Call Type	Total Calls 1/13 to 5/18	% of All TCESD2 Calls
1	Sick	6,636	15%
2	Traffic Injury	3,353	8%
Continued on next page			

Continued from previous page

Rank	Call Type	Total Calls 1/13 to 5/18	% of All TCESD2 Calls
3	Fire alarm activation	3,121	7%
4	Falls	3,111	7%
5	Respiratory	2,463	6%
6	Unknown Medical Condition	1,732	4%
7	Chest Pain	1,546	4%
8	Assault	1,453	3%
9	Seizure	1,364	3%
10	Alarm Activation - Medical	1,217	3%

As the District began operating its own ambulance-based EMS services in 2017, it will be beneficial moving forward to know how the TCESD2 community is faring in comparison to national norms for preventable injury deaths. (See chart below from the U.S. Centers for Disease Control and Prevention.) The District will continue honing its ability to analyze medical calls on its newly acquired database, called ESO.

10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States – 2016

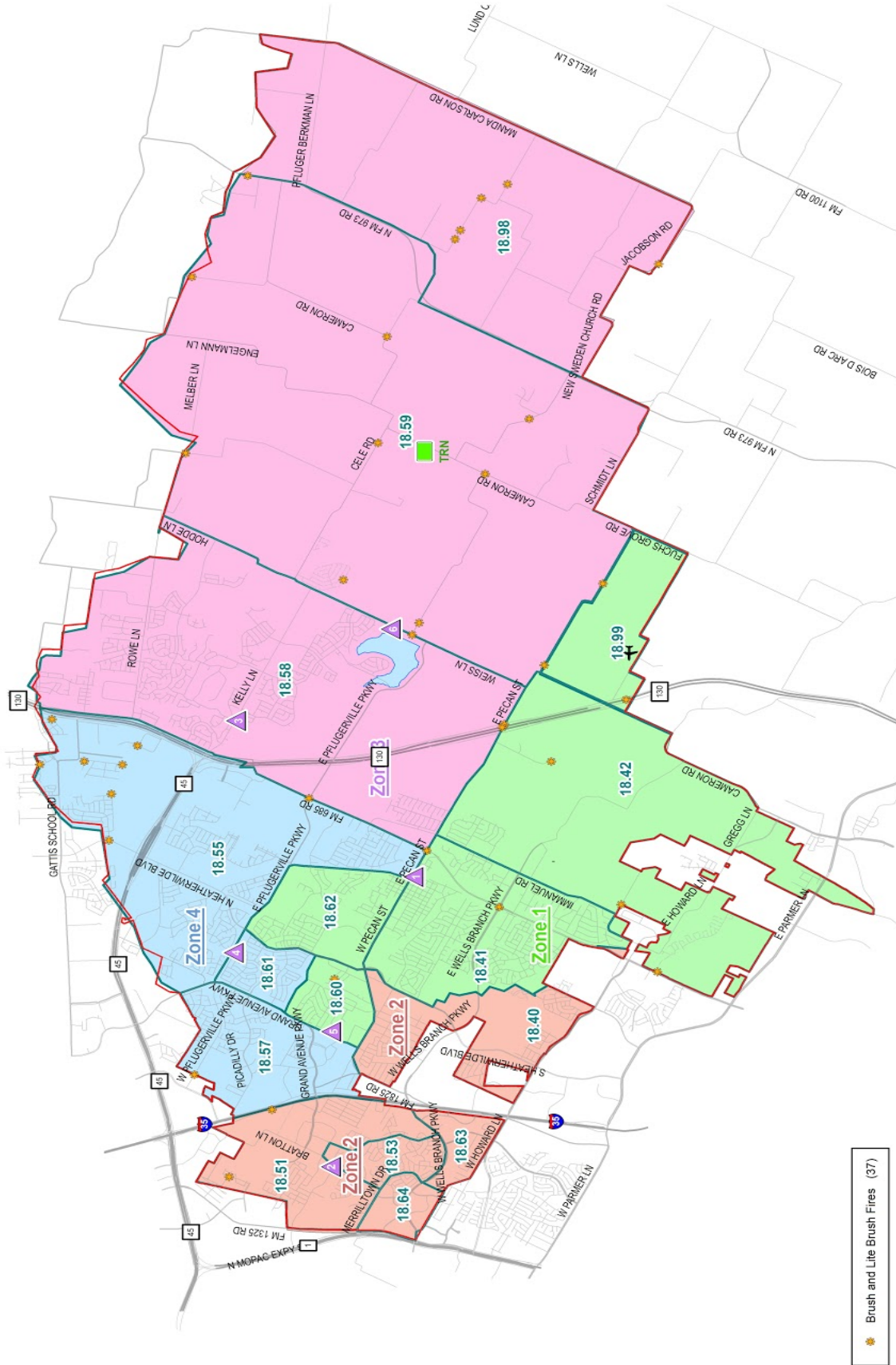
Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Suffocation 1,023	Unintentional Drowning 425	Unintentional MV Traffic 384	Unintentional MV Traffic 455	Unintentional MV Traffic 7,037	Unintentional Poisoning 14,631	Unintentional Poisoning 13,278	Unintentional Poisoning 13,439	Unintentional Poisoning 9,438	Unintentional Fall 29,668	Unintentional Poisoning 58,335
2	Homicide Unspecified 132	Unintentional MV Traffic 334	Unintentional Drowning 147	Suicide Suffocation 247	Unintentional Poisoning 4,997	Unintentional MV Traffic 7,010	Unintentional MV Traffic 5,075	Unintentional MV Traffic 5,536	Unintentional MV Traffic 5,397	Unintentional MV Traffic 7,429	Unintentional MV Traffic 38,748
3	Unintentional MV Traffic 88	Unintentional Suffocation 118	Unintentional Fire/Burn 78	Suicide Firearm 160	Homicide Firearm 4,553	Homicide Firearm 4,510	Suicide Firearm 3,099	Suicide Firearm 3,873	Suicide Firearm 4,067	Suicide Firearm 5,756	Unintentional Fall 34,673
4	Homicide Other Spec., Classifiable 63	Homicide Unspecified 114	Homicide Firearm 68	Unintentional Drowning 103	Suicide Firearm 2,683	Suicide Firearm 3,298	Homicide Firearm 2,555	Suicide Suffocation 2,112	Unintentional Fall 2,679	Unintentional Unspecified 5,021	Suicide Firearm 22,938
5	Undetermined Suffocation 60	Unintentional Fire/Burn 107	Unintentional Suffocation 35	Homicide Firearm 95	Suicide Suffocation 2,100	Suicide Suffocation 2,643	Suicide Suffocation 2,199	Suicide Poisoning 1,736	Suicide Poisoning 1,538	Unintentional Suffocation 3,631	Homicide Firearm 14,415
6	Undetermined Unspecified 38	Unintentional Pedestrian, Other 82	Unintentional Other Land Transport 24	Unintentional Other Land Transport 64	Unintentional Drowning 530	Undetermined Poisoning 855	Suicide Poisoning 1,144	Homicide Firearm 1,420	Suicide Suffocation 1,474	Unintentional Poisoning 2,458	Suicide Suffocation 11,642
7	Unintentional Drowning 38	Homicide Firearm 64	Unintentional Pedestrian, Other 18	Unintentional Fire/Burn 52	Suicide Poisoning 426	Suicide Poisoning 767	Undetermined Poisoning 788	Unintentional Fall 1,238	Unintentional Suffocation 792	Adverse Effects 2,028	Suicide Poisoning 6,698
8	Homicide Suffocation 19	Homicide Other Spec., Classifiable 64	Unintentional Firearm 16	Unintentional Suffocation 39	Homicide Cut/Pierce 340	Unintentional Drowning 463	Unintentional Fall 515	Undetermined Poisoning 929	Homicide Firearm 738	Unintentional Fire/Burn 1,150	Unintentional Suffocation 6,610
9	Adverse Effects 18	Unintentional Firearm 34	Unintentional Struck by or Against 15	Unintentional Poisoning 28	Undetermined Poisoning 289	Homicide Cut/Pierce 420	Unintentional Drowning 396	Unintentional Suffocation 478	Undetermined Poisoning 707	Suicide Poisoning 1,070	Unintentional Unspecified 6,507
10	Unintentional Natural/Environment 18	Unintentional Poisoning 34	Unintentional Other Transport 14	Unintentional Firearm 23	Unintentional Fall 199	Unintentional Fall 326	Homicide Cut/Pierce 350	Unintentional Suffocation 419	Unintentional Unspecified 625	Suicide Suffocation 859	Undetermined Poisoning 3,827

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



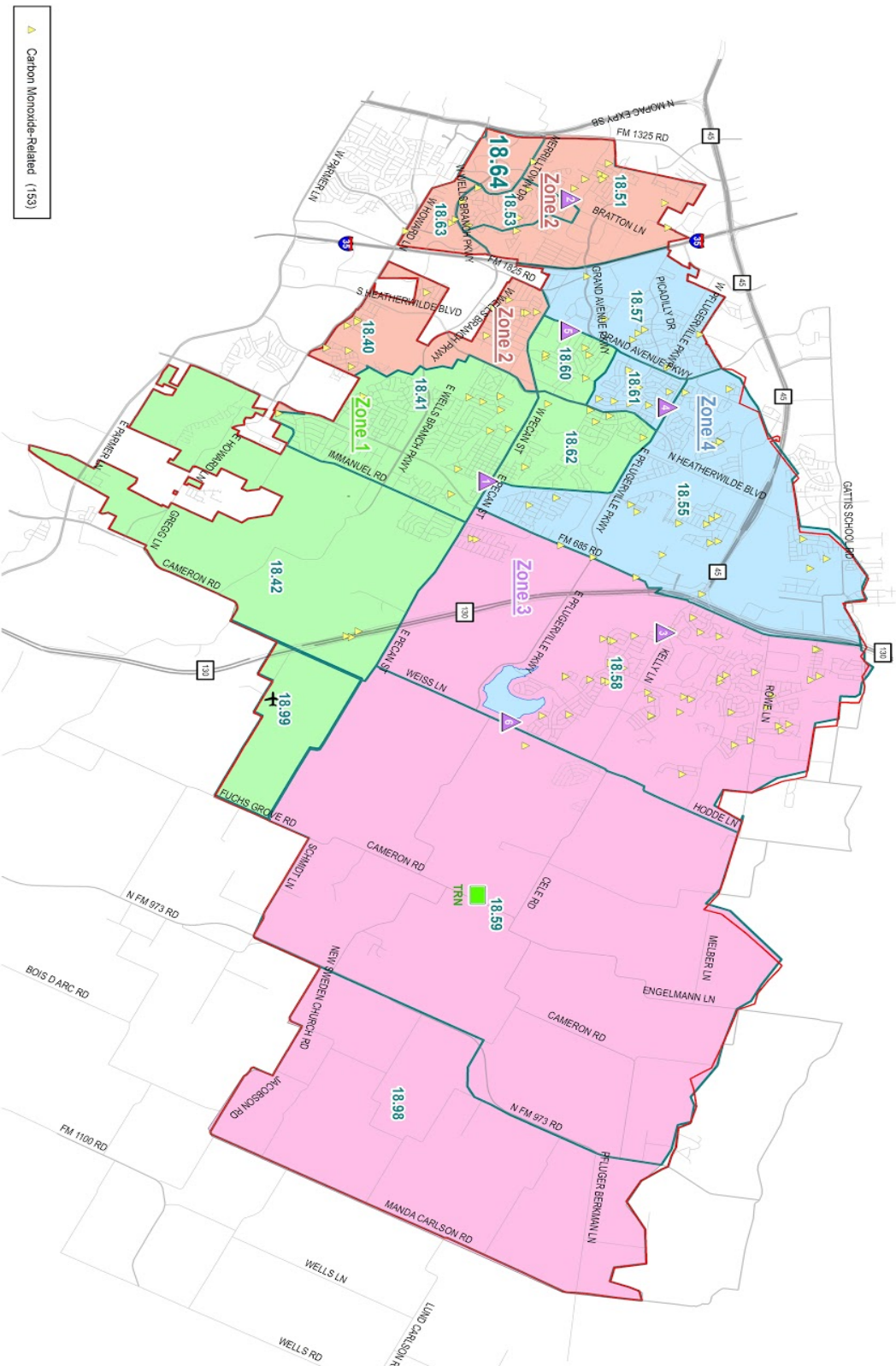
2801 W Wells Branch Pkwy: **8** fires; 19600 N Heatherwilde Blvd: **7**; 1720 W Wells Branch Pkwy: **6**; 1915 W Wells Branch Pkwy: **6**; 16701 N Heatherwilde Blvd: **5**

TCESD2 BRUSH FIRE CALLS JANUARY 2013 TO MAY 2018



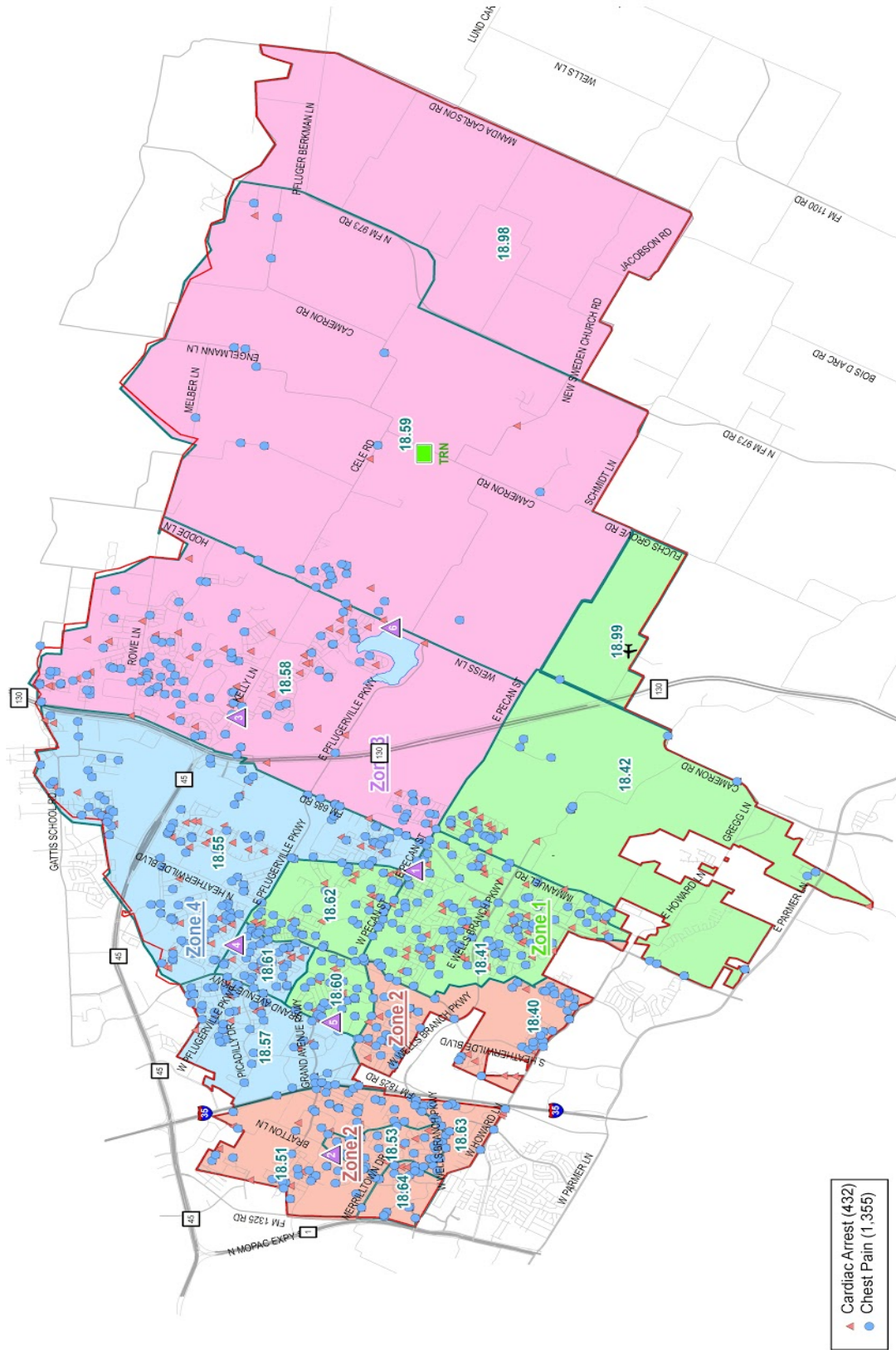
TCESD2 brush fires (also known as “grass fires” or “wildfires”) decreased 54% over the 5 1/2-year time span studied, from 13 brush fires in 2013 to 6 in 2017. These fire calls were fairly evenly distributed across the community.

TCESD2 CARBON MONOXIDE CALLS JANUARY 2013 TO MAY 2018



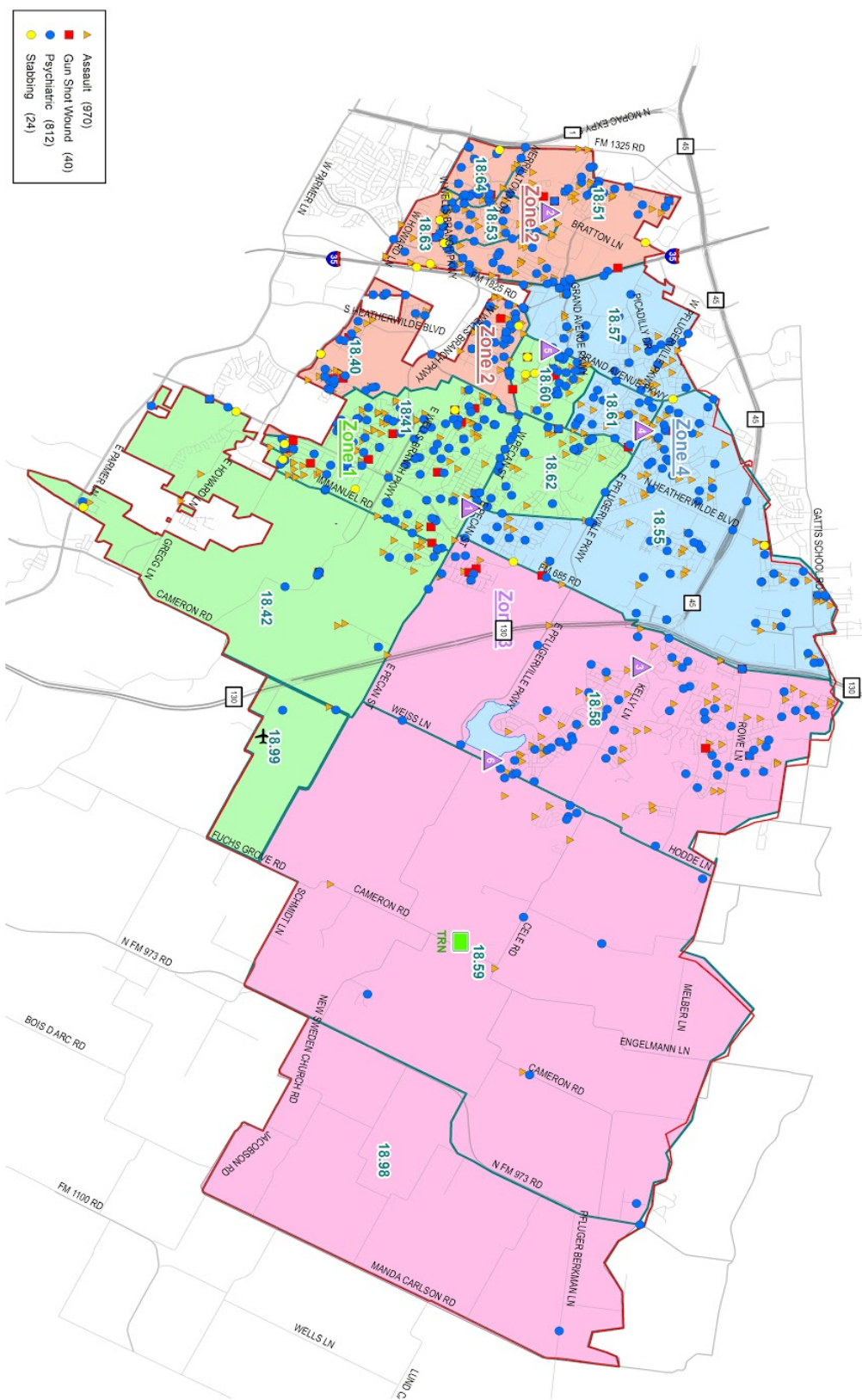
Each year, more than 400 Americans die from **unintentional** carbon monoxide (CO) poisoning not linked to fires, according to the U.S. Centers for Disease Control and Prevention (CDC). Another 20,000 visit the emergency room per the CDC, and more than 4,000 are hospitalized. TCESD2 responded to 153 CO-related calls during the 5+ years studied, which appear to be generally distributed throughout most of the populated areas. This was a 400% increase from 2013 to 2018.

TCESD2 CARDIAC-RELATED CALLS JANUARY 2013 TO MAY 2018



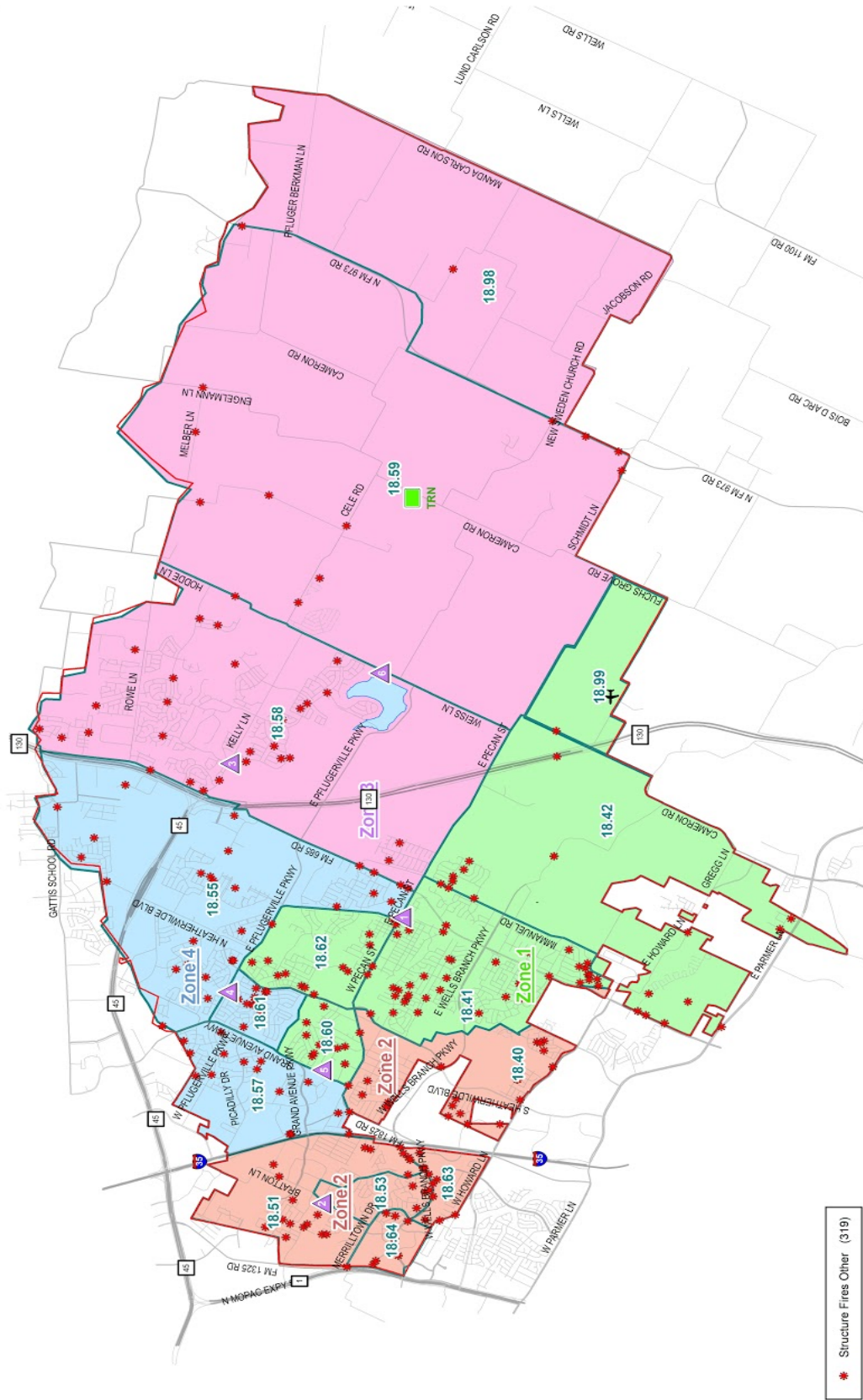
The frequency of cardiac-related calls in TCESD2 increased 15% over the time-span studied. While there were clusters of cardiac-related calls at senior facilities as expected, these calls were also widespread throughout the community.

TCSO2 NON-TRAFFIC CALLS WITH POLICE JANUARY 2013 TO MAY 2018



Non-traffic calls with police are incidents to which both the District and law enforcement were dispatched, including gunshot wounds, stabbings, psychiatric situations, and assaults. The frequency of non-traffic police incidents to which the District responded increased 17% over the 5+ years studied. The majority of these calls occur west of State Highway 130 and were generally concentrated in apartment complexes, manufactured home communities, and nightclubs.

TCESD2 STRUCTURE FIRES: OTHER (NON APARTMENT) JANUARY 2013 TO MAY 2018



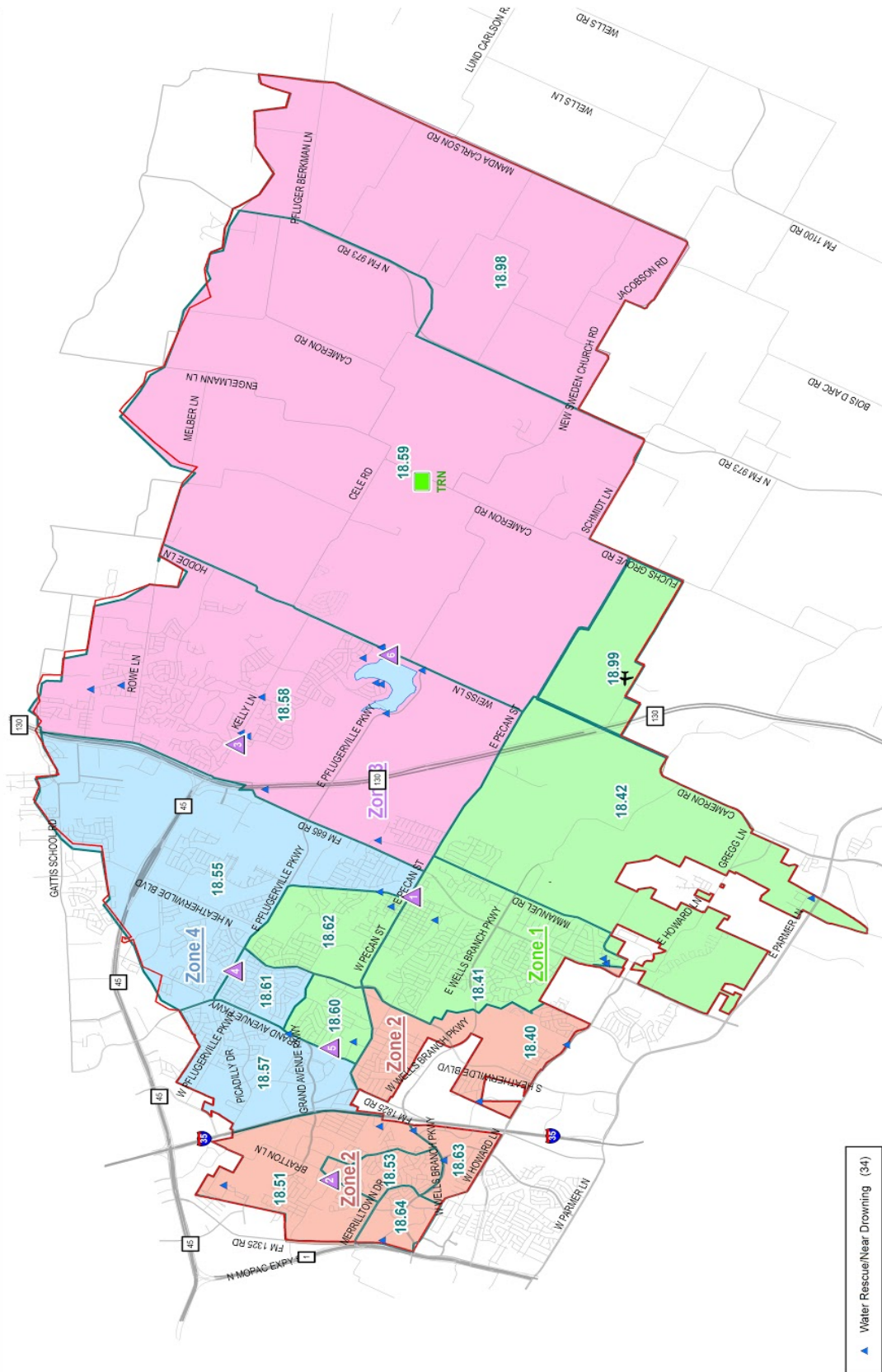
“Other structure fires” represent fires in single family homes, commercial properties, and other occupancies EXCLUDING apartments. (Apartment fires were summarized elsewhere in this **Response Profile**, and apartment risks were outlined within the **Building Stock Profile**.) The number of these structure fires increased 13% over the time-span studied.

Map of traffic accidents in the 75060 ZIP code, showing four zones (Zone 1, Zone 2, Zone 3, Zone 4) and numerous accident locations marked with orange dots. The map includes street names like FM 1325 RD, FM 973 RD, and FM 1100 RD, and accident counts for each zone.

Zone	Accident Count
Zone 1	18.42
Zone 2	18.40
Zone 3	18.59
Zone 4	18.55

Travis County ESD 2: Community Risk Assessment 2018

TCESD2 WATER RESCUE CALLS JANUARY 2013 TO MAY 2018



"Water rescue calls" include calls for water rescues or near drownings. TCESD2 responded to 34 such calls over the time-span studied. These calls were most concentrated at Lake Plügerville (8 calls), and the remaining there 26 calls were spread throughout other public and private water sources across the TCESD2 community.

TCESD2 Fire Alarm Activations

One out of every three fire-related calls in the District from 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. The risk with fire alarm activations in the District is the vast majority of these activations do not represent actual fires and instead are caused by mechanical failures, maintenance issues, or human interference. Additionally, these “false” alarms represent wasted staff time and taxpayer expense, and they can desensitize civilians in responding to real incidents.

TCESD2 Structure Fires Caused by Cooking

According to NFPA, cooking equipment is the leading cause of home structure fires and home fire injuries. Cooking causes 47% of home fires nationally, resulting in 20% of home fire deaths and 45% of injuries. The following table summarizes the frequency of cooking as a fire cause type in TCESD2:

Year	Number of cooking fires	Rank among causes	% of all fires
2013	24	1	47%
2014	27	1	38%
2015	22	2	26%
2016	34	1	40%
2017	10	2	24%
TOTAL	117	1	35% on average

Source: TCESD, National Fire Incident Reporting System Data (NFIRS)

Note: Numerous other structure fires occurred locally each year for causes that investigators left “undetermined,” but which may have been cooking related.

The District focused its analysis on the most common fire types, as there have not been any fire-related fatalities in the District in many years. (Demographic information on occupants of local structure fires was not available.) For TCESD2, nearly 2 out of every 5 structure fires are caused by cooking. No other fire cause--such as smoking, electrical, candle-related, or heating--is nearly as likely to occur as home cooking fires in TCESD2.

Taking a closer look at the trend of cooking fires within TCESD2 community, the District determined that these fires occur primarily in private homes, with 62% of cooking fires occurring in single family

homes and 25% in multi-family homes (apartments). The remaining 13% of cooking fires occur in other types of structures such as businesses.

Year	Number of cooking fires in 1 or 2-family homes	% of all cooking fires	% of all structure fires
2013	15	63%	29%
2014	14	52%	20%
2015	16	73%	19%
2016	20	59%	23%
2017	6	60%	2%
Total	71	61% on average	19% on average

TCESD2 Falls

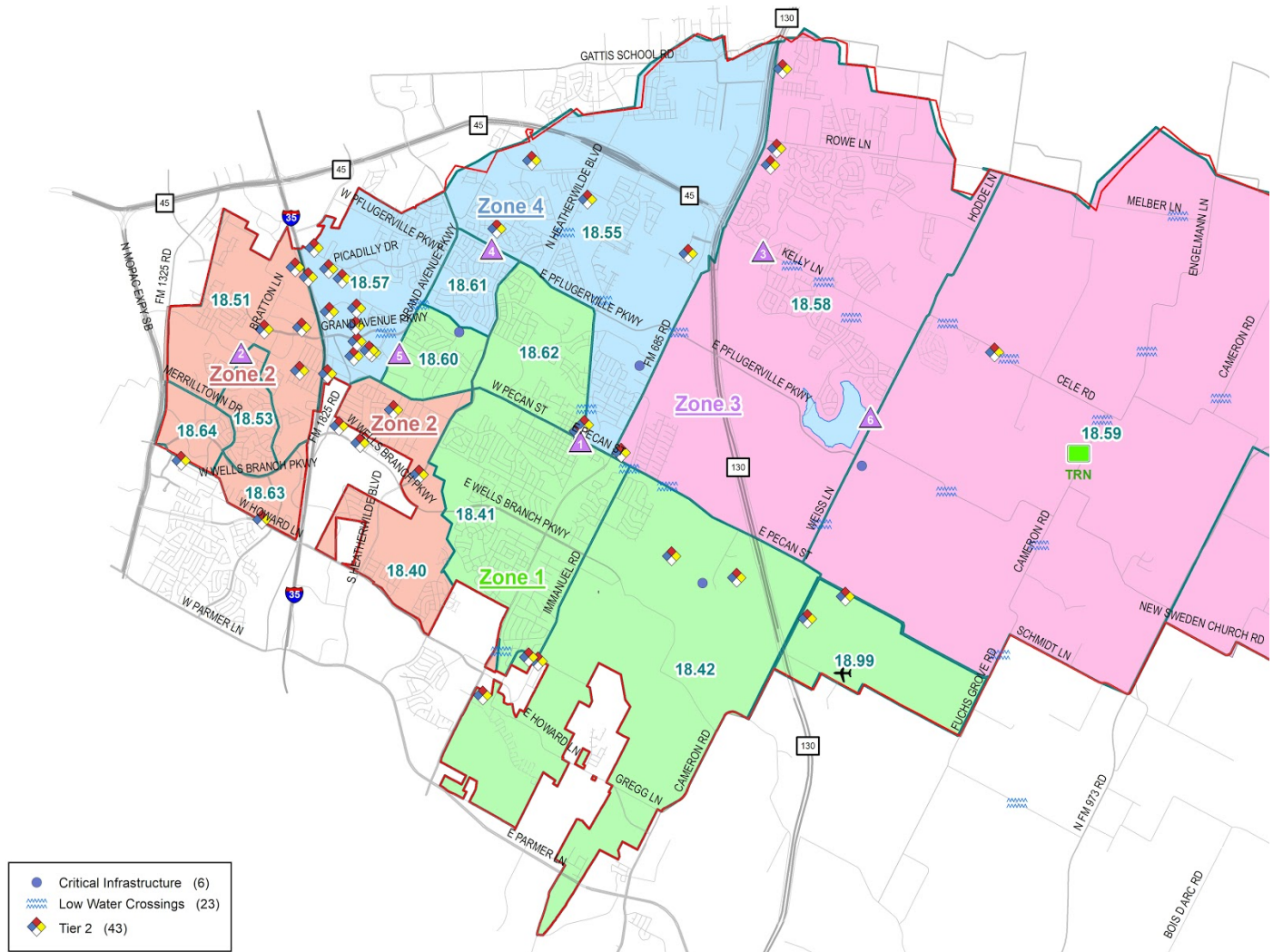
The District responded to 3,111 falls during the 5 ½-year period studied, representing 9.1% of all calls. The fall risk is particularly high for senior citizens, which in the TCESD2 community represent nearly 20% of all calls. (As of 2016, the District served an estimated 13,500 “younger seniors” age 55 to 64, and more than 8,500 “older seniors” age 65 or older.) Among accidental fatalities, falling is the leading cause of death for senior citizens in the United States, according to the U.S. Centers for Disease Control and Prevention (CDC). Falls cause four times the number of preventable injury deaths than any other cause for the senior population, per the CDC. Even when seniors survive a fall, their mobility and quality of life often decreases, and their risk of a second fall increases.

HAZARD PROFILE

NFPA 1730 indicates that the Hazard Profile within a CRA should include risks related to hazardous material spills, military installations and other facilities that present opportunities for attacks/terrorism, technological service hazards, and natural hazards such as floods, tornadoes and droughts.

The following pages summarize some of these hazards present within District boundaries, primarily Tier II (hazardous materials) facilities, critical infrastructure, and low water crossings.

Note on Target Hazards: The fire service traditionally treats several other types of properties as a “target hazard,” which is generally understood as any facility that provides significant value to the community (economic, historic, cultural or other) **and** presents an elevated risk to its occupants and/or emergency responders commonly due to its size, number of occupants, nature of occupants, some other unique feature, or any combination thereof. Several traditional “target hazards” are outlined in the Building Stock Profile of this report.



Tier II Facilities

Tier II's are facilities required by federal law to make information available for local emergency responders regarding the type, amount and location of hazardous materials ("hazmat") they store or use. For this Hazard Profile, the District undertook identifying all of the local Tier II facilities that represent the risk of a hazmat spill--which is a risk both to the public and to District personnel.

Facilities that meet Tier II definitions in the State of Texas are required to submit information annually to the Texas Commission on Environmental Quality (TCEQ), per the state's Tier II Chemical Reporting Program. The table below **alphabetically lists** the Tier II facilities in the District and information retrieved from the TCEQ database in 2018. Noted is the distance around each facility that would need to be isolated (either through an evacuation or shelter-in-place, depending on the situation) and specifically any schools that are located within that "isolation zone."

Business Name	Address	Chemicals	Max Quantity	ERG Worst Case Isolation Distance	Schools Within Isolation Distance
685 Plant	20703 Mashburn	Sodium Hypochlorite	10,000 Gallons	300'	-
Alamo Concrete Products CO.	2807 Howard Ln	-Acetylene -Oxygen -Petroleum Distillate	-50 lbs. -60 lbs. -62,475 gallons	-900' for acetylene -300' for Oxygen -	-
Austin	2120 Grand Ave	Sulfuric Acid	2,615 Gallons	330' Sulfuric Acid	-
Austin Pflugerville 251 co	103 S 1st St	Numerous Chemicals	Numerous Chemicals		-
Buckeye Cleaning Center	1500 Central Commerce Cir	Numerous Chemicals	Numerous Chemicals		-
Capital Plumbing	20003 Mashburn	Diesel Fuel	14,000 Gallons	300' Diesel Pool Fire	-
Cash Construction Company	18607 N. Heatherwilde Blvd.	-Acetylene -Oxygen -Diesel Fuel	-43,587 lbs -39,169 lbs -97,604 gallons	-300'	-
Cele Plant	6805 1-2 Cele Rd	Sodium Hypochlorite	10,000 Gallons	300'	-
Durham School Services	2101 Crystal Bend	Diesel Fuel	77,379 Gallons	300' Diesel pool fire	-
Continued on next page					

Continued from previous page

Business Name	Address	Chemicals	Max Quantity	ERG Worst Case Isolation Distance	Schools Within Isolation Distance
Durham School Services	2101 Crystal Bend	Diesel Fuel	75,000 Gallons	300' Diesel pool fire	-
FedEx Ground	15904 Impact Way	-Sulfuric Acid -Lead	-1675 Gallons -12075 Lbs.	-120' -	-
Flextronics America	900 New Meister Lane	-Lead Acid Batteries -Sulfuric Acid	-4,999 -9,999 Lbs.	150'	-
Gilleland Creek Substation	16275 Cameron Rd	-Sulfuric Acid -Electrical Insulating Oil	-1094 Gallons -247,041 Gallons	-150' for Sulfuric Acid -2900' for Oil Pool Fire	-
H&H Oil	20909 FM 685	-Diesel Fuel -Ethylene Glycol	- 14,400 Gallons - 63,504 Gallons	-300' Diesel Pool fire -	-
Hays City Corporation	1701-B Grand Ave Pkwy	Numerous Chemicals	Numerous Chemicals		-
HEB Grocery	1434 Wells Branch Pkwy	-Chlorine -Sulfuric Acid	-4,999 Gallons -	-1,500 for Chlorine -	-
HEB Grocery	201 N FM 685	Sulfuric Acid	4,999 Lbs.	120'	-
HEB Plant	1114 Wells Branch Pkwy	-Chlorine -Ammonium Sulfate -Sodium Hypochlorite	-600 -2,000 gal. -10,000 Gallons	-1,500' for Chlorine	Harmony Science Academy
Heraeus Quartz	15600 Bratton Ln	Numerous Chemicals	Numerous Chemicals		-
Holt Texas	16017 IH 35	Dyed Ultra Low Sulfur Diesel	49,999 Gallons	300' Diesel Pool fire	-
Joe Bland Construction	13111 Dessau Rd	-Diesel fuel- -Dyed Diesel	-27,921 Gallons -83,764 Gallons	310' Diesel pool fire	-
Johnson Oil Co.	1512 Central Commerce Cir	Lube Oil	74,999 Gallons	300' Diesel pool fire	-
Lauren Concrete Inc	2001 Picadilly Ln	-Gasoline -Diesel	-1,000 Gallons -25,000 Gallons	-300' Gasoline pool fire -300' Diesel pool fire	-
Owens & Minor Distribution	2120 Grand Ave	-Sulfuric acid -Lead	- 2,220 Gallons - 22,030 lbs.	- 330' Sulfuric Acid -	-
Pflugerville Propane	15525 N IH 35	Liquefied Petroleum Gas	9,999 gallons	-4,431' for BLEVE	(BLEVE) Harmony Science Academy, Pflugerville Montessori School
Continued on next page					

Continued from previous page

Business Name	Address	Chemicals	Max Quantity	ERG Worst Case Isolation Distance	Schools Within Isolation Distance
Schultz Well	18415 1-2 Heatherwilde Blvd	-Chlorine -Ammonium Sulfate	-600 Gallons -2,000 Gallons	1,500' for Chlorine	-
Scotts Lawn Service 926	16300 Central Commerce Dr. Bldg 5	No Information	No Information		-
Silicone Specialties	13815 Immanuel Rd	- Xylene -BASF Masterseal NP	-216 Gallons -4290 Gallons	-300' -	-
Springbrook Plant	17821 Madden Dr	-Chlorine -Ammonium Sulfate	-600 Gallons -2,000 Gallons	1,500' for Chlorine	-
Structural Metals	1704 Howard Ln	Lead Acid Batteries	1800 Lbs.	150'	-
Suburban Propane	hi 1602 Three Points Rd	Propane	108,375 Gallons	1.4 Miles for BLEVE	(BLEVE) Springhill Elementary, Pflugerville Montessori, Joe Lee Johnson Elementary, Concordia High School, Caldwell Elementary
Sunbelt Rental	16256 IH 35	Batteries filled w/ Acid	13,077	150'	-
Sunstate Equipment	16436 N IH 35	Diesel Fuel	12,960 Gallons	300' Diesel pool fires	-
Tacon Plant	15500 Tacon Ln	-Chlorine -Ammonium Sulfate	-600 -2,000 gal.	-1,500' for Chlorine -	-
Target	18700 Limestone Commercial Dr.	Sulfuric Acid	1,018 Pounds	240'	-
Three Points	15403 Scarlet St	Sulfuric Acid	741 Gallons	150' for Sulfuric Acid	-
TXI Round Rock	2412 Picadilly Ln	Numerous Chemicals	Numerous Chemicals		-
Waste Connections	15711 Cameron Rd	Diesel Fuel	80,000 Gallons	300' Diesel Pool Fire	-
Well 4	2251 1-2 Picadilly	Chlorine	600	1,500' for Chlorine	-
Well 4B	16211 1-2 Central Commerce	Chlorine	600	1,500' for Chlorine	-
Wilke Well	18100 1-2 Heatherwilde Blvd	-Chlorine -Ammonium Sulfate	-600 Gallons -2,000 Gallons	1,500' for Chlorine	

Critical Infrastructure

Critical infrastructure is generally defined as properties with primary importance to the economic health and safety of the community, including public water and wastewater treatment facilities and headquarters for emergency and municipal services such as Pflugerville City Hall, the Pflugerville Justice Center, and the TCESD2 Administration Building.

Low Water Crossings

The District is located in the Central Texas area, which along with other portions of Texas is nationally known as “flash flood alley” for its propensity to flood during the spring and fall rainy seasons. The risks of this natural hazard are compounded by “low water crossings,” which are sections of roadway that serve as bridges when water flow is low but under high flow conditions (such as heavy or persistent rainfall) the roadway floods and impairs vehicular traffic. Several such crossings in the District have contributed significantly in recent years to swift water accidents and rescues. In 2016, TCESD2 battalion chiefs identified the following low water crossings within the District, both for public education purposes and for planning alternate emergency-response routes:

- Cameron Road – 16300, 17600, 18700, and 20400 blocks
- Cele Road – 5900 and 7200 blocks
- Crystal Bend Road – 1700 block
- Engelmann Road – 19400 block
- Grand Avenue Parkway – 1400 block
- Gregg Lane – 10200 block
- N. Heatherwilde Boulevard – 18100 block
- Hidden Lakes Drive
- Immanuel Road – 1600 block
- Jesse Bohls Drive – 6900 block
- Kelly Lane – 2800 and 3400 blocks
- N. Mammoth Cave Boulevard – 18100 block
- Melber Lane – 21200 block
- E. Pecan Street – 2000 block
- N. Railroad Avenue – 600 block
- Weiss Lane – 16800 block

Travis County floodplain maps can be found online as follows:

www.traviscountytexas.gov/tnr/environmental-quality/stormwater/floodplain

Floodplain information for the City of Pflugerville is shown here:

www.pflugervilletexas.gov/city-government/development-services-center/development-engineering/flood-plain

CONCLUSIONS AND NEXT STEPS

In developing the District's first-ever Community Risk Assessment (CRA), areas of improvement were identified for data collection and organization. TCESD2 will take steps across all divisions to develop and implement improvements to enhance District data moving forward.

The District's next step is to develop a Community Risk Reduction Plan (CRRP). This 3-year plan with measurable goals will detail the strategies and tactics the District and partners will put in place to mitigate the community's risks.

Through this CRA process, the District has identified the following issues to currently represent the highest intersection of the most risk factors. Programs will be developed on these fire and life safety issues that effectively incorporate demographics. These issues will be the focus of the District's CRRP involving every division through the year 2022, when an updated CRA will be conducted with new U.S. Census data and more detailed call data. While the District will continue to provide valuable programs and services on other issues not specifically listed here, the following topics represent the highest priority for new or enhanced risk reduction efforts:

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

APPENDIX

Process

Step 1: Study NFPA 1730. The District's Community Risk Assessment (CRA) development process began with closely studying the section of NFPA 1730 which guides the organization of a CRA. The District strived to follow NFPA 1730 per currently available data, skills, and resources.

Step 2: Study other CRAs. The District's next step was to identify and study other CRAs across the country. Because community risk reduction is still a relatively novel concept in the fire service, sample CRAs were relatively scarce. Of those that did exist, even fewer were published online. A handful of examples were identified, which tended to be as unique and varied as the communities they represented.

Step 3: Identify and Gather Data. Several data sources were considered for potential collection and analysis. The District began preliminarily gathering these data, which involved:

- becoming familiar with the data analyses and maps already being reported by District staff,
- learning more about the capabilities and limitations of the District's past and present databases,
- researching the availability of other data sources (local / municipal, county, state, federal), and
- navigating the U.S. Census website to identify which "tracts" are located within TCESD2 boundaries, and begin exporting and organizing the relevant demographic data from the Census

Step 4: Develop a Building Stock and Hazard Profiles. The District considered the following guidance from Vision 20/20, which expands upon NFPA 1730:

"Occupancy types assigned a higher score are considered to be more critical than those with a lower score. A score should be assigned to each of the following categories: Number of occupants; building construction; community impact (including economic); number of stories; presence of automatic fire suppression/detection systems; overall size (square footage); number of fire hydrants nearby; level of hazard, and building usage (occupancy type)."

For the District's first ever CRA, the focus was on the highest risk targets, which included multiple risk hazards within a specific occupancy type.

Step 5: Develop a Fire Profile. NFPA 1730 states that a Fire Profile should be developed to detail and quantify the local fire history. The District was able to determine the most common fire-related calls types over the past few years, but opportunities were identified to improve upon local record keeping for future analyses. For example, it will be helpful in the future to have local data on the area and/or point of origin in local structure fires; the causal factors on the ignition of fires and heat sources; the response times of all units involved; the rate of dollar loss to value; any injuries or deaths; preventable behaviors by the occupants; and occupant demographic information.

Step 6: Develop a Response Profile. NFPA 1730 states that a CRA should profile its past responses to a wide variety of call types including medical, carbon monoxide, traffic accidents, rescues, and other calls specific to the community.

Step 7. Study Findings, and Develop Conclusions. Once the District had compiled and mapped the community demographics, building stock, hazards, and available call data, District personnel attempted to study them collectively with a focus on trends, clusters, anomalies, and compounded risks. Ultimately the District used this analysis to develop its CRA conclusions, which will become the basis of future planning.

Interactive Maps

In addition to this narrative report which includes PDF/printable maps, the District developed interactive, web-based maps utilizing Google Earth Pro. While the District has only begun to tap into the analytical ability of this powerful tool, the following summarizes some of its functionality:

- Ability to layer any number of individual maps and boundaries on top of each other, to see how a variety of call types and target hazards interplay
- Ability to click on any data point for additional detail about that call or hazard
- Ability to select a single year or specific combination of years of call data
- Ability to identify properties with multiple calls (i.e. apartment complexes with numerous box alarms over the years)
- Ability to continually add points to the map as new properties are built, occupancy uses change, and call data is enhanced

Data Sources

The following were the District's primary data sources:

- **Call Data -**
 - Visinet was the data source for most call data in this CRA from January 2013 to late May 2018, such as the type of incident, data, and location. Visinet is a mobile records management system for emergency response field personnel; it is utilized by first response agencies throughout Travis County to support the computer-aided dispatch (CAD) system.
 - ZOLL, which the District previously used as a data management system, was utilized in clarifying fire types from the latter half of 2014 to the first half of 2017.
 - ESO was the data source for certain medical calls.
- **Structure Fires Data** - Structure fires were accounted for per the "incident type" at dispatch within the District's database called Visinet.
- **Housing Age** - These data came from the Travis County Appraisal District (TCAD) upon request. TCAD provided the "year built" data from a real property accounts' database for 2018.
- **Tier II information** - The data on properties housing hazardous materials were gathered using the website <https://peacweb2.aristatek.com/Login.aspx#>. NOTE: In addition, the District observed there

are facilities (i.e. the Pflugerville wastewater treatment facility) that by “chemical type” and “amount” meet the Tier II definition but are not on this website.

- **Demographics** - General demographic data came from the U.S. Census 2016 American Community Survey 5-Year Estimates, except for the Population Density Map which was based on the 2010 U.S. Census. Additional demographic data on risk factors came from the USFA 2015 report on fire risks in the United States.
- **Economic Profile** - Certain information within the Community Economic and Demographic Profile, such as the list of top employers in the City of Pflugerville area, was provided upon request by the Pflugerville Community Development Corporation (PCDC). Data was also gleaned from the City of Pflugerville and from Pflugerville Independent School District (PfISD) regarding community events.
- **The National Fire Incident Reporting System (NFIRS)** was the primary source of fire type data, especially related to cooking fire totals. NOTE: This NFIRS data was provided to the District by a NFIRS representative and could not be broken down further.
- **The U.S. Centers for Disease Control and Prevention (CDC)** was a national data source for preventable injury deaths.

Assumptions and Limitations

1. **Incoming Properties** - Major properties currently under construction or anticipated to be under construction by early 2019 were included.
2. **County vs. City Data** - A complicating factor for gathering data is the mix of incorporated (City of Pflugerville) and unincorporated (Travis County) land. It is common for information to be available regarding the portion of the TCESD2 community within the City of Pflugerville but not available, or in a different format, in the portions of Travis County.
3. **Data Relative to Population Growth** - The District was able to gather certain call data by year (such as the number of apartment fires). However, the data was not able to be compared to any population increase by year to see whether the number of incidences was proportionately steady with population growth, declined, or increased. U.S. Census population data is not available for every year.
4. **Initial Dispatch** - Both fire and EMS calls were studied as initially dispatched.
5. **Selection of U.S. Census Tracts** - When determining which U.S. Census tracts to include, only those that were fully or largely within the ESD #2 boundaries were selected. NOTE: If a tract straddled the District’s boundary, the extent of residential development in the outlying portion was considered. Where there was very little outlying development, the District included that tract in its demographic analysis. However, if there was significant development outside of the District’s boundary, that tract was excluded to prevent the local data from becoming skewed.
6. **Determination of “Zones”** - The District attempted to break down each data type (demographics, target hazards, and call data) by U.S. Census tracts as well as the general response areas where they occurred. The District chose the term “Zones” to identify a grouping of Census tracts roughly equivalent to the District’s current fire station operational response areas/boxes, as follows:

- Zone 1 (i.e. Fire Station 1) = tracts 18.41, 18.42, 18.60, and 18.62
- Zone 2 (i.e. Fire Station 2) = tracts 18.40, 18.51, 18.53, 18.63, and 18.64
- Zone 3 (i.e. Fire Station 3) = tracts 18.58 and 18.59
- Zone 4 (i.e. Fire Station 4) = tracts 18.55, 18.57 and 18.61

7. Fire Incident Data - The District identified opportunities to improve its fire incident data collection in the future, to more strategically address the identified risks.