UNITED STATES BOMB DATA CENTER (USBDC) ARSON INCIDENT REPORT

2019

The Annual Arson Incident Report (AIR) reviews arson-related incidents from data reported to the United States Bomb Data Center (USBDC) through the Bomb Arson Tracking System (BATS).

TABLE OF CONTENTS

EXECUTIVE SUMMARY

OPERATING HIGHLIGHTS

The 2019 *Arson Incident Report (AIR)* is an informational product prepared by the United States Bomb Data Center (USBDC), using incident data reported in the Bomb Arson Tracking System (BATS) by its nearly 2,529 interagency partners and 12,515 registered users. This report examines the total number of fire-related incidents reported in BATS for calendar year 2019 and includes *Incendiary (Arson), Undetermined, Accidental,* and *Natural* fire-related incidents. New to the report this year are fire-related *Threats* and *Wildland* fire incidents. It is important to note that BATS is a real-time dynamic incident management system that is strictly user dependent; therefore, it is possible that the data represented in this report may differ slightly from previously reported data due to updates or changes made by the owner of individual records. The reader should also be aware that when compared to the data reflected in the Uniform Crime Report and/or National Fire Incident Reporting System, the number of incidents reflected in BATS captures approximately 20 percent of the annual incendiary (arson) fires reported. Due to this limited dataset, the USBDC cautions the use of this report for analytical purposes.

STRATEGIC HIGHLIGHTS

From January 1, 2019, through December 31, 2019, BATS captured a total of 23,712 *fire-related incidents*. Of these, there were 6,717 incidents reported as "Incendiary or Arson," which accounted for 28 percent of all the fires reported. The total amount of damages for all fire types was estimated at more than $952 million, with 999 injuries and 547 fatalities associated with the 23,712 reported fire-related incidents. "Available Combustibles" was identified as the most widely utilized incendiary fire subtype, while "Residential" was identified as the most targeted property type.

LOOKING AHEAD

In 2019, the United States Bomb Data Center's two sections, Bomb Arson Tracking System Section (BATSS) and Arson and Explosives Information and Analysis Section (AEIAS), worked to collect, analyze and disseminate information regarding arson and suspected criminal misuse of explosives to increase situational awareness to detect, deter and prevent criminal acts. AEIAS produced 223 arson and explosives intelligence products during calendar year (CY) 2019.

James M. Watson
Director, USBDC

FIRE TYPES – 2019

From January 1, 2019, through December 31, 2019, BATS captured a total of 23,712* fire-related incidents. Of those 23,712 fire-related incidents, 8,140 were listed in BATS as "Accidental," along with 6,717 listed as "Incendiary or Arson," 159 listed as "Natural," 55 listed as "Threat," 1,991 listed as "Under Investigation" and 77 listed as "Wildland." There were also 6,573 fires listed as "Undetermined," which included the final determination/classification of the fire investigation, along with fires pending further investigative activities and/or laboratory examination.
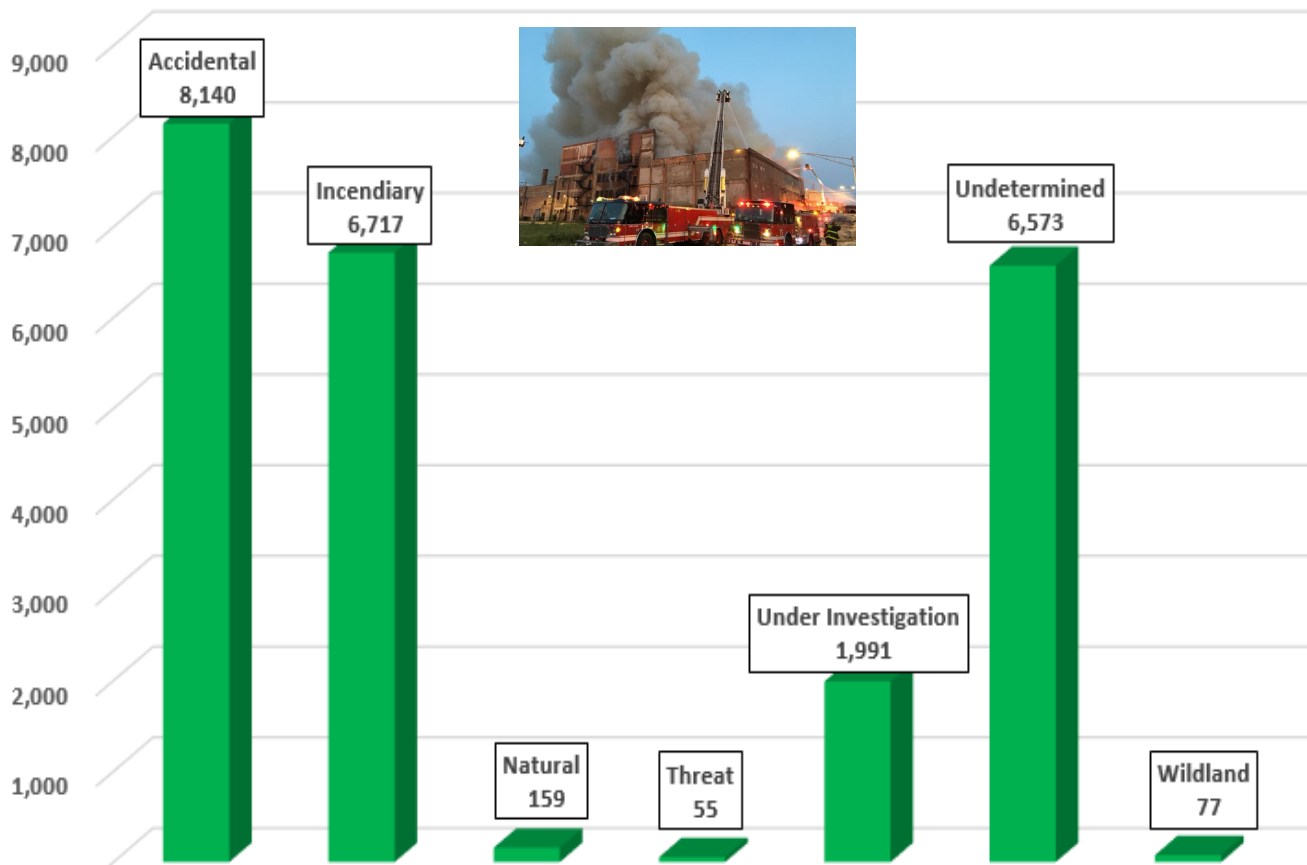

Figure 1. Fire Incident Types

* *The number of incidents listed above only accounts for the number of fire/arson incidents reported in BATS, and not the total number of fire/arson related incidents reported in the United States during calendar year (CY) 2019.*

FIRE INJURIES AND FATALITIES – 2019

Injuries

	Fire Service	Law Enforcement	Suspects	Victims	Total
Accidental	80	14	0	351	445
Incendiary	22	8	38	77	145
Natural	1	2	0	0	3
Under Investigation	39	2	1	48	90
Undetermined	84	10	1	221	316
Total	226	36	40	697	999

Figure 2. Fire Injuries

Victim injuries accounted for 70 percent of all injuries reported in 2019 and were the highest population reported for "Accidental" fires.

Of the 145 injuries associated with an "Incendiary" fire incident, "Victims" was reported as the highest population with 53 percent.

Fatalities

	Fire Service	Law Enforcement	Suspects	Victims	Total
Accidental	0	0	1	150	151
Incendiary	1	1	12	89	103
Natural	0	0	0	0	0
Under Investigation	0	0	0	51	51
Undetermined	3	0	1	238	242
Total	4	1	14	528	547

Figure 3. Fire Fatalities

Victim fatalities accounted for 96 percent of all injuries reported in 2019 and were the highest population reported for "Accidental" fires.

Of the 103 fatalities associated with an "Incendiary" fire incident, "Victims" was reported as the highest population with 86 percent.

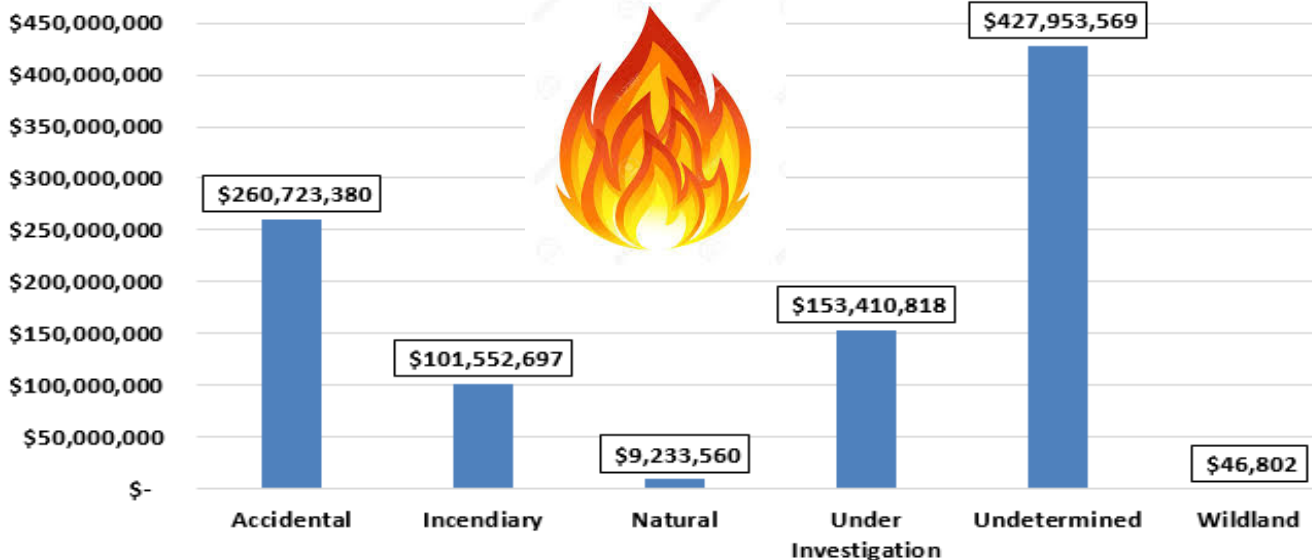# FIRE DAMAGES – 2019

Damage Amount ($) for Fire Types

Figure 4. Damage Amount for Fire Types

Damages associated with the 23,712 fire incidents reported in BATS totaled more than $952,920,826 for CY 2019. Fires listed as "Undetermined" led the fire type category with $427,953,569 in damages, while "Residential" properties was the leading category of property types associated with Incendiary (Arson) fires, with damages at $55,175,687.

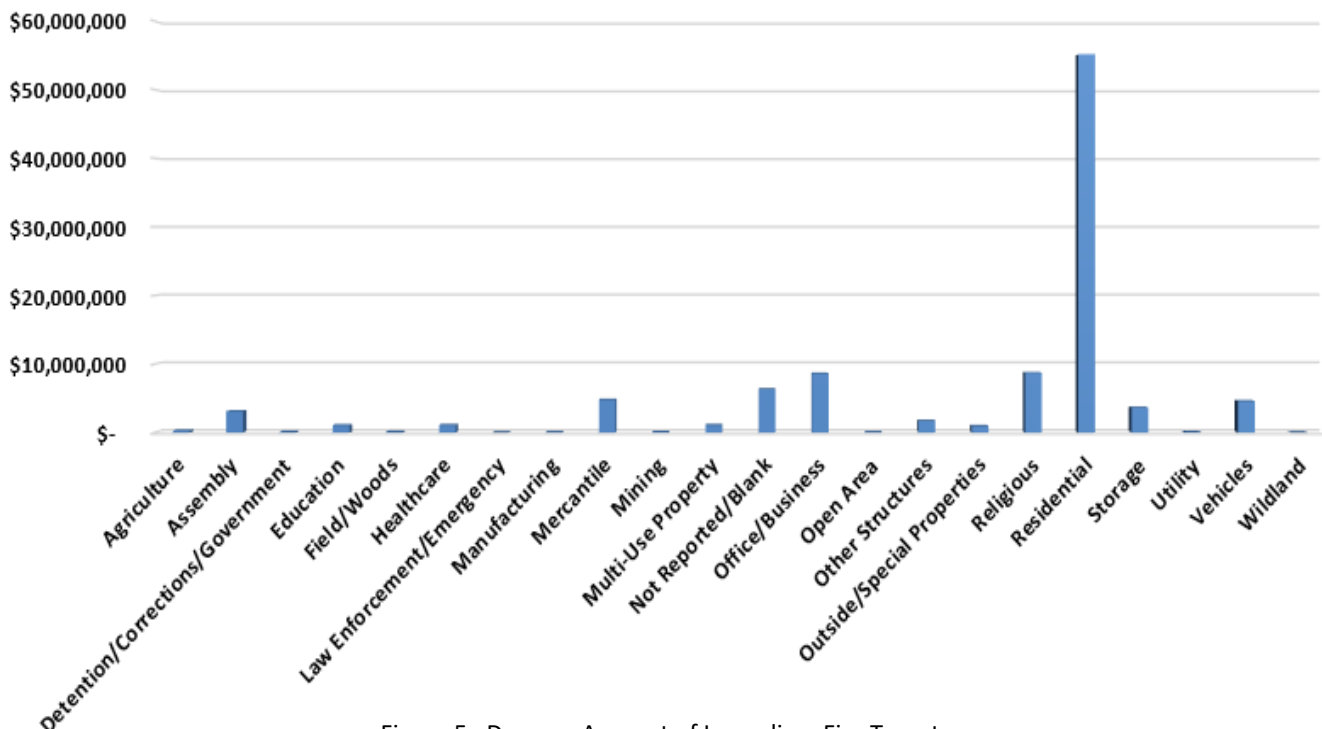## Damage Amount ($) of Incendiary Fire Targets

Figure 5. Damage Amount of Incendiary Fire Targets

INCENDIARY FIRE SUBTYPES – 2019

Of the 6,717* Incendiary (Arson) fire-related incidents reflected in BATS, there were 1,533 Incendiary fires listed as involving an "Accelerant," along with 3,094 fires involving "Available Combustibles" and 238 fires involving an "Incendiary Device." There were also 963 Incendiary fires listed as "Unknown" and 889 Incendiary fires with no information reported or left "Blank."
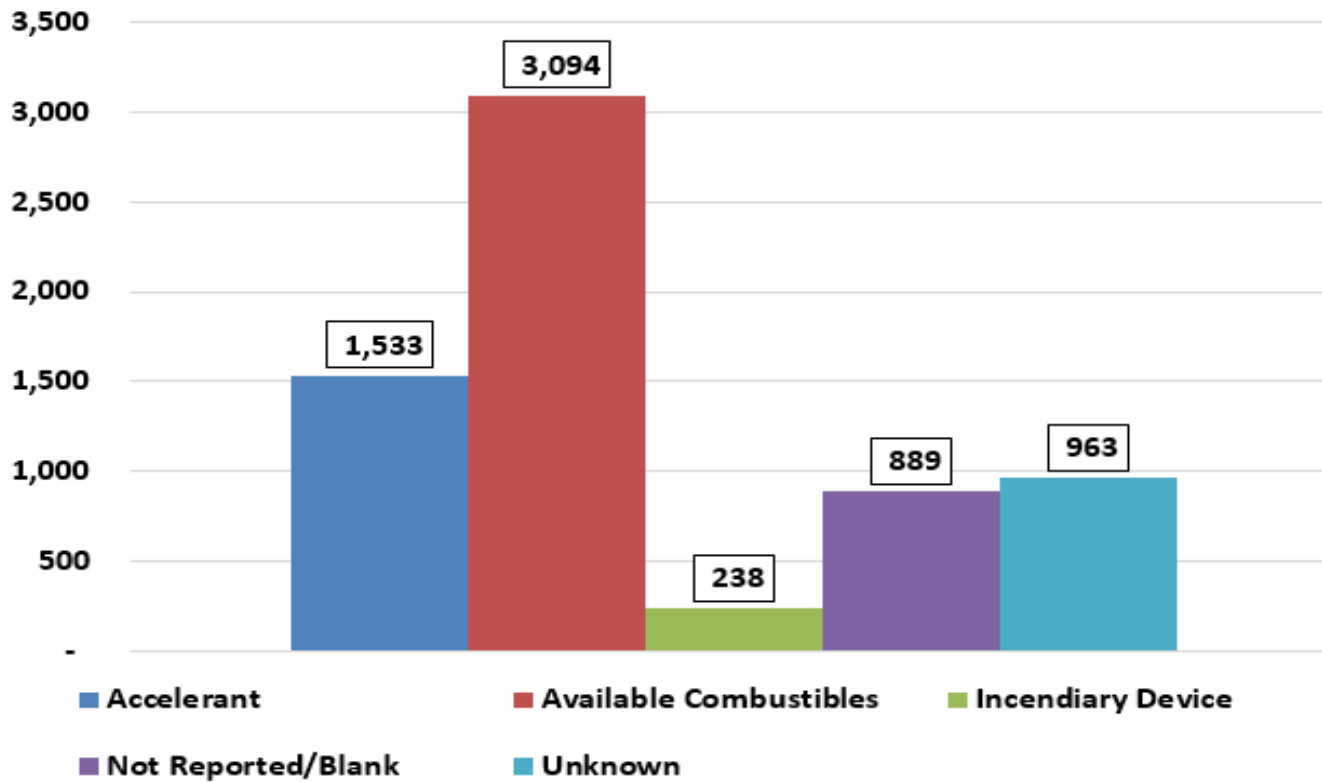
Incendiary Fire Subtypes

Figure 6. Incendiary Fire Subtypes

* The number of incidents listed above only accounts for the number of fire/arson incidents reported in BATS, and not the total number of fire/arson related incidents reported in the United States during calendar year 2019.

INCENDIARY FIRES (STATE) – 2019

A review of the 6,717* fires listed in BATS as "Incendiary or Arson" by location (State) revealed the highest number of incidents were reported in Illinois (1,010), followed by Florida (780) and then Texas (752). These three (3) States accounted for more than 38 percent of the total "Incendiary" fires reported in BATS during CY 2019.

INCENDIARY FIRES BY STATE

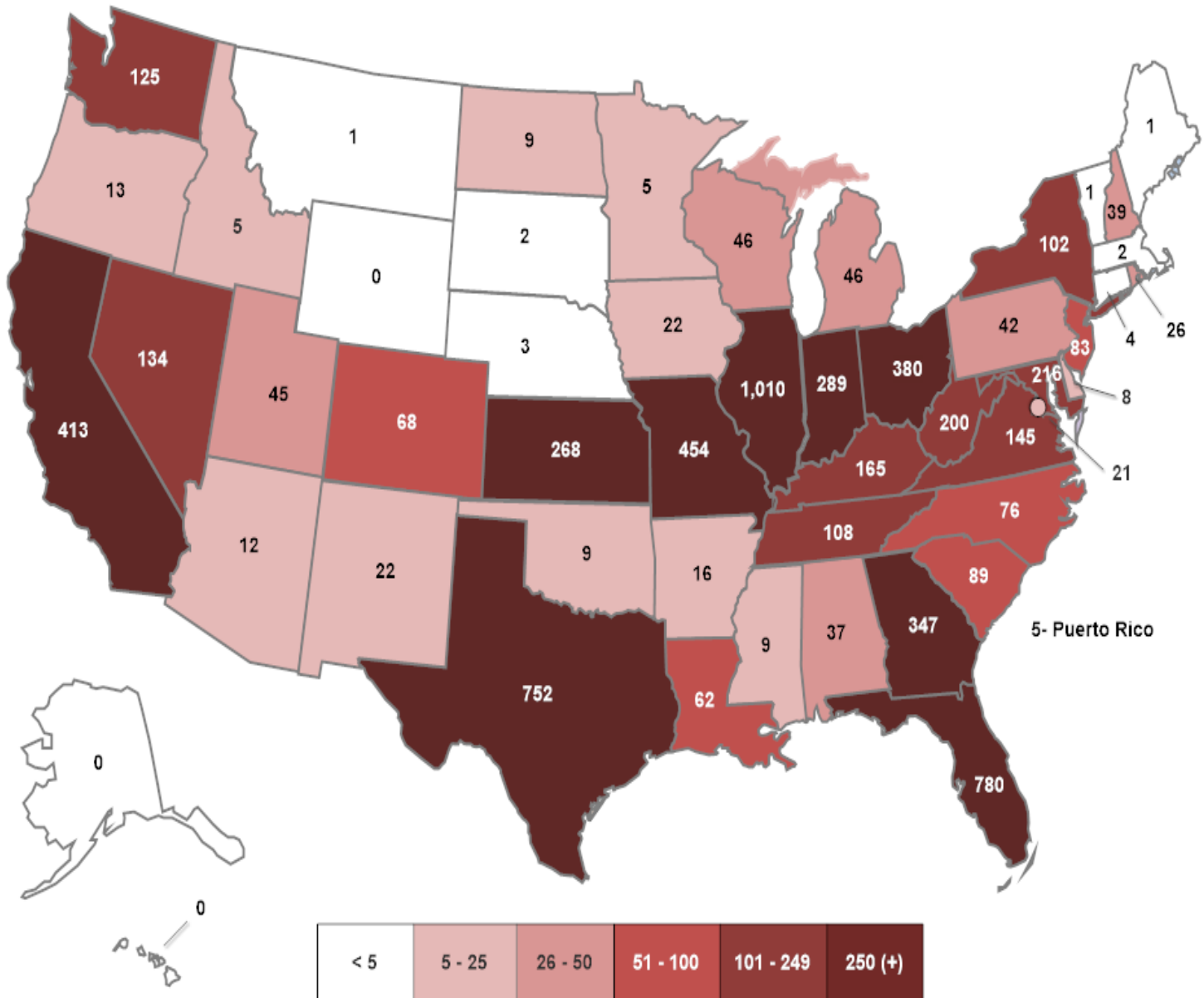| < 5 | 5 - 25 | 26 - 50 | 51 - 100 | 101 - 249 | 250 (+) |

Figure 7. Incendiary Fires by State

The number of incidents listed above only accounts for the number of fire/arson incidents reported in BATS, and not the total number of fire/arson related incidents reported in the United States during CY 2019.

INCENDIARY FIRES (FEMA REGIONS) – 2019

A breakdown of the 6,717* fires listed in BATS as "Incendiary" by Federal Emergency Management Agency (FEMA) Regions revealed the highest number of incidents occurred in the following three regions: Region V (1,776); Region IV (1,611); and Region VI (861). These three regions accounted for more than 63 percent of the total "Incendiary" fires reported in BATS during CY 2019.

INCENDIARY FIRES BY FEMA REGIONS

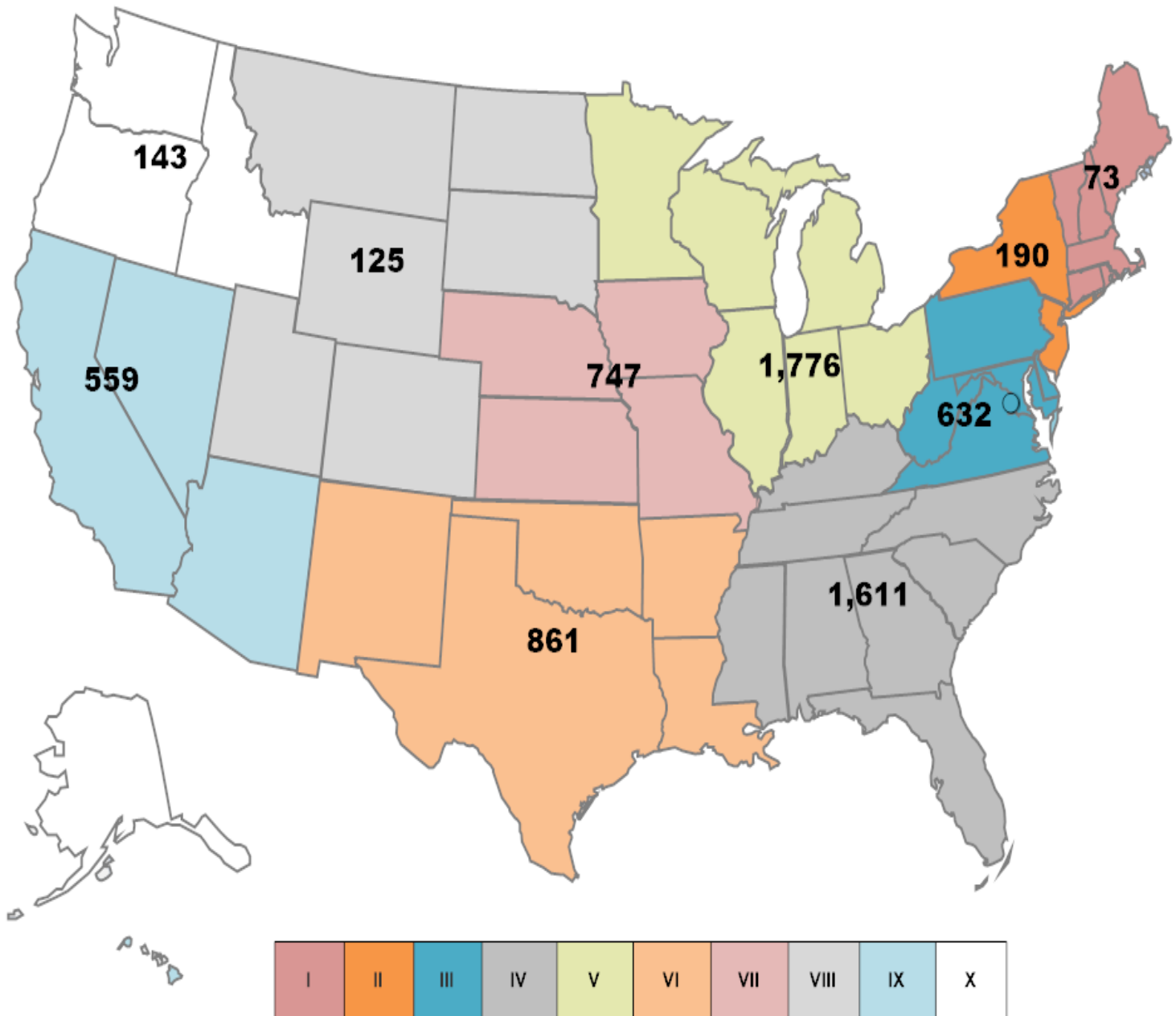| I | II | III | IV | V | VI | VII | VIII | IX | X |

Figure 8. Incendiary Fires by FEMA Regions

* The number of incidents listed above only accounts for the number of fire/arson incidents reported in BATS, and not the total number of fire/arson related incidents reported in the United States during CY 2019.

PROPERTY TYPES – 2019

There were 23 different "Property" types selected within BATS that involved "Incendiary" fires for 2019. Residential fires accounted for more than 44 percent of all "Incendiary" incidents reported for 2019, followed by vehicles (12 percent) and storage properties (4 percent).

Incendiary Fires by Property Types

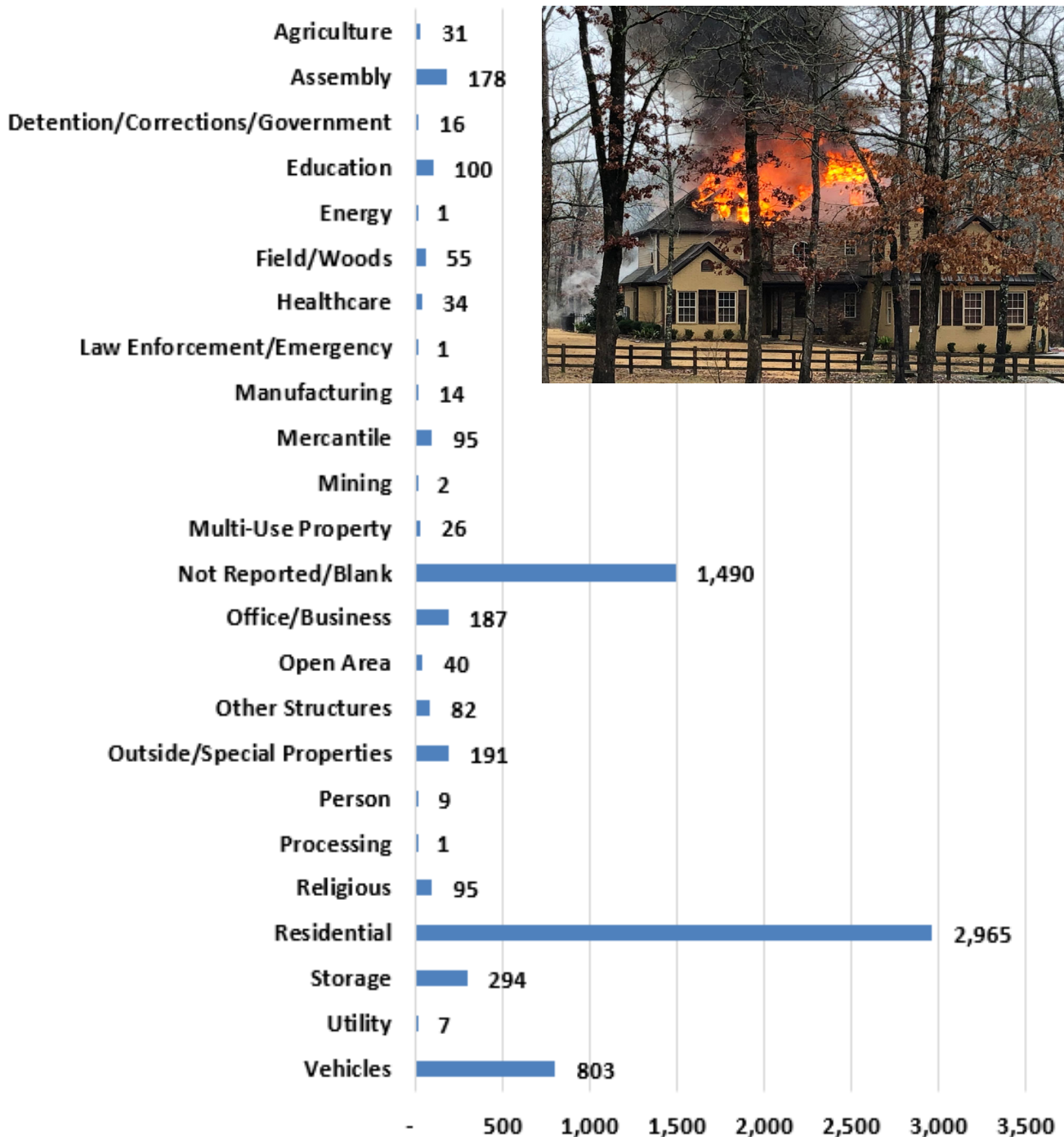| Property Type	Count
Agriculture	31
Assembly	178
Detention/Corrections/Government	16
Education	100
Energy	1
Field/Woods	55
Healthcare	34
Law Enforcement/Emergency	1
Manufacturing	14
Mercantile	95
Mining	2
Multi-Use Property	26
Not Reported/Blank	1,490
Office/Business	187
Open Area	40
Other Structures	82
Outside/Special Properties	191
Person	9
Processing	1
Religious	95
Residential	2,965
Storage	294
Utility	7
Vehicles	803

Figure 9. Incendiary Fires by Property Types

TIME/DAY/MONTH OF OCCURRENCE – 2019

A review of the time of day that "Incendiary" fires occurred showed a noticeable difference between the hours of daylight and darkness. Incidents of "Incendiary" fires occurring during the predominant hours of darkness (21:01 until 06:00) accounted for 50 percent of the incidents. On the other hand, the time period of 06:01 until 12:00 (early morning hours until noon) accounted for only 18 percent of incendiary fires reported in BATS during CY 2019.

Incendiary Fires by Time of Day

* There were 451 incidents identified as occurring at 00:00, which included those incidents with the time entered by the user along with the default setting of BATS, when users fail to enter a specific time.

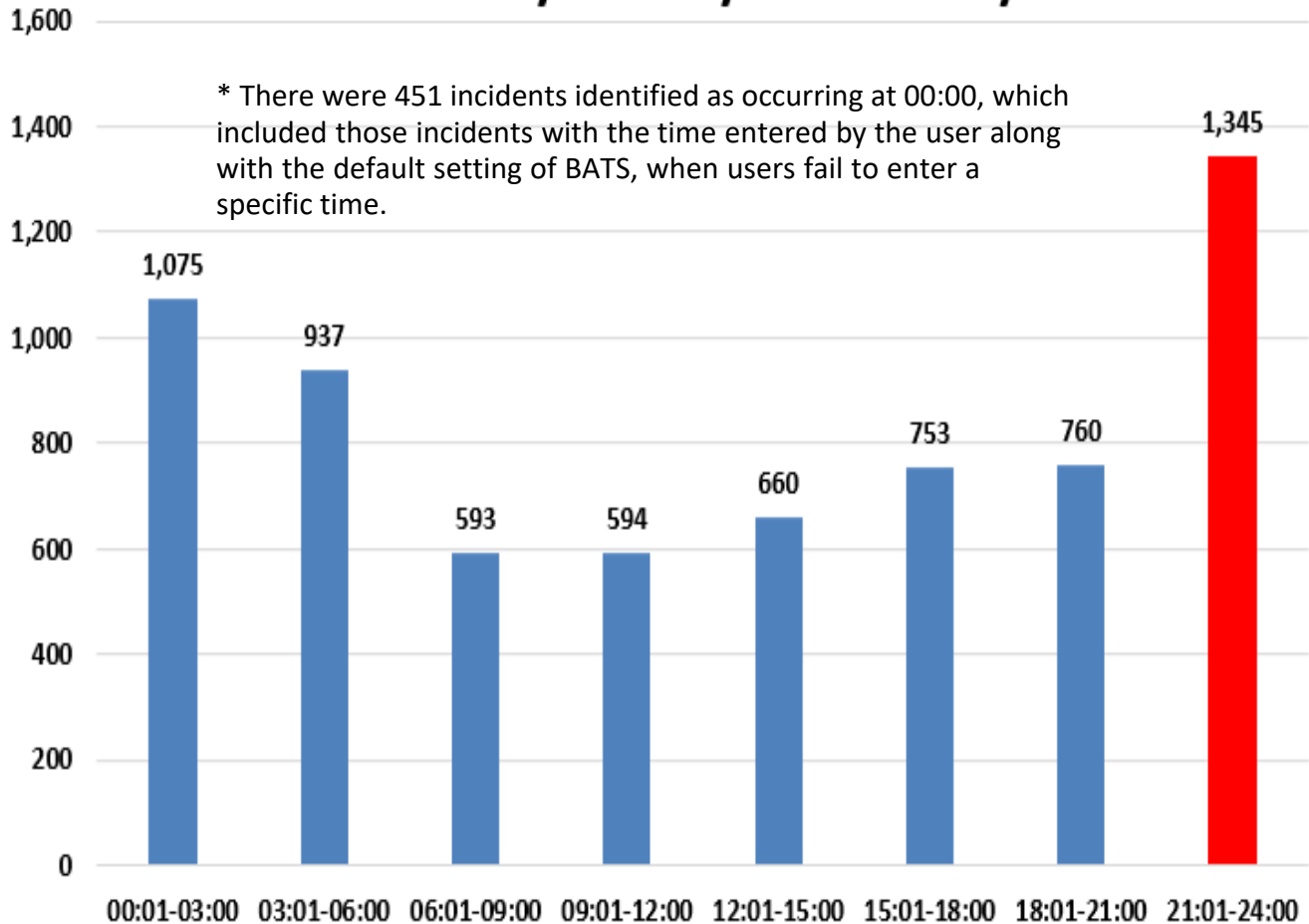| Time Period	Incidents
00:01-03:00	1,075
03:01-06:00	937
06:01-09:00	593
09:01-12:00	594
12:01-15:00	660
15:01-18:00	753
18:01-21:00	760
21:01-24:00	1,345

Figure 10. Incendiary Fires by Time of Day

A review of the day of the week that "Incendiary" fires occurred did not show any significant variation between the 7 days of the week. Incidents reported on Wednesday were identified as having the highest rate of occurrence, with 15 percent of all reported incidents. Friday was identified as having the lowest rate of occurrence of "Incendiary" fires, with 14 percent of all reported incidents.

A review of the months that "Incendiary" fires occurred did not show any significant variation among the 12 months of CY 2019. Incidents occurring in September were identified as the most frequent month of the year in which an "Incendiary" fire did occur, with 9 percent of reported incidents. February was identified as having the lowest frequency of "Incendiary" fires occurring, with 7 percent of reported incidents.

INCENDIARY FIRES (VEHICLES) – 2019

During CY 2019 there were 803 incidents of incendiary fires associated with vehicles. Of those vehicle fires, 62 percent were associated with an "Automobile/Car," 14 percent were associated with a "Truck (Pickup)" and 9 percent were associated with a "Sport Utility Vehicle (SUV)." There were also 61 fires or 7 percent associated with "Other" vehicles.
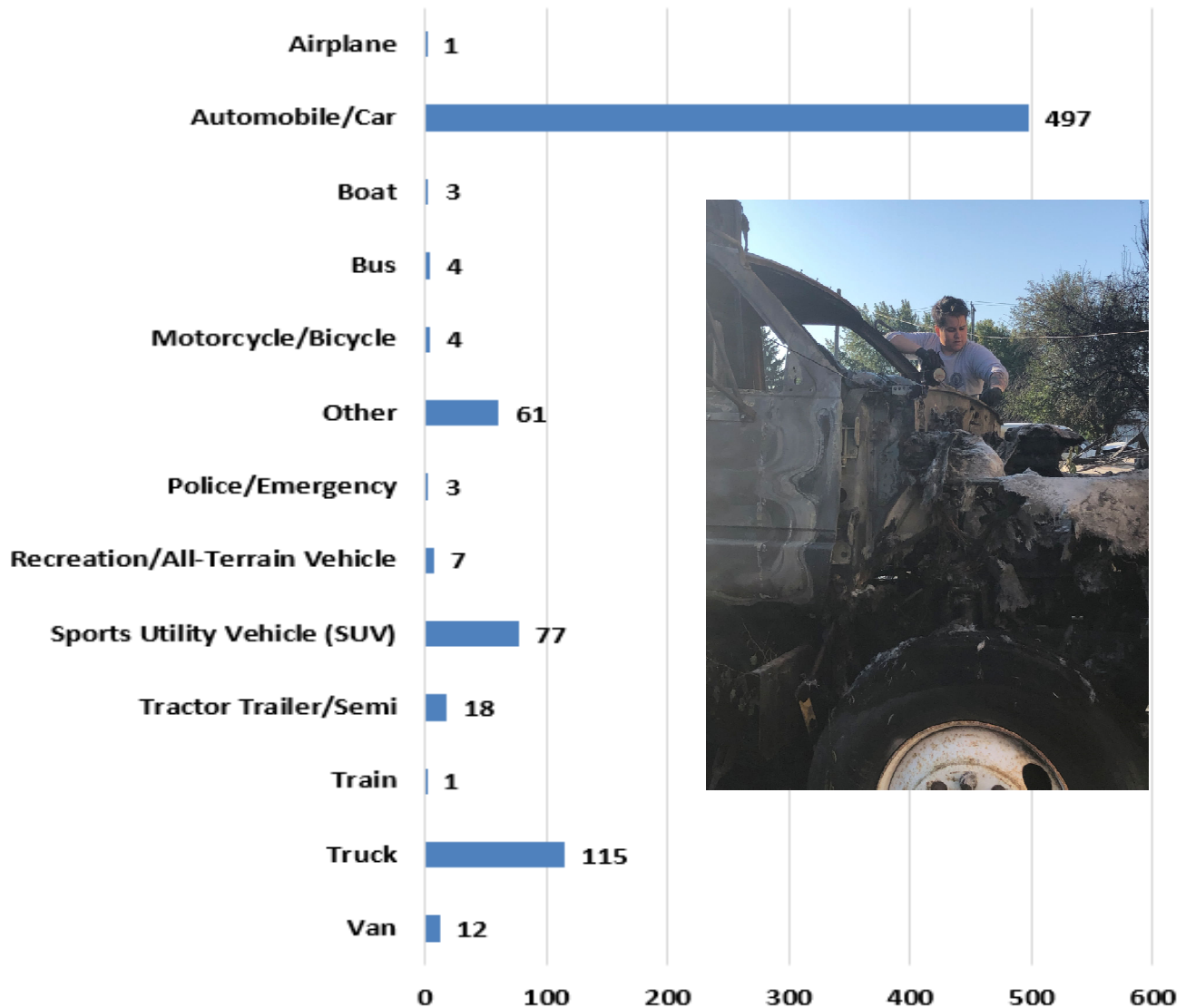

Incendiary Fires by Type of Vehicle

Type of Vehicle	Count
Airplane	1
Automobile/Car	497
Boat	3
Bus	4
Motorcycle/Bicycle	4
Other	61
Police/Emergency	3
Recreation/All-Terrain Vehicle	7
Sports Utility Vehicle (SUV)	77
Tractor Trailer/Semi	18
Train	1
Truck	115
Van	12

Figure 11. Incendiary Fires by Type of Vehicle

INCENDIARY FIRE DESCRIPTORS – 2019

The top 3 "Fire Descriptors" identified for the 6,717 Incendiary fires reported in 2019 were "Ignitable Liquid," "Open Flame" and "Ordinary Combustibles."

*** More than 69 percent of reported Incendiary fires did not identify any type of fire descriptors.**
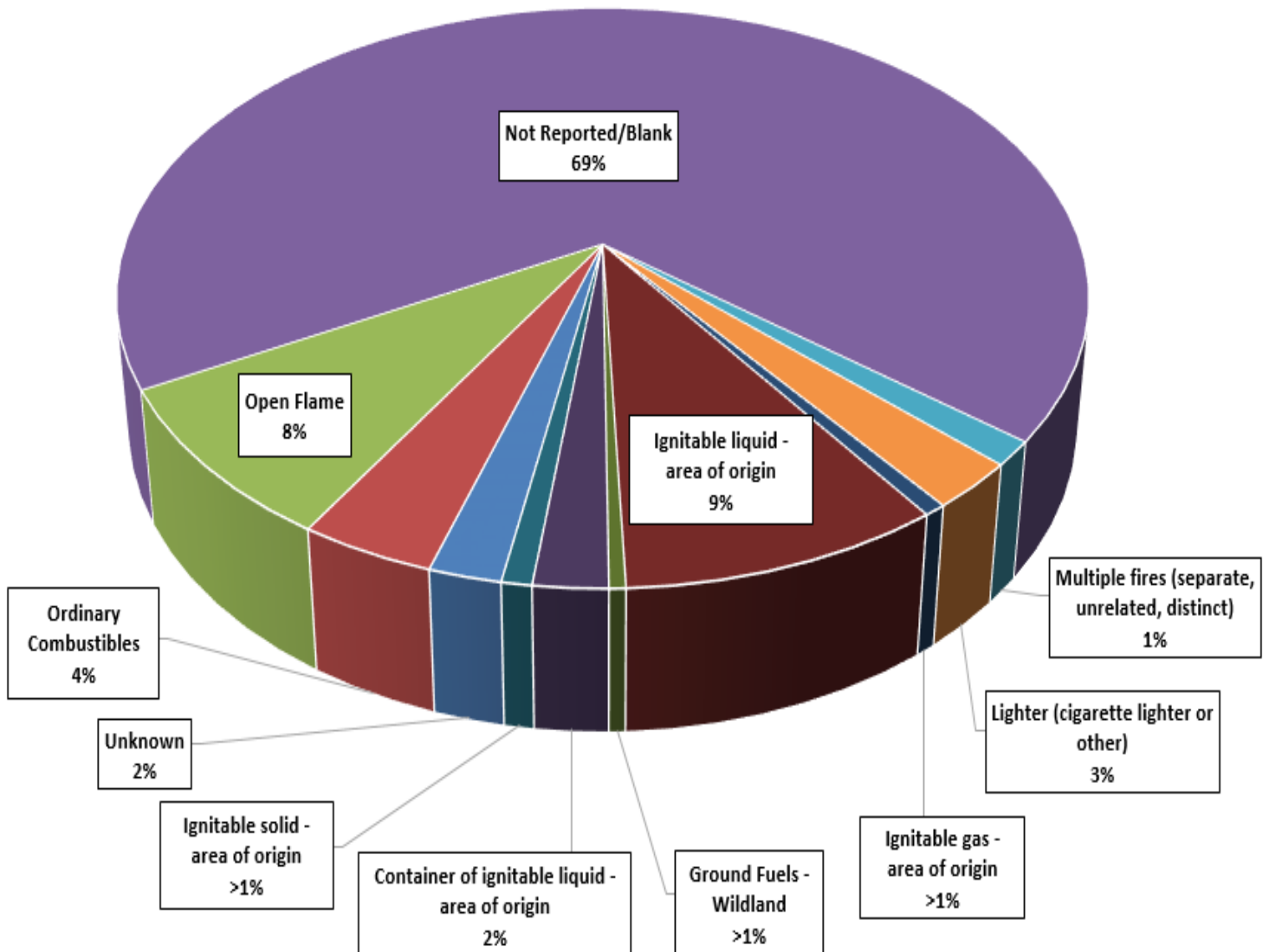
Top 10 Most Common Fire Descriptors

Not Reported/Blank
69%

Open Flame
8%

Ignitable liquid - area of origin
9%

Ordinary Combustibles
4%

Multiple fires (separate, unrelated, distinct)
1%

Unknown
2%

Lighter (cigarette lighter or other)
3%

Ignitable solid - area of origin
>1%

Container of ignitable liquid - area of origin
2%

Ground Fuels - Wildland
>1%

Ignitable gas - area of origin
>1%

Figure 12. Common Fire Descriptors of Incendiary Fires

MOTIVES FOR INCENDIARY FIRES – 2019

There were nine (9) types of motivation selected within BATS for an "Incendiary" fire. The top 3 types of known motivation selected for the 6,717 Incendiary fires reported in 2019 were "Revenge," "Crime Concealment," and "Excitement."
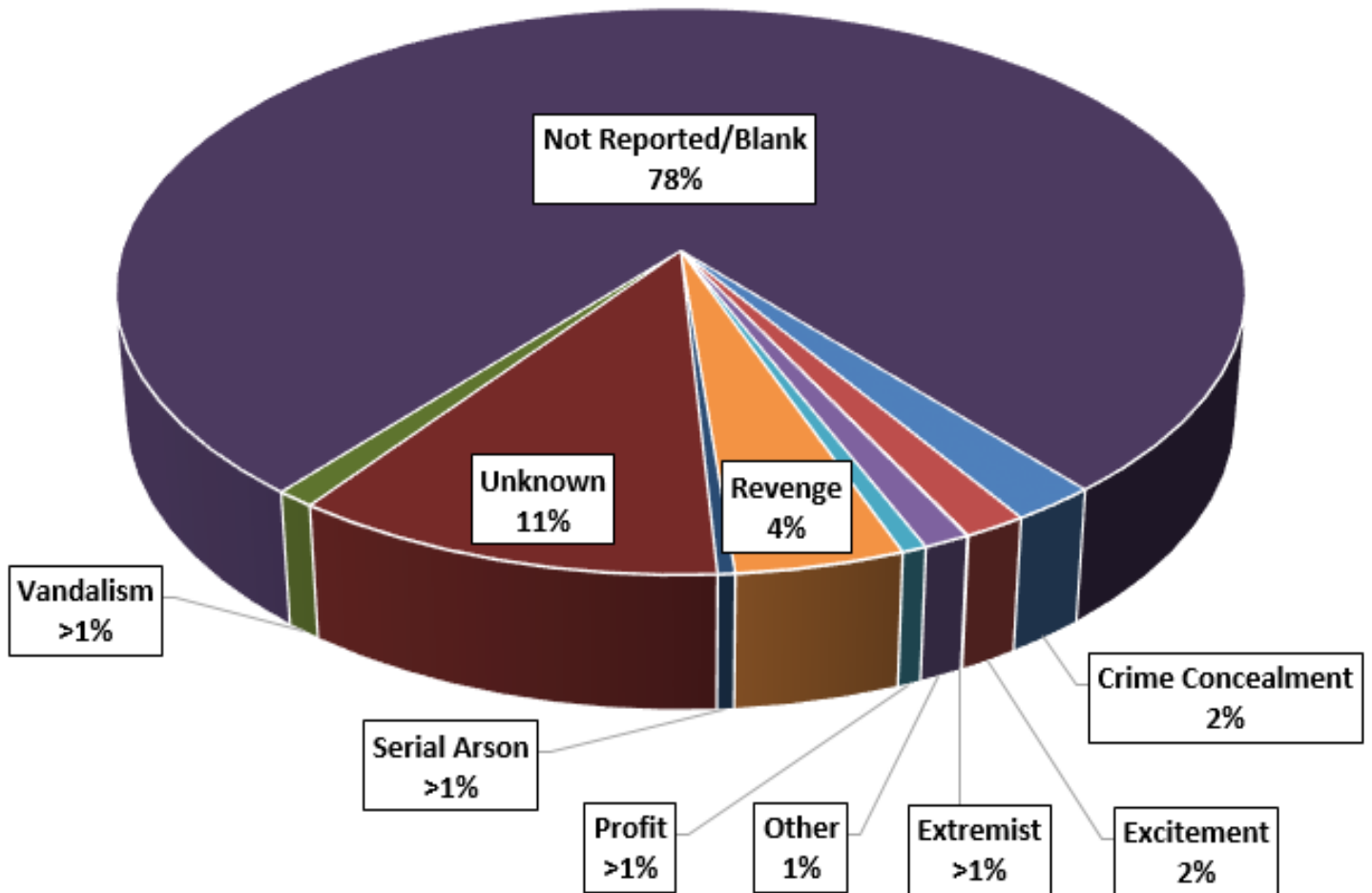
Motives for Incendiary Fires

Not Reported/Blank
78%

Unknown
11%

Revenge
4%

Vandalism
>1%

Serial Arson
>1%

Crime Concealment
2%

Profit
>1%

Other
1%

Extremist
>1%

Excitement
2%

Figure 13. Motives for Incendiary Fires

JUVENILE OFFENDER FIRES – 2019

There were 248 Incendiary fires recorded in BATS during 2019, where the suspect was listed as a "Juvenile Offender." A review of the property type involved in those 248 incidents revealed the primary property target of juvenile offenders was "Residential" followed by "Education." These 2 property types accounted for 171 incidents or 69 percent of the property types targeted by juvenile offenders during 2019.
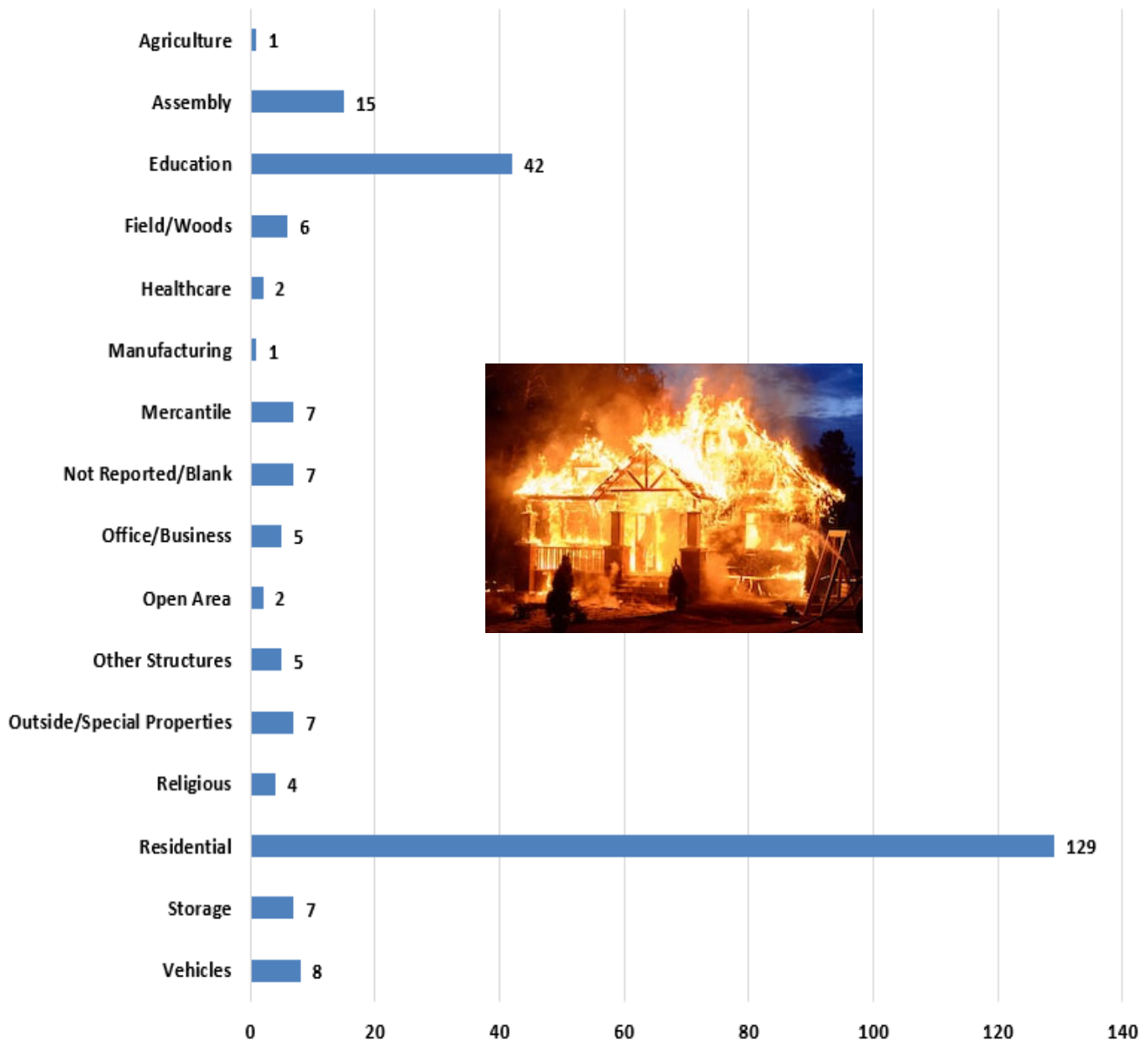

Property Types of Juvenile Offender Fires

Property Type	Count
Agriculture	1
Assembly	15
Education	42
Field/Woods	6
Healthcare	2
Manufacturing	1
Mercantile	7
Not Reported/Blank	7
Office/Business	5
Open Area	2
Other Structures	5
Outside/Special Properties	7
Religious	4
Residential	129
Storage	7
Vehicles	8

Figure 14. Property Types of Juvenile Offender Fires

AREAS OF ORIGIN – 2019

The top 3 "Areas of Origin" identified for the 6,717 Incendiary fires reported in 2019 were "Function Areas," "Transportation, Vehicle Areas" and "Other."*

Areas of Origin	Total
Assembly, Sales Areas (Groups of People)	249
Function Areas	635
Means of Egress	211
Multiple Places of Origin/Placement	317
Not Applicable	5
Other	396
Service Areas	5
Service, Equipment Areas	7
Storage Areas	255
Structural Areas	320
Technical Processing Areas	1
Transportation, Vehicle Areas	532
Unknown	3,784

The top 3 "Areas of Origin" identified for the 2,965 Residential Incendiary fires reported in 2019 were "Function Areas," "Structural" and "Multiple Places of Origin/Placement."*

Residential Fires – Areas of Origin	Total
Assembly, Sales Areas (Groups of People)	193
Function Areas	502
Means of Egress	162
Multiple Places of Origin / Placement	243
Not Applicable	3
Other	145
Service Areas	2
Service, Equipment Areas	3
Storage Areas	116
Structural Areas	246
Transportation, Vehicle Areas	13
Unknown	1,337

The top 3 "Areas of Origin" identified for the 634 Incendiary fires related to Commercial use reported in 2019 were "Storage Areas," "Function Areas" and "Other."*

Commercial Fires – Areas of Origin	Total
Assembly, Sales Areas (Groups of People)	22
Function Areas	45
Means of Egress	17
Multiple Places of Origin / Placement	25
Not Applicable	1
Other	45
Service Areas	1
Service, Equipment Areas	2
Storage Areas	85
Structural Areas	38
Technical Processing Area	1
Transportation, Vehicle Areas	13
Unknown	339

* The category of "Unknown" was not listed as a top area of origin for incendiary fires, as the category includes all incidents where "Unknown" was selected or left blank by the user.

HOUSE OF WORSHIP FIRES – 2019

During CY 2019, BATS captured a total of 224 fire-related incidents involving a house of worship (HOW). Of the 224 HOW fires, 95 were listed in BATS as "Incendiary," 47 as "Accidental" and 5 as "Natural." There were also 54 fires listed as "Undetermined" and 23 listed as "Under Investigation," as the incident was pending further investigative activities and/or laboratory examination.
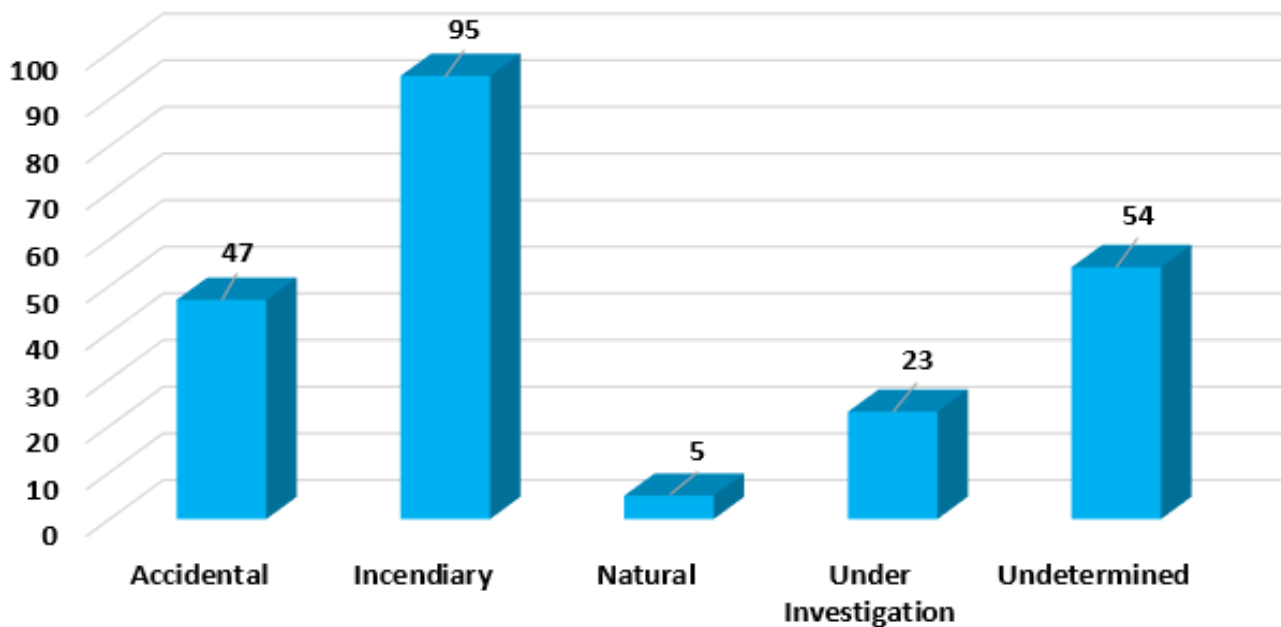
Reported House of Worship (HOW) Fires

Figure 15. House of Worship Fires

## Denomination of HOW Incendiary Fires
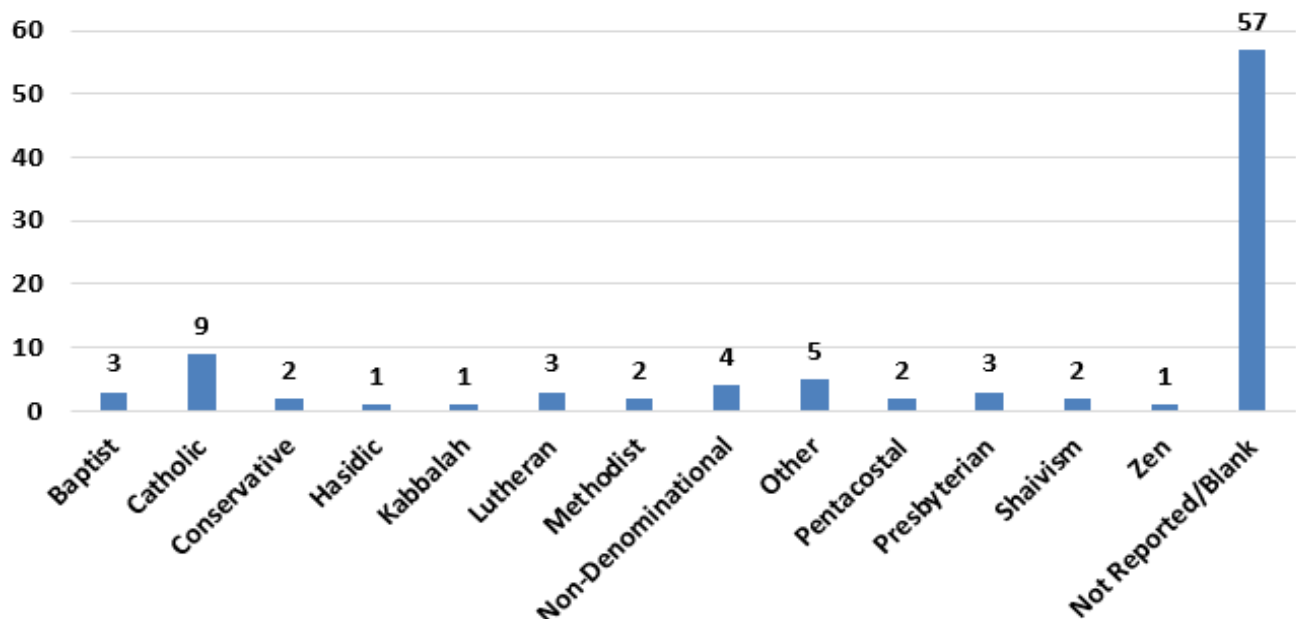
Figure 16. Denomination of HOW Fires

EDUCATION FIRES – 2019

There were 195 fires associated with an "Education" target during CY 2019. Of those 195 fires reported in BATS, 100 were listed as "Incendiary," 57 were listed as "Accidental," 24 were listed as "Undetermined" and 2 fires listed as "Natural." There were also seven fires listed as "Under Investigation," as the incident was pending further investigative activities and/or laboratory examination. The target subtype category of "High School/Junior High/Middle School" accounted for 47 percent of all fire types and 61 percent of all Incendiary fires associated with an "Education" target.
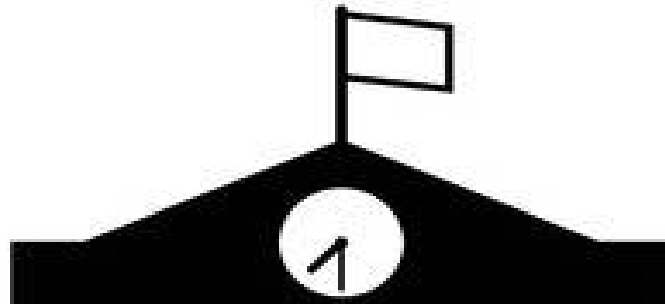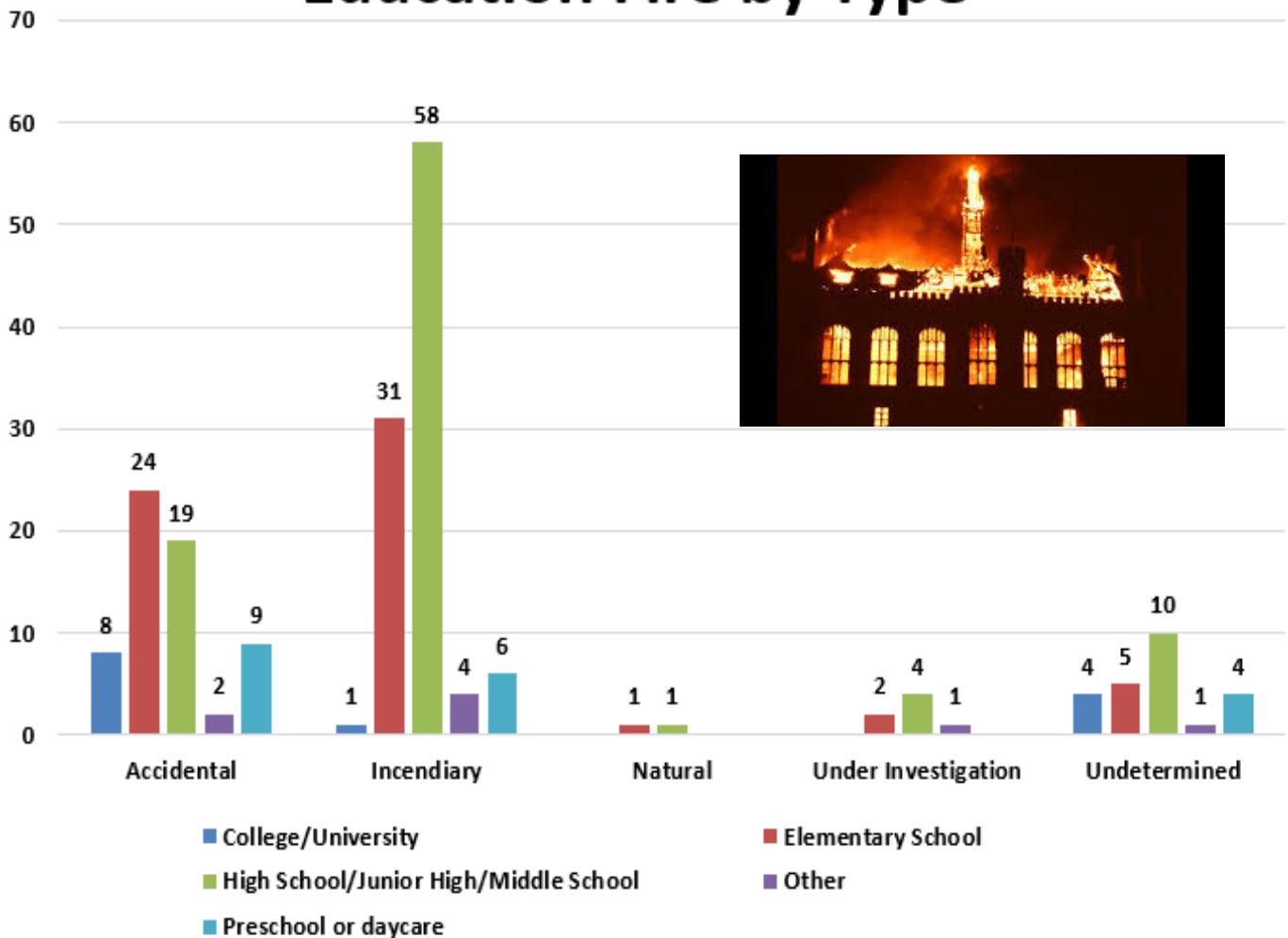

Figure 17. Education Fires

WILDLAND FIRES – 2019

During 2019, BATS added "Wildland" fire incidents as a selection path for fire incidents. In the past, BATS only offered "Field/Woods" as a property target to capture these types of incidents. In 2019, there were 77 "Wildland" fire incidents entered into BATS. Of those 77 fires, 26 were listed as "Debris Burning," 23 were listed as "Incendiary" and 7 listed as "Campfire."

Of the six (6) incidents associated with a "Miscellaneous" fire, three (3) involved "Fireworks," two (2) involved "Power lines" and the remaining incident involved "Firearms."
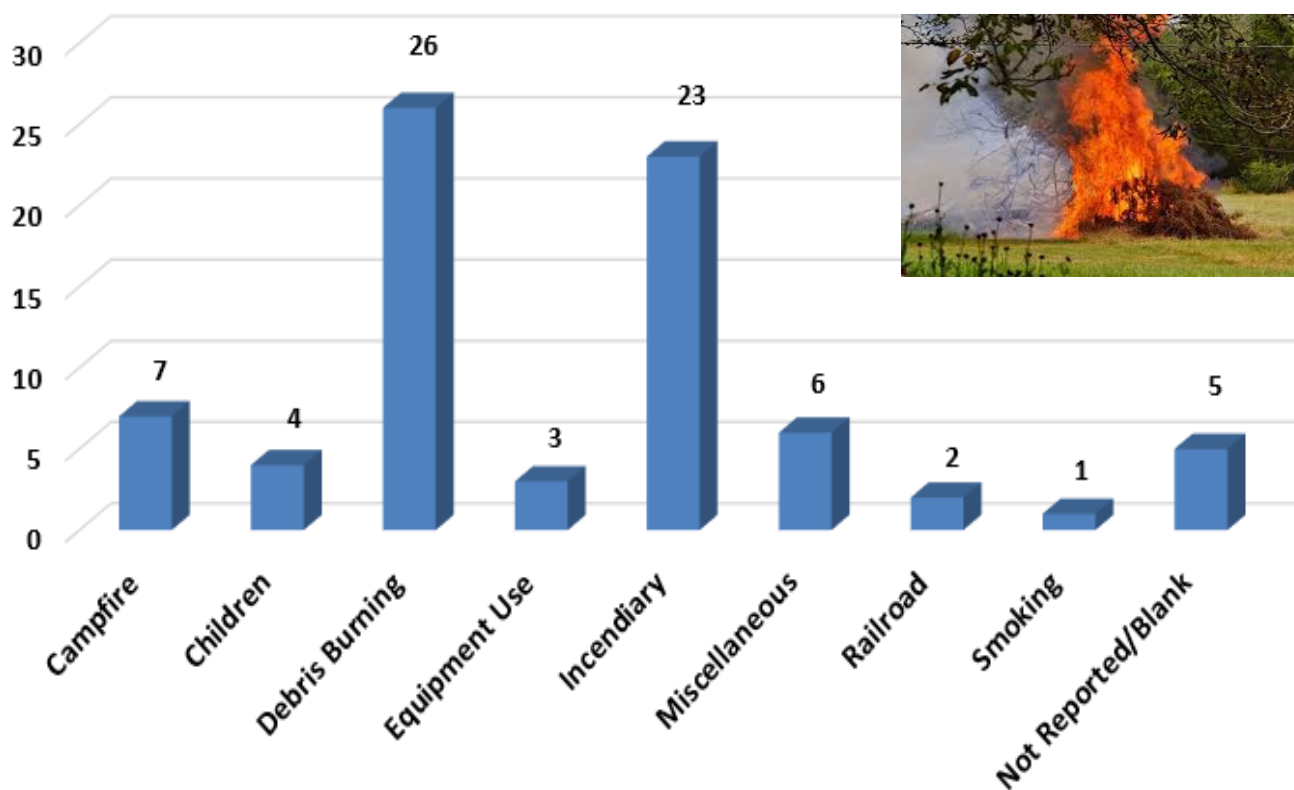

Figure 18. Wildland Fire Types

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