



# COMMUNITY RISK ASSESSMENT STANDARD OF COVER



**PEOTONE FIRE PROTECTION DISTRICT**

**2020**





## COMMUNITY RISK ASSESSMENT / STANDARD OF COVER

# PEOTONE FIRE PROTECTION DISTRICT

### Board of Trustees

President - Brian Hupe

Treasurer - Mike Shivers

Secretary - David Piper

Trustee - Randy Murray

Trustee - Claude Werner

### Fire Chief

William Schreiber

### Deputy Chief

Bruce Boyle

### Data Analyst/Consultant

Randy Reeder – Flashpoint Strategies LLC

### Mission Statement

*The Peotone Fire Protection District is committed to providing quality EMS and professional fire protection to meet the needs of our community. The District advances public safety through its fire prevention and education programs.*





### PFPD at a glance...

#### PEOTONE FIRE PROTECTION DISTRICT

formed: Fire Department 1881 – Fire District 1978

#### Protecting

**4,152** Residents (+2,330 Daytime population)

5,881 Structures: **2,530 k HOMES** / 3,351 OTHER

(FEMALE: 46.6%

MEDIAN AGE: 37.9

HOMEOWNERS: 81.7%

UNEMPLOYMENT: 8.3 %)

**69.5** Square Miles

\$ **165.1** million in Equalized Assessed Valuation

#### from

**1** Fire Station

#### with

**58** PART Time Firefighters & Paramedics – 6 Per Shift, **6 MINIMUM** per day

+ 2 Full Time - Admin/Support: **Fire Chief, Deputy Chief**

+ 1 **Administrative Assistant**

**(61 Total Combined)** Staffing shifts 24/7:

**JUMP COMPANIES: 1** ENGINE/SQUAD, **1** TRUCK, **2** AMBULANCES, **1** TENDER

All **ALS** – **Advanced Life Support** Equipped

#### delivering

**CLASS 4** ISO Rating

**1,146** calls for service (2019)    **3,344** (2017-19)    **EMS 63% FIRE/OTHER 37%**

**10,219** Apparatus Responses (2017-19)

#### oversight

**5 person elected Board of Trustees**

#### funding

**\$2.2 mil** Budget (**84%** from Property Taxes)

Tax rate: 1.019



## Table of Contents

PFPD at a glance.....	3
Table of Contents .....	4
Executive Summary.....	9
Introduction .....	10
SECTION 1: Area Characteristics .....	11
Legal Basis and Governance.....	12
Organizational Overview.....	12
Service Area .....	13
Fire Station Location .....	15
District History .....	16
Milestones.....	17
Funding Sources .....	22
Budget .....	24
Climate .....	25
Topography and Geography.....	27
Waterways .....	28
Water Supply.....	29
Demographics .....	30
Population Density.....	31
Population Shift (2000-2010).....	31
Critical Infrastructure.....	32
Critical Infrastructure & Target Hazard Map .....	33
Schools .....	34
Occupancy Profiles and Classifications .....	35
Zoning.....	37
Building Type Counts / Structure Inventory.....	39
Transportation Network .....	41
Trains.....	42
Planes.....	43
SECTION 2 - Programs & Services .....	45
Communications .....	46
Fire Suppression.....	46



---

EMS .....	46
Rescue .....	46
Special Operations: .....	47
Hazardous Materials .....	47
Technical Rescue .....	47
Water Operations .....	47
Training .....	48
Community Risk Reduction .....	49
M.A.B.A.S. Division 19 .....	50
MABAS-IL.....	51
I.S.O. ....	53
SECTION 3 - All Hazard Risk Assessment.....	55
All Hazard Risk Assessment.....	56
Risk Factors .....	57
Community Risk Assessment .....	58
Risk-Based Matrix.....	59
At-Risk Age Groups.....	60
At-Risk Age Groups and Population Shift (2000-2010) .....	61
Flooding.....	62
Geological & Weather Hazards .....	63
Historical Tornado Events .....	63
Natural Event / Weather Risk Scoring.....	66
Large Scale Incidents.....	67
Risk Assessment for Service Level Classifications .....	69
FIRE RISK.....	69
Fire Spread .....	70
Fire Risk Type Assessment .....	73
EMS RISK .....	75
EMS Risk level Classification .....	80
RESCUE RISK .....	81
Technical Rescue Risks .....	81
Hazardous Condition / HazMat Risk .....	82
Service/Other .....	83



SECTION 4 – RISK & RESPONSE .....	85
“Top Ten T’s” – Risk Assessment and Response Cycle.....	87
THREAT - Analysis.....	88
Risk Assessment Methodology and Categorization.....	89
Structure Stock in District .....	90
TYPE – Classification of Risk Level.....	91
TASKS / TOTAL (E.R.F.) .....	93
Critical Tasks.....	95
TEAMS / TOOLS / TRUCKS .....	97
Comparing Fire Suppression and EMS Capabilities.....	98
TIMES .....	99
NFPA 1710.....	99
TRACK.....	100
TRAIN.....	100
Risk & Response – Total Deployment Plan (all combined) .....	101
SECTION 5 - Current Deployment and Performance .....	103
Why Measure Performance? .....	104
Distribution .....	104
Concentration .....	104
Apparatus Details and Staffing Levels.....	105
Incident Response Measures / Service Demand.....	106
WHAT - Types.....	107
Incidents per Type by Year.....	109
Incidents by Type per Month (INCLUDES AID GIVEN).....	112
WHEN - Service Demand (Incident Frequency) .....	114
Incidents per Year .....	115
Incidents per Month .....	115
Incidents per Day of Week.....	116
Incidents per Hour of Day .....	116
Incidents per Day of Week by Month (Temporal) .....	117
Incidents per Hour of Day by Day of Week (Temporal).....	117
Incidents per Hour of Day by Month (Temporal).....	118
Simultaneous Incidents.....	118



WHERE – Incident Location..... 119

- Property Use ..... 119
- Geolocation - On Map..... 121
- Travel Times ..... 122
- FireCares.org Map..... 123
- Location & Frequency: Daytime Hours ..... 124
- Location & Frequency: Night-time Hours ..... 125
- NFIRS Type Coded – Incident Frequency (Heat Maps) ..... 125

WHERE – Jurisdictions (Aid Agreements)..... 132

- MUTUAL AID GIVEN ..... 132
- MUTUAL AID RECEIVED..... 133

Surrounding Fire Districts..... 133

WHO – Response Resources ..... 135

- Unit Workload ..... 135
- Incidents by Unit ..... 135
- Unit Hour Utilization / UHU ..... 137

HOW – PERFORMANCE ..... 139

- Fire Loss/Save Rate ..... 139
- EMS Cardiac Arrest Survival Rate..... 139
- Performance..... 141
- Distribution (First Due) Performance..... 141
- Concentration ..... 142
- Resiliency..... 143
- Response Times ..... 143

Response Time Performance ..... 144

- Benchmarks (Goals) ..... 146
  - Fire Benchmark Statement ..... 146
  - EMS Benchmark Statement ..... 147
  - Rescue/Special Operations Benchmark Statement ..... 147
  - Hazardous Materials Benchmark Statements..... 147

Baselines (Actual)..... 148

[No Aid Given] – Excludes Mutual Aid ..... 149

All Incidents – Includes Mutual Aid..... 152



ERF – Effective Response Force ..... 154

Total Response Time Maps - Segmented..... 155

TRAVEL TIME POTENTIAL - Current..... 162

    TRAVEL TIME POTENTIAL - PROPOSED STATION 2 ..... 163

SECTION 6 - A Plan for Maintaining and Improving Response Capabilities ..... 167

    Plan for Maintain and Improving Response Capabilities ..... 168

    Compliance / Review Methodology..... 168

    Accreditation Overview..... 171

SECTION 7 – Key Findings and Recommendations ..... 173

    Key Findings & Recommendations..... 174

SECTION 8 – APPENDIX ..... 175

    References..... 176

    ISO ..... 177

    Organizational Duties..... 178

    Critical Infrastructure - FEMA/DHS ..... 182

    EMS Trip Count by Primary Impression/Gender ..... 187

    Historical Tornado Events ..... 188







## Executive Summary

Fire Chief William Schreiber



I am humbled and honored to serve as the Fire Chief of the Peotone Fire Protection District. I have a unique insight into the District as a member since 1980, when I started as a cadet firefighter, working my way through the ranks, becoming full time in 1989. I have had the opportunity to serve under three Chiefs of the nine (with myself being the 9<sup>th</sup>) in the history of the department. Before the formation of the Fire District in 1978, there was the Village of Peotone Fire Department (1881) and the Peotone Rural Fire District (1940). Over the years, the District has taken baby steps to improve equipment, facilities, manpower, training, and capabilities. Peotone is proud of one of its firsts, and that being the first Paramedic Ambulance in Will County (1975). The department's firsts continued with a hazardous materials response team and vehicle that covered a large area for other counties until we joined the MABAS Regional Team (1999). We will continue at always looking ahead, providing the best Fire, Rescue, and EMS services possible, and always looking at improving.

The Peotone Fire Protection District's leadership, starting with the Board of Trustees, has made it clear that we serve the changing needs of the District and accomplish it by being proactively prepared, not reactive. The Fire District has seen some growth both in the Village and Townships we serve. Our calls for service have increased every year. Through preparation and training, we maintain the District's level of service. If you experience a medical issue, injury, fire, accident, spill, or leak, we are trained and prepared.

Peotone Fire, like every other department, likes to think they are providing the service they claim and are doing it well. We have people in key positions, developing training and procedures. The question is, how is this disseminated to the rank and file and what effect does it have on what we claim and what we truly do.

Through the Community Risk Assessment and the Standard of Cover, we will reset where needed, build on the District's strengths, learn from the District's weaknesses, and set plans and policies to meet those shortcomings. We will embrace opportunities and meet threats with planning and preparation.

While some of the conclusions and recommendations are not new, they are now a fact, with analysis based on input from all. If not addressed, they can stop the Fire District's forward progress and force us to become a reactive organization instead of being proactively prepared for the needs of the residents, which is the direction given by the District's Board of Trustees.

*William Schreiber*

FIRE CHIEF



## Introduction

The Peotone Fire District has conducted a Community Risk Assessment / Standard of Coverage (CRA-SOC) for the area it serves. The primary purpose of this document is two-fold:

First, to identify and assess risks specific to our citizens, visitors, and businesses that the District protects.

Secondly, to allocate an efficient, effective deployment distribution and concentration of resources to respond appropriately to meet our mission of “providing quality EMS and professional fire protection to meet the needs of the community.”

The basis of a Standard of Cover document is a tool to provide:

- assessment of community all-hazard risks: both fire and non-fire
- definitions of baseline (actual) & benchmark (goal) - emergency response performance standards
- determination of apparatus & staffing patterns
- planning for possible future station locations/relocation
- evaluation of workload and ideal unit utilization
- measurement of service delivery
- support of strategic planning and policy development relative to resources and allocation of funds.

This analysis is part of the District’s continuous improvement process plan and is divided into sections:

- Area Characteristics
- Programs & Services
- All Hazard Risk Assessment
- Risk & Response
- Current Deployment & Performance
- A Plan for Maintaining & Improving Performance
- Key Findings & Recommendations



*Note: Content added by the author sourced to other products of original work by the author or others. RR*



**SECTION 1: Area Characteristics**



**SECTION 1**

Area  
Characteristics





## Legal Basis and Governance

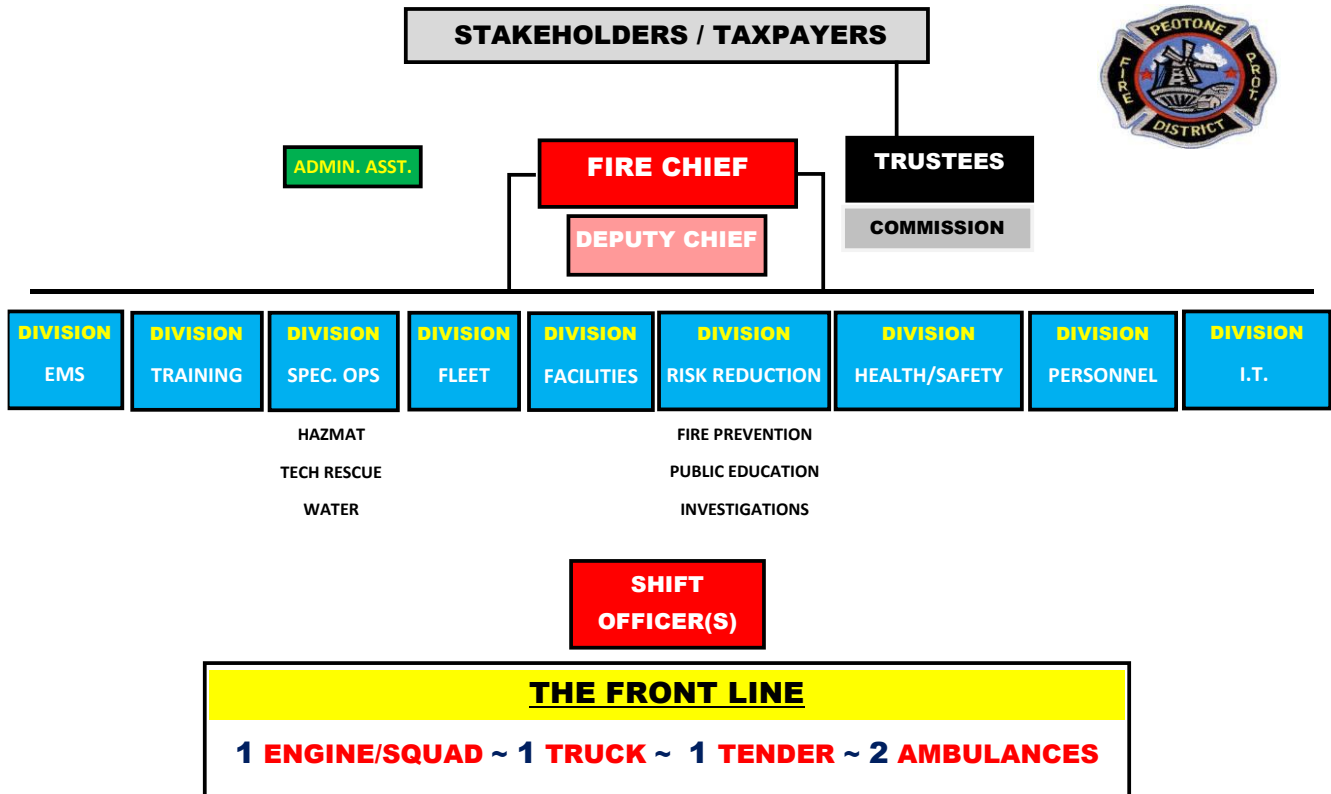
The Peotone Fire Protection District (PFPD) was incorporated in the State of Illinois in **1978** as a Special District. As a Special District under Illinois Compiled Statutes (ILCS) Special Districts – Fire Protection District Act (70 ILCS 705/). The District is an independent governing body and is not directly associated with other government entities such as towns or cities. As a Special District, PFPD has no direct affiliation with the incorporated Village within the coverage area.

Peotone Fire District has oversight and governance by a five (5) person elected Board of Trustees (BOT). Appointments are six (6) year terms and are staggered to provide overlap and continuity.

There is currently no Board of Fire Commissioners (BOFC), and the Board of Trustees assumes those responsibilities.

## Organizational Overview

The District is led by a fulltime Fire Chief who reports to the BOT. Support is delivered through a command structure comprised of one (1) fulltime Deputy Chief and an Administrative Assistant. Part-time employees assist in Division Duties and shift operations. Organizational Duties are listed in detail in the Appendix.

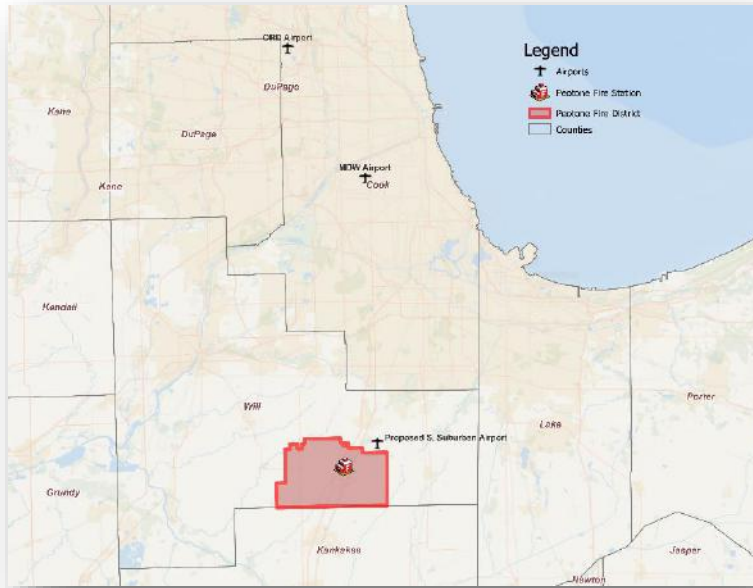




### Service Area

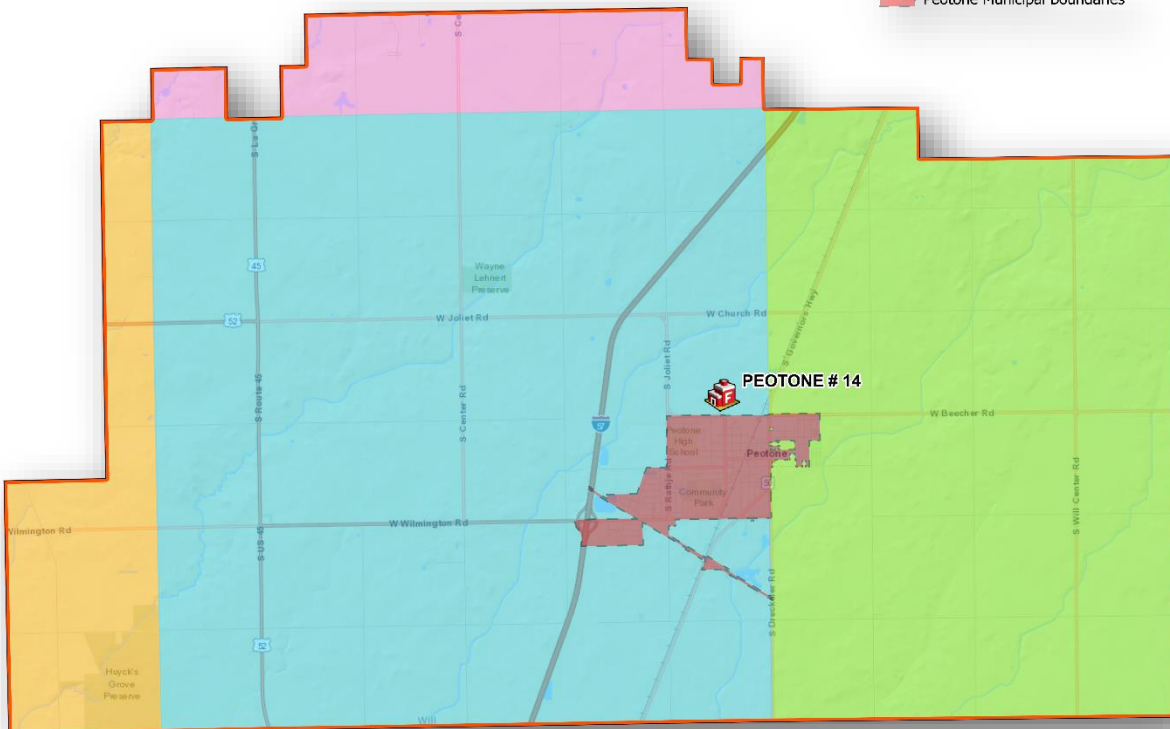
The District is in Will County, Illinois, and is approximately 43 miles south of Chicago, protecting an area of **69.5 square miles**. The service area includes the Village of Peotone and surrounding unincorporated areas.

Population estimates served is 4,152. The District is comprised of mostly farmland, with a small village in the center and an Interstate highway crossing through the middle.



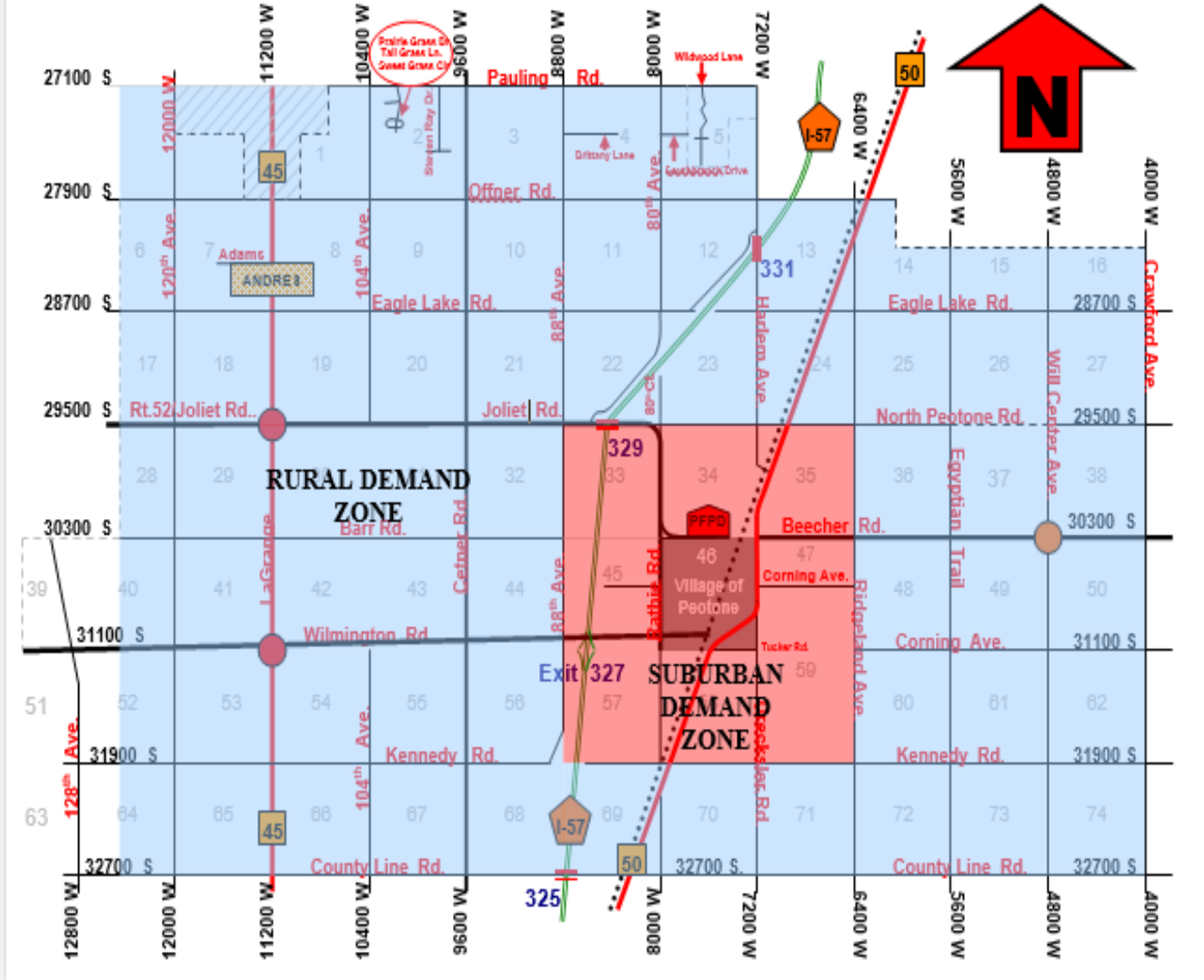
### Peotone Incorporated/Unincorporated Areas

- Green Garden Township
- Peotone Township
- Will Township
- Wilton Township
- Peotone Municipal Boundaries





# PEOTONE FIRE PROTECTION DISTRICT







## Fire Station Location

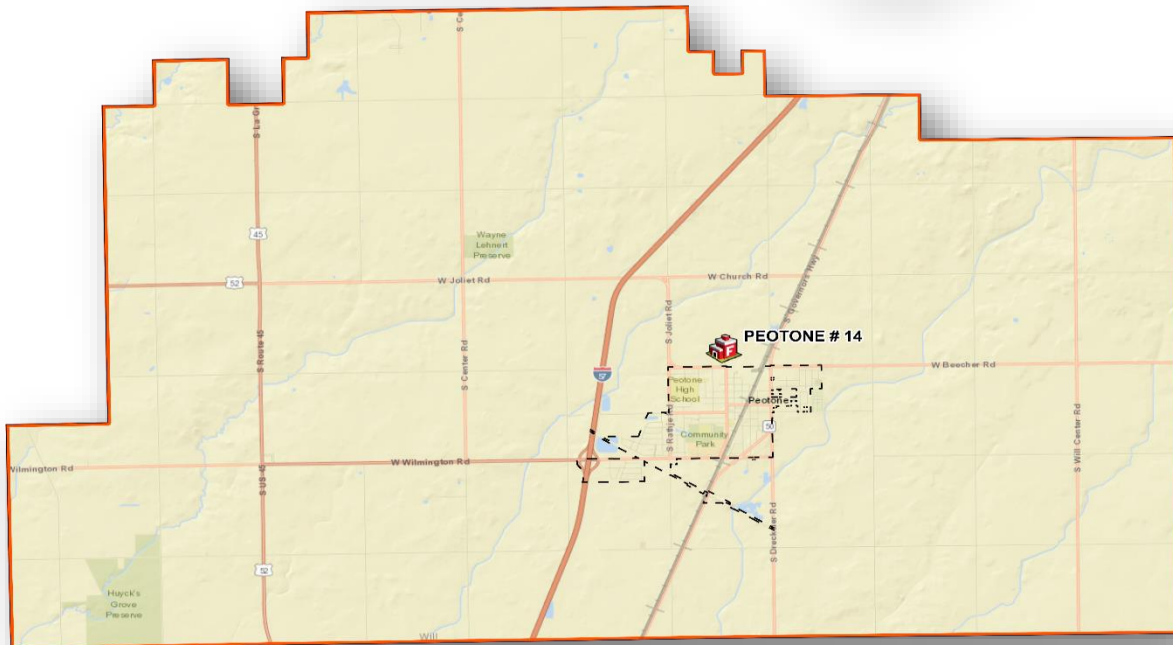
**7550 W. Joliet Rd, Peotone 60468**

The central single fire station is on the north end of the Village of Peotone. It has six double-deep apparatus bays, a bunkroom that sleeps 6 with locker rooms, a kitchen, and a dayroom. There are offices for two Chief Officers, an administrative assistant, station officer/radio room, exercise room, board meeting room, and a large classroom in addition to numerous ancillary bay area work/gear rooms.



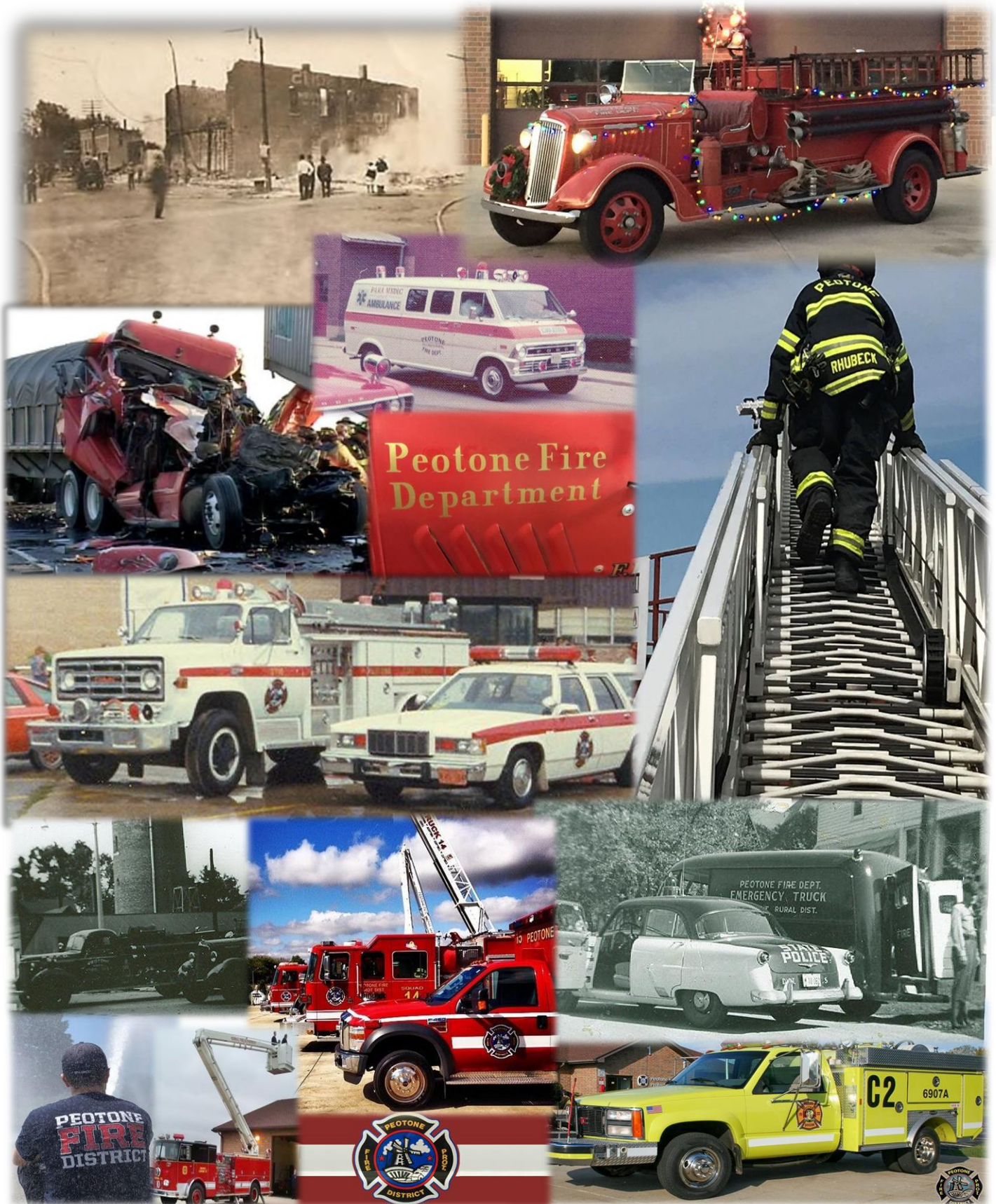
## Fire Station Locations

-  Fire Stations
-  Municipal Boundaries
-  USA Railroads





## District History







## Milestones

The Peotone Fire Protection District has some rich history in the fire service. Here are just some of the many notable events from the past.

1881  
formed

- 1881: The Village of Peotone purchased its first fire hand pumper, and the department's first organized drill held on April 15, 1881, under the command of **Captain John Fedde**
- 1895: South side of the downtown area on Main St. burns to the ground
- 1895: Village of Peotone lays its first water mains and hydrants
- 1900: Village of Peotone purchases hose carts and ladder carts
- 1910: **Chief Henry Kurtz** appointed
- 1910: First fire station built in the alley at Railroad & Corning
- 1912: **Peotone Volunteer Fire Department** organized; equipment moved to a new station by the water tower
- 1912: **Chief Elmer Kurtz** appointed
- 1913: The great Peotone fire occurred and destroyed several businesses downtown
- 1924: New Village Hall and Fire Station built
- 1924: A Ford Model T fire truck with chemical tanks purchased by the Village
- 1928: Peotone grade school (Connor Shaw Building) destroyed by fire
- 1931: **Chief Chet Conrad** appointed, and some new equipment purchased
- 1935: A 1935 REO Seagrave Pumper purchased by the Village (Still Own)
- 1940: The **Peotone Rural Fire Department** formed, and an 1100-gallon tanker purchased
- 1950: New front mount rural pumper purchased by the Rural Department
- 1952: An addition to the fire station added to hold additional equipment
- 1956: A meeting room and kitchen added to the fire station
- 1958: **Chief Emil Koennecke** appointed
- 1961: Village of Peotone purchase new Chevrolet Cab Over Seagrave Pumper
- 1964: The Rural Department purchases new Chevrolet Darley front mount pumper



- 1966: Station 2 built at North & Railroad, so equipment was on both sides of the tracks
- 1967: **Chief Allan Harms** appointed
- 1967: Rescue tools and a panel van purchased for inhalator calls
- 1970: New Ford Cabover Pierce Pumper purchased for both the Village and Rural Departments
- 1970: New Ford Club Wagon purchased for inhalator calls and manpower shuttle
- 1974: First four personnel sent to paramedic school at Ingalls Hospital
- 1975: Peotone's first paramedic ambulance goes in service and the first for Will County
- 1976: New GMC Emergency One mid-size rescue pumper purchased
- 1977: New Chevrolet Stuart Tank front mount 1800-gallon pumper tanker purchased
- 1977: **Chief Lanson Russell** appointed
- **1978: Voters approved merging the Village and Rural departments forming the Peotone Fire Protection District**
- 1980: JJC Fire Science Classes offered at the Peotone Fire Protection District for its members
- 1980: New Ford Horton ambulance purchased
- 1983: First full-time Fire Chief hired (**Chief Lanson Russell**)
- 1983: Pension fund established
- 1983: New Pierce Dash Pumper purchased, first diesel-powered apparatus and crew cab equipped vehicle
- 1983: Major fire breaks out in the downtown building on Second St. (Red Foxx & Uncle Dan's Second Story Restaurant)
- 1984: Mack shop-built rescue truck purchased from the Kalamazoo FD
- 1985: 9-1-1 System implemented in Peotone
- 1985: New Chevrolet Suburban purchased
- 1985: New Ford McCoy Miller ambulance purchased
- 1987: **Chief Clifford Oliver** appointed



- 1988: First full-time firefighter paramedic hired on days (Scott Nietfeldt)
- 1988: Part-time firefighter paramedic position created for dayshifts
- 1989: Bill Schreiber hired full time to replace Scott Nietfeldt
- 1989: "Duty squad" nights initiated for emergency response from 6 p.m. to 6 a.m.
- 1989: Chevrolet Stuart Tank Tender sent for new tank and body at Simon Fire Equipment
- 1992: Construction started on new fire station 1
- 1992: Ford F-350 Darley skid brush truck purchased
- 1992: 1980 Ford Horton ambulance re-chassis
- 1993: Current Station 1 dedicated
- 1993: Additional part-time firefighter/paramedic day shift spot created
- 1993: A Ford Cabover Pepsi Truck converted into a hazmat response vehicle
- 1995: **Chief John Young** appointed
- 1995: Captain Bill Schreiber appointed to the full-time Deputy Chief position
- 1995: A new Pierce Saber Pumper placed in service (First Enclosed Cab)
- 1995: Purchased a used 100Ft. LTI Aerial Ladder from New Lenox FPD
- 1996: A new International Horton ambulance placed in service
- 1999: A grant received for the purchase of a Pierce Ideal Beverage rescue truck from the Huber Heights Ohio FD used as a hazmat response vehicle
- 2000: Truck 14 sent to Pierce for a new enclosed cab and total refurb
- 2001: A used Mack SPI tender purchased from the New Vernon Twp. New Jersey FD
- 2001: A new International Horton ambulance placed in service
- 2002: A used Pierce Pumper purchased from the Northwest Homer FPD
- 2002: An AFG Grant received for training and the training tower
- 2002: A referendum passed placing part-time personnel in the station 24/7
- 2003: Three part-time Firefighter Paramedic positions created for 24-hour shifts



- 2004: An AFG grant received for hose, fittings, nozzles
- 2005: Truck 14 and personnel deployed to New Orleans in response to the Hurricane Katrina disaster.
- 2005: A fourth part-time Firefighter Paramedic position created for 24-hour shifts
- 2006: An AFG grant received for 42 sets of turnout gear and a gear washer
- 2006: The Fire Department celebrates its 125<sup>th</sup> Anniversary
- 2006: A new American LaFrance Rescue Pumper placed in service
- 2007: A used American LaFrance LTI aerial ladder purchased from the Fountain Valley California FD
- 2007: An Illinois State Fire Marshal Small Equipment Grant received for hose and equipment
- 2008: **Chief Bill Schreiber** promoted to full-time Fire Chief
- 2008: A fifth part-time Firefighter Paramedic position created for 24-hour shifts
- 2009: A new Ford Horton ambulance placed in service
- 2009: A 0% Interest Revolving Loan awarded for the purchase of a Sutphen Rescue Pumper
- 2009: A new FSI rescue boat with a motor placed in service
- 2009: Squad 14 becomes an ALS engine
- 2010: Deputy Chief Bruce Boyle hired full time
- 2010: A new Ford F-350 using the old Darley Skid Unit placed in service
- 2011: Acquired a 55Ft. Seagrave Snorkel from the Normal Illinois FD
- 2011: An AFG grant received for 50 new portable radios
- 2012: A new Ford Horton ambulance placed in service
- 2015: Placed Stryker cots and power loads in service on both ambulances
- 2015: Placed new Zoll 12 lead cardiac monitors in service on both ambulances
- 2015: A sixth part-time firefighter paramedic position created for 24-hour shifts
- 2016: Planning begins moving forward for fire station 2
- 2016: A seventh part-time firefighter paramedic position was created for dayshift only



- 2016: A new Smeal UST Pumper Tender placed in service
- 2016: An IPRF grant awarded to install a diesel extraction system
- 2016: An Enbridge Pipeline grant awarded for the purchase of three APX 7000 radios
- 2017: Fire District purchases land for fire station 2
- 2017: Consolidation of three dispatch centers completed
- 2017: A new set of Genesis Battery Operated Rescue Tools placed in service
- 2017: A new set of Paratech Rescue Air Bags placed in service
- 2018: A Com Ed grant awarded to remove old lighting and install new LED energy efficient lighting at fire station 1
- 2018: ISO review upgrades 90% of the fire district at **Class 4**
- 2019: Dayshift part-time firefighter paramedic position eliminated
- 2019: 2009 Ford Horton ambulance sent for a re-chassis to Medworks

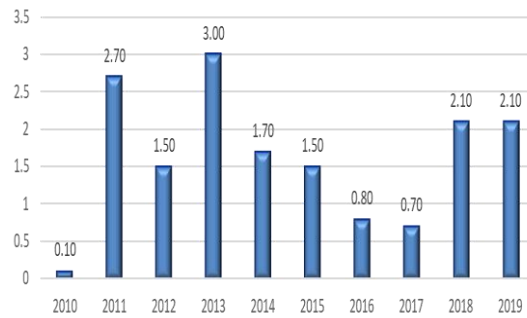




## Funding Sources

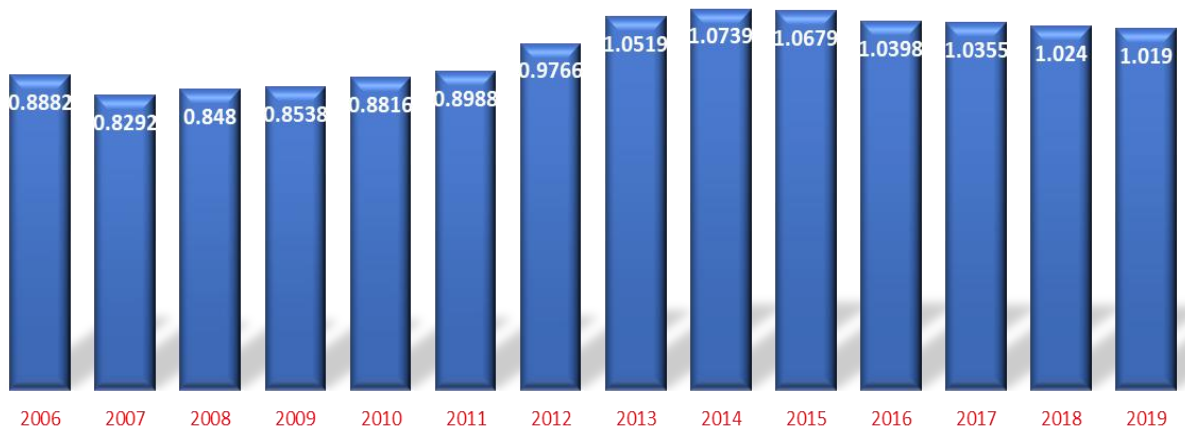
The Board levies property taxes to meet budget demands as the primary source of funding revenue. Taxes are applied based upon property valuation and Equalized Assessed Valuation (EAV) amounts. The District is limited by a state-mandated Property Tax Extension Law Limit (PTELL), thus restricting tax levy increases. Both the District’s and Pension Fund’s property tax revenues fall under the tax caps limit of 5% or CPI (whichever is less). Approximately **84.2% of funding is obtained through property taxes** levied on District residents. Other sources of revenue include EMS fees, incident cost recovery, investment income, and fire prevention fees. PFPD is limited to revenue sources as a Special District and cannot impose additional taxes. The District does not directly receive revenue through any municipal entity.

Levy Year	2014 Extension	2015 Extension	2016 Extension	2017 Extension	2018 Extension	2019 Extension
Collection Year	2015	2016	2017	2018	2019	2020
EAV	\$143,532,392	\$146,763,968	\$154,265,606	\$159,211,848	\$165,139,103	\$172,615,081
Tax Rate	<b>1.074</b>	<b>1.068</b>	<b>1.04</b>	<b>1.036</b>	<b>1.024</b>	<b>1.019</b>



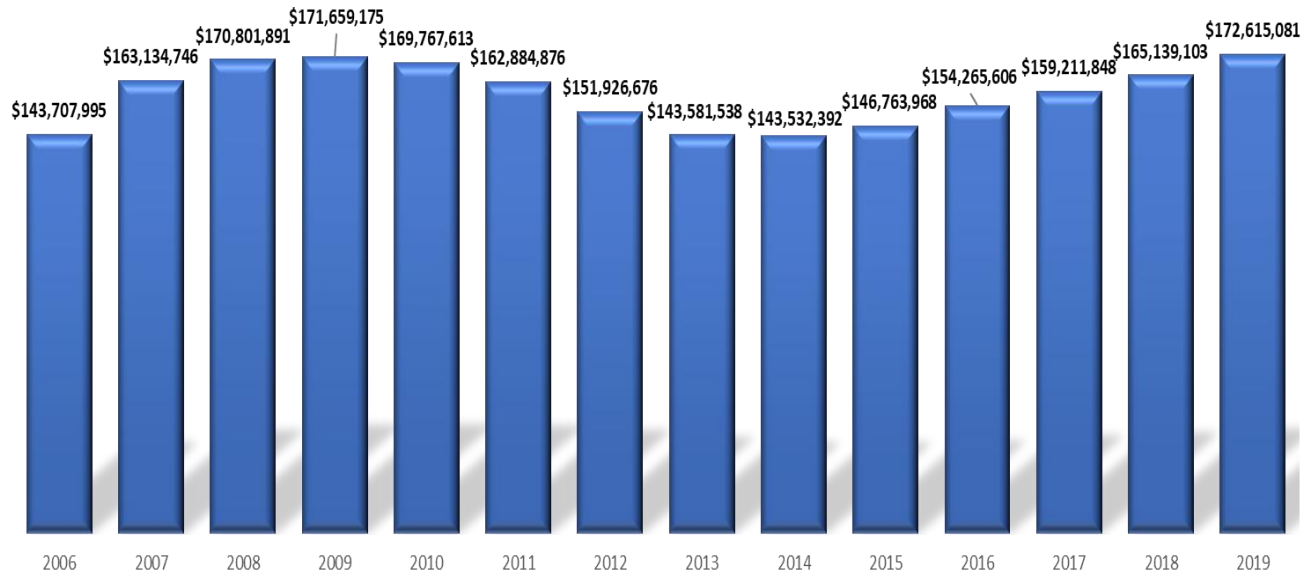
Consumer Price Index (CPI) 10 years prior

## Historic Tax Rates

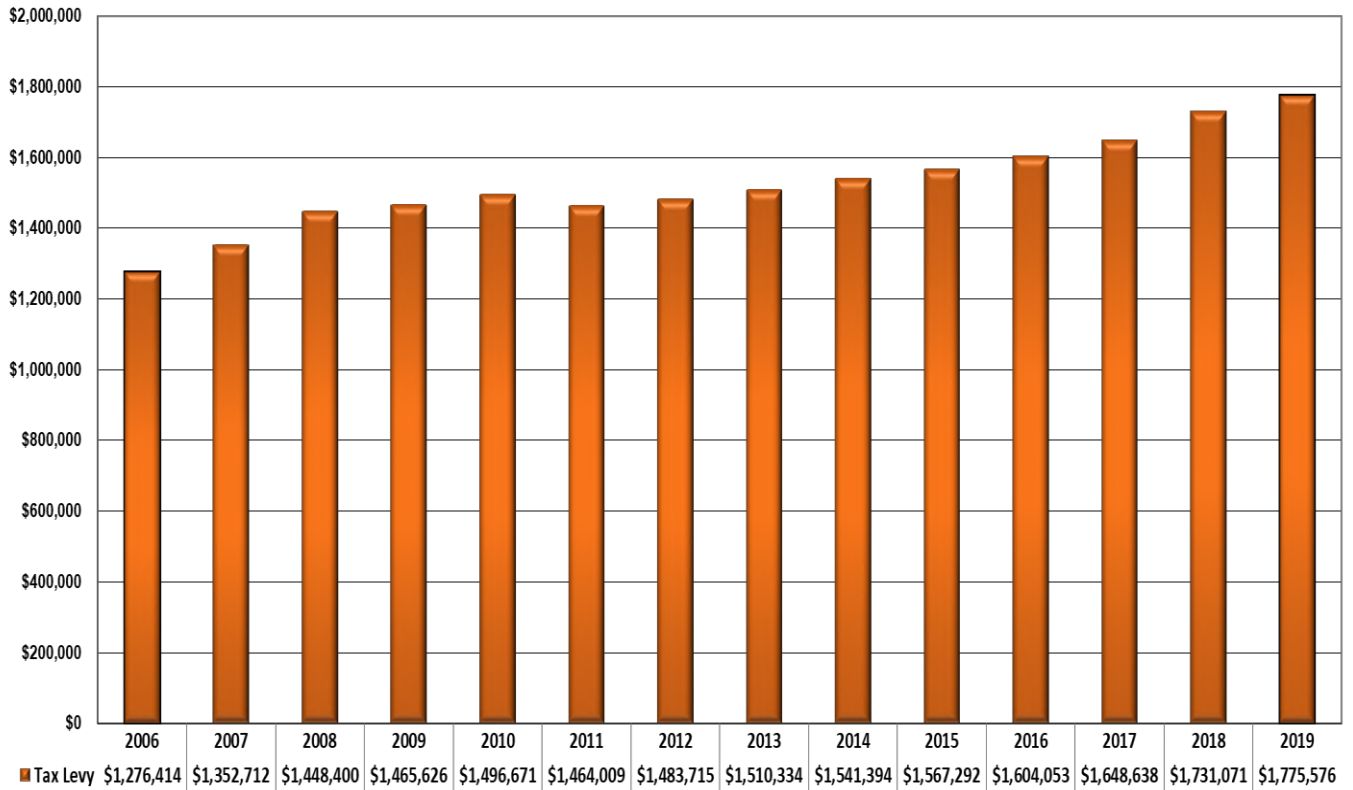




### Historic Assessed Valuation



### Tax Levy Comparison





## Budget

The Board of Trustees (BOT) approves budgets annually on a fiscal year basis ending April 30<sup>th</sup> of each year.

### APPROPRIATED BUDGET

Fiscal Year ending April 30th

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Corporate Fund	1,317,840	1,467,360	1,722,840	1,266,540	1,266,240	1,337,040
Ambulance Fund	1,317,840	1,467,360	1,722,840	1,266,540	1,244,640	1,337,040
Firemen's Pension Fund	151,800	155,280	151,320	153,000	156,600	164,280
Tort/Liability Insurance Fund	475,800	508,920	519,480	525,600	536,400	541,200
FICA Fund	65,760	67,920	69,120	70,800	72,600	74,880
Audit Fund	7,200	7,560	7,920	8,040	8,400	8,640
<b>TOTAL FISCAL YEAR</b>	<b>3,336,240</b>	<b>3,674,400</b>	<b>4,193,520</b>	<b>3,290,520</b>	<b>3,284,880</b>	<b>3,463,080</b>
% change over the previous period		<b>10%</b>	<b>14%</b>	<b>-22%</b>	<b>0%</b>	<b>5%</b>

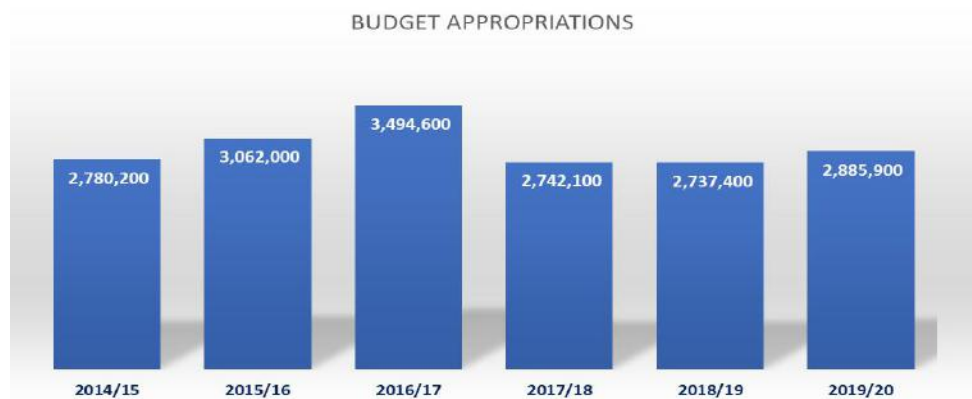
### BUDGETED

Fiscal Year ending April 30th

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Corporate Fund	1,098,200	1,222,800	1,435,700	1,055,450	1,055,200	1,114,200
Ambulance Fund	1,098,200	1,222,800	1,435,700	1,055,450	1,037,200	1,114,200
Firemen's Pension Fund	126,500	129,400	126,100	127,500	130,500	136,900
Tort/Liability Insurance Fund	396,500	424,100	432,900	438,000	447,000	451,000
FICA Fund	54,800	56,600	57,600	59,000	60,500	62,400
Audit Fund	6,000	6,300	6,600	6,700	7,000	7,200
<b>TOTAL FISCAL YEAR</b>	<b>2,780,200</b>	<b>3,062,000</b>	<b>3,494,600</b>	<b>2,742,100</b>	<b>2,737,400</b>	<b>2,885,900</b>
% change over the previous period		<b>10%</b>	<b>14%</b>	<b>-22%</b>	<b>0%</b>	<b>5%</b>

*\*NOTE –These published budget figures do not match actuals. They include grant revenue expectations that may or may not be realized and others.*

**The 2018 Audit show actual revenues of \$1.85 million and expenses of \$2.0 million.**







## Climate

Climate is the description of the long-term pattern of weather in a place and can mean the average weather for a region and period taken over a timeframe, such as 30 years.

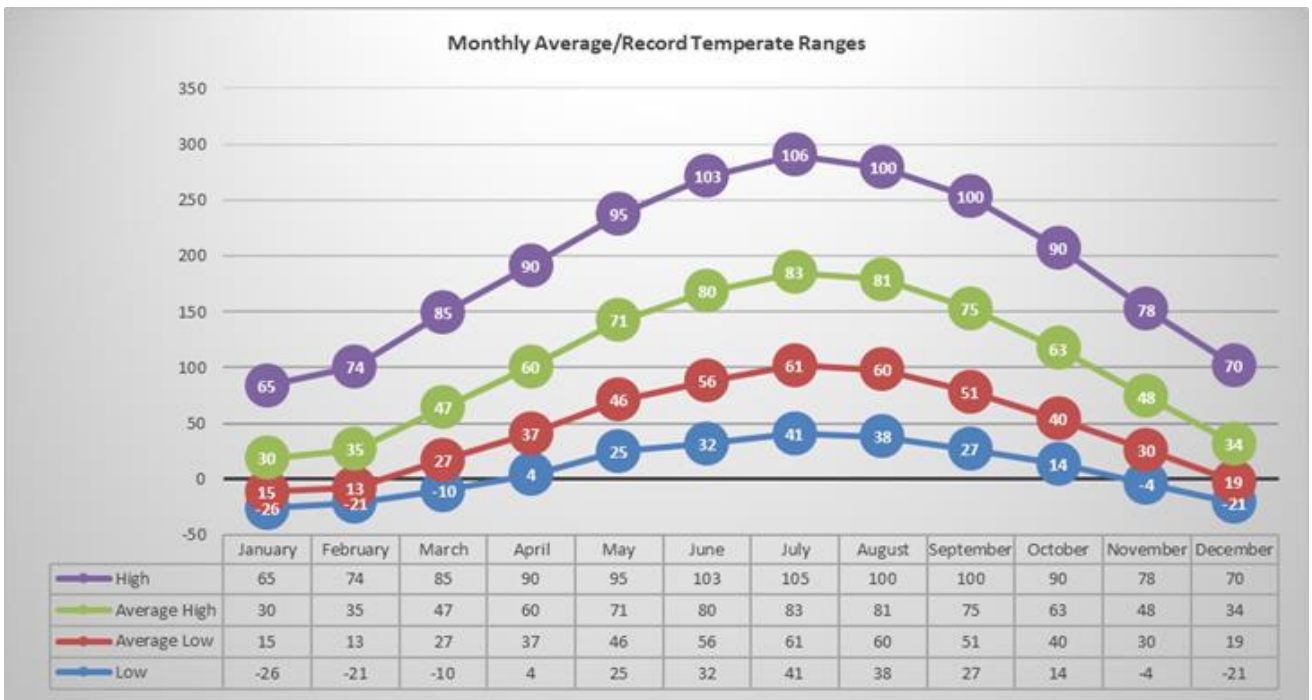
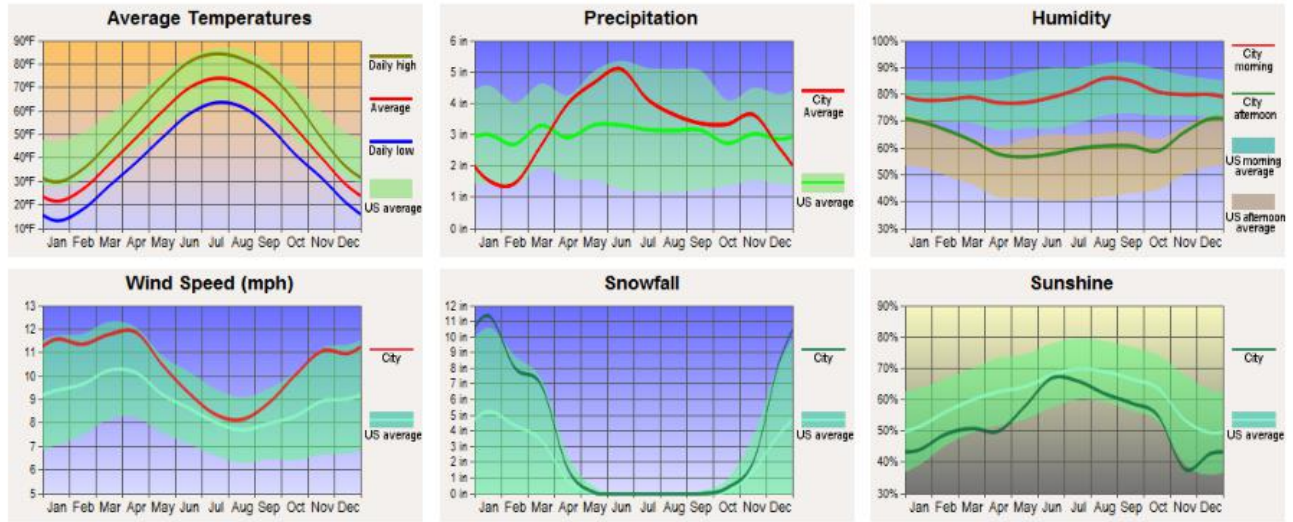


AVERAGE	Degree F°	
<b>TEMPERATURE</b>		
		Overall
HIGH	84	July
LOW	18	January
<b>PRECIPITATION</b>		
RAIN	41.46"	Mar-Dec
SNOW	26.9"	Dec-Mar
PRECIP. DAYS	116	
SUNNY DAYS	190	
RECORD	Degree F°	
<b>TEMPERATURE</b>		
HIGH	106	2011
LOW	-26	2019
<b>PRECIPITATION</b>		
	1 DAY	
RAIN	9.56"	7.13.1957
SNOW	26"	1.27.1967
	YEAR	
RAIN	59.51"	1993
SNOW	65"	1978-79



## Average climate in Peotone, Illinois

Based on data reported by over 4,000 weather stations



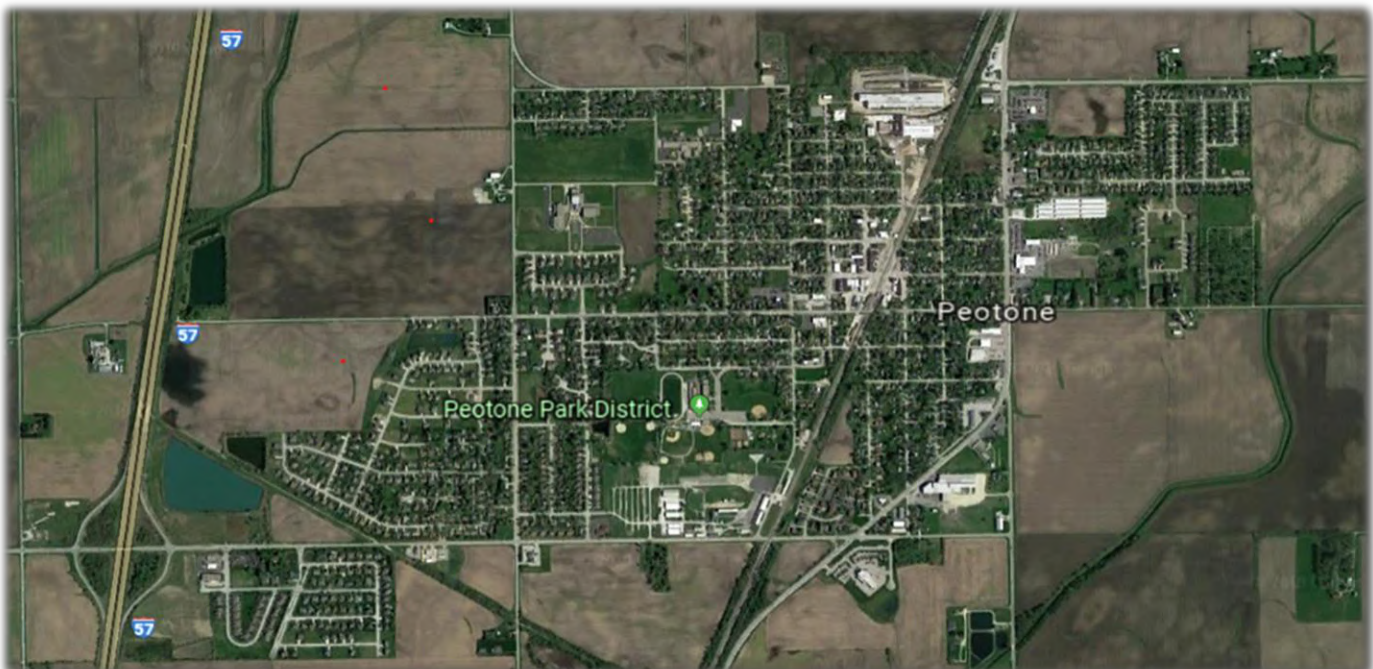
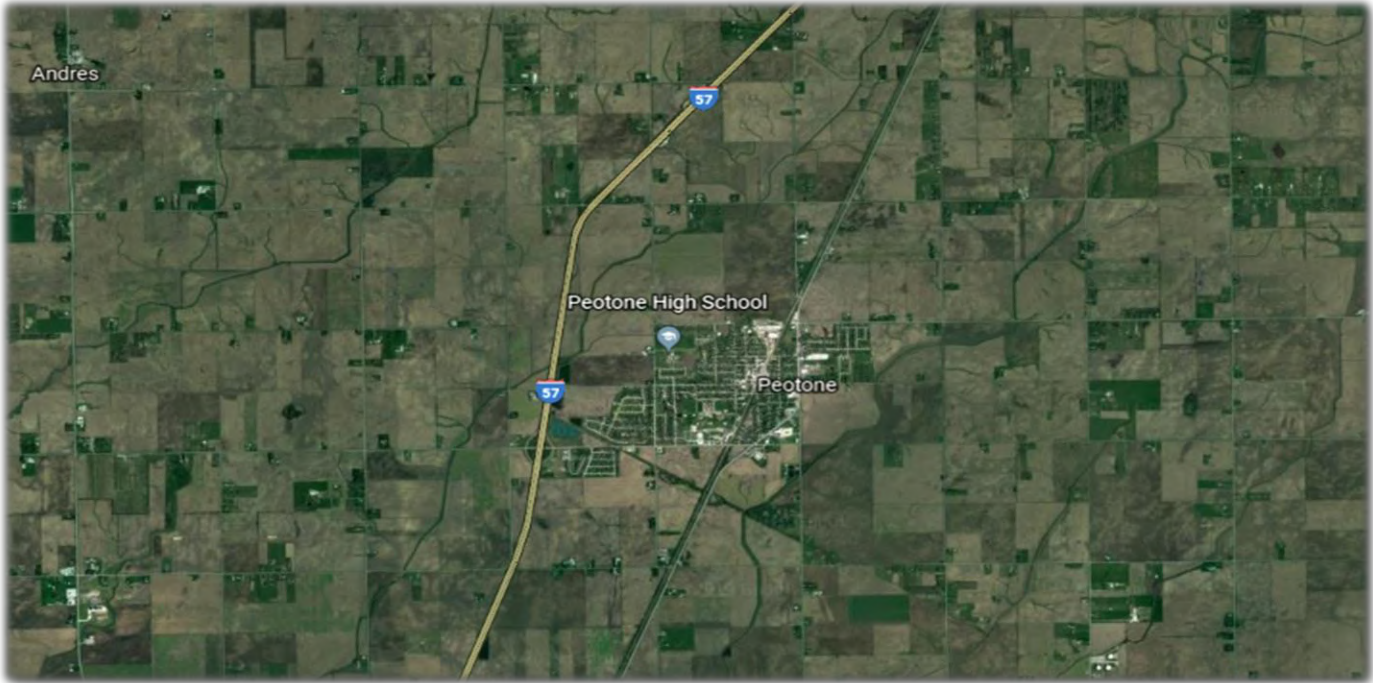


## Topography and Geography

The geographical coordinates of Peotone are 41.332 deg. latitude, -87.785 deg. longitude, and 702 ft elevation.

The topography within **two (2) miles** of the Village of Peotone is **mostly flat**, with a maximum elevation change of **66 feet** and an average elevation above sea level of **701 feet**. **Ten (10) miles** beyond the Village is also **primarily flat** (213 feet), and within **50 miles** contains only **modest variations** in elevation (535 feet).

The area within **2 miles** of Peotone is covered by **cropland (87%)** and **artificial surfaces (13%)**, within **10 miles** by **cropland (93%)**, and within **50 miles** by **cropland (64%)** and **artificial surfaces (22%)**.



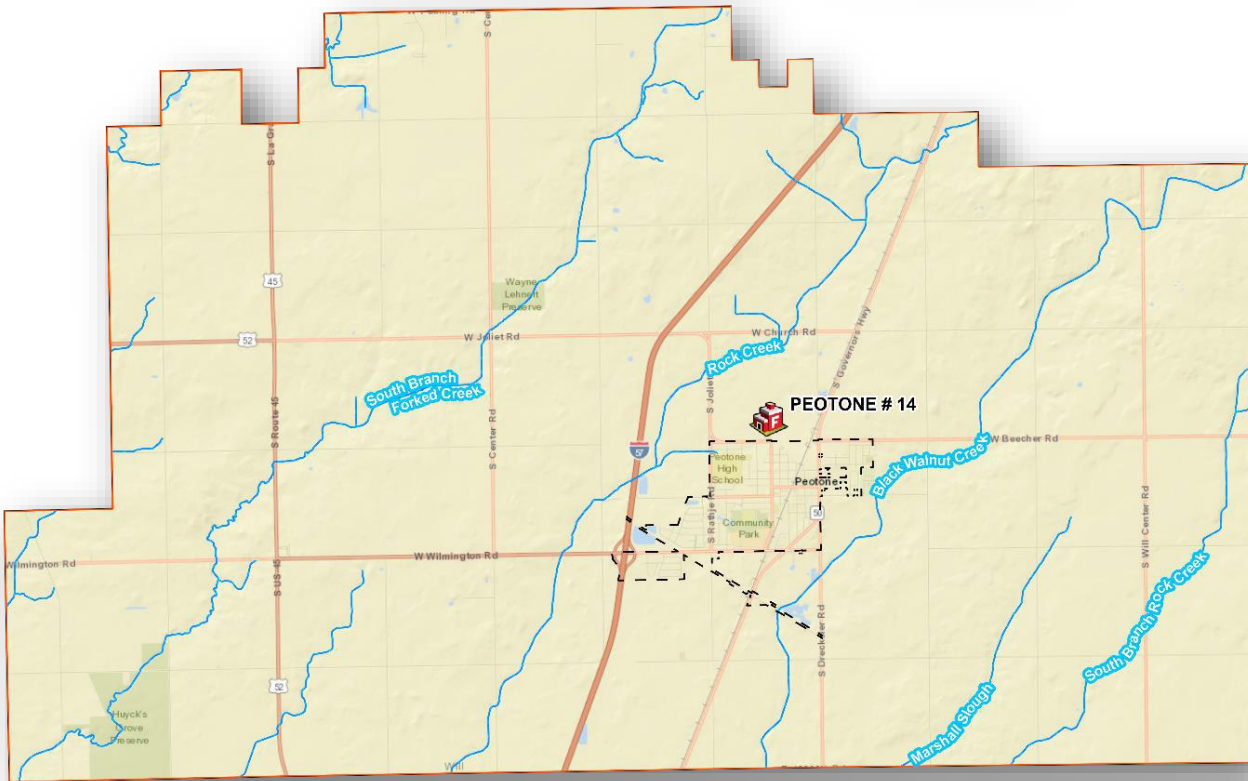


## Waterways

There are a few creeks that run through the District. Most are small and not very deep. However, in times of heavy rainfall, they present a significant flood hazard potential and will be discussed later in the flooding hazard section.

### Waterways of Peotone Fire District

- Creeks
- - - Municipal Boundaries





## Water Supply



The only public water supply in the District is within the Village limits of Peotone. There are 330 hydrants maintained by the Village. Overall, the 2019 ISO report rates the Water Supply System, Hydrants, and Inspections/Flow Testing at **73.28%** (29.31 pts out of 40).

In 2019, the water system was sold to Aqua Water, and they now are fully responsible for the maintenance and delivery of the system.

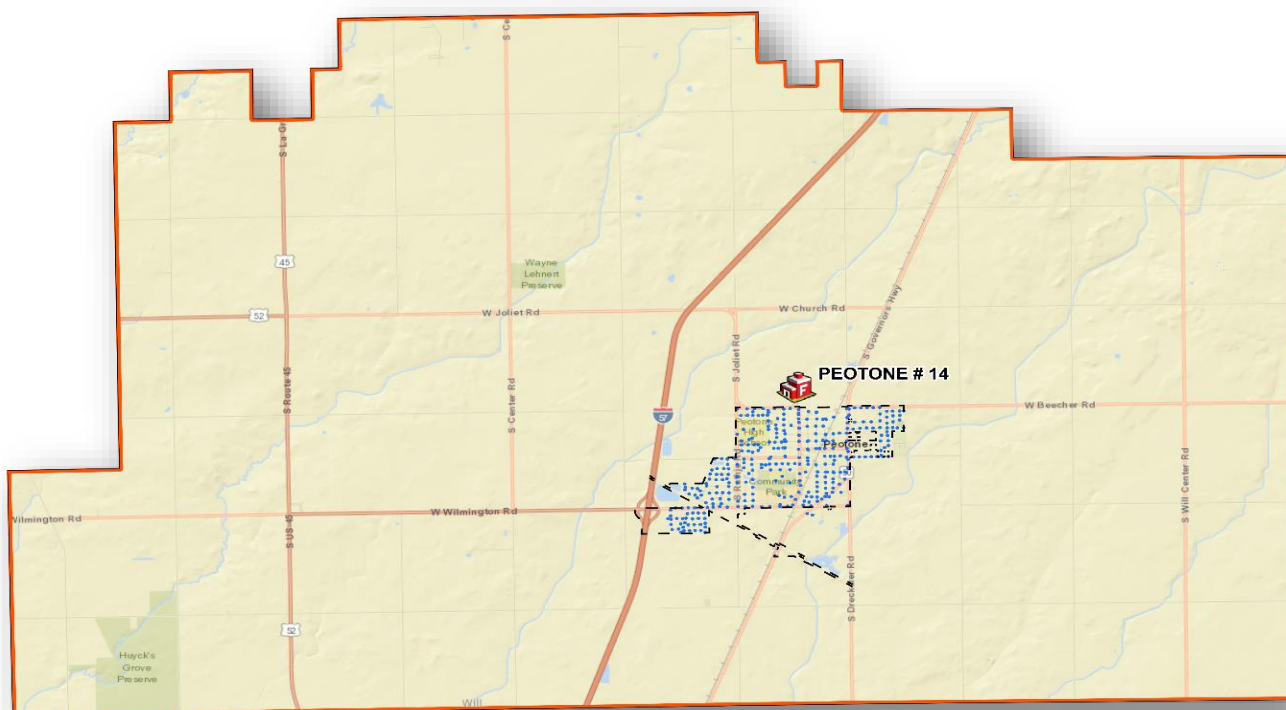
Areas that do not have hydrants have private wells, and the District relies on Tanker/Tender operations to shuttle water into fire scenes.



<b>I.S.O. Rating: WATER SUPPLY</b>			
616	Supply System	30	<b>21.59</b> <b>71.97%</b>
621	Hydrants	3	<b>2.92</b> <b>97.33%</b>
631	Inspection and Flow Testing	7	<b>4.8</b> <b>68.57%</b>
<i>Previously: Inspection &amp; Condition</i>			<b>68.57%</b>
<b>590</b>	<b>CREDIT for WATER SUPPLY</b>	<b>40</b>	<b>29.31</b> <b>73.28%</b>

### Fire Hydrant Service Provider

- PEOTONE
- Municipal Boundaries





## Demographics

### Village of Peotone, Illinois

Factfinder.Census.gov Data

#### Median Household Income

**\$ 83,358**

#### Male Median Income

**\$ 47,988**

#### Female Median Income

**\$ 22,750**



**4,136** Total Population

**22.2%** INCREASE since 2000



**37.9**

Median age

#### Persons in poverty

**5.3 %**

#### Educational Attainment: High School graduate or higher

**95.0 %**



#### College Graduates

**20 %**

#### Persons without health insurance

**4.0 %**



#### Median Housing Value

**\$ 188,100**



#### Total Housing Units

**1,555 (77 % owner/occupied)**



#### Total Vacancy

**64**



#### Number of Firms

**412**



#### Number of Employees

**2,330**



#### Veterans

**184**



#### Race

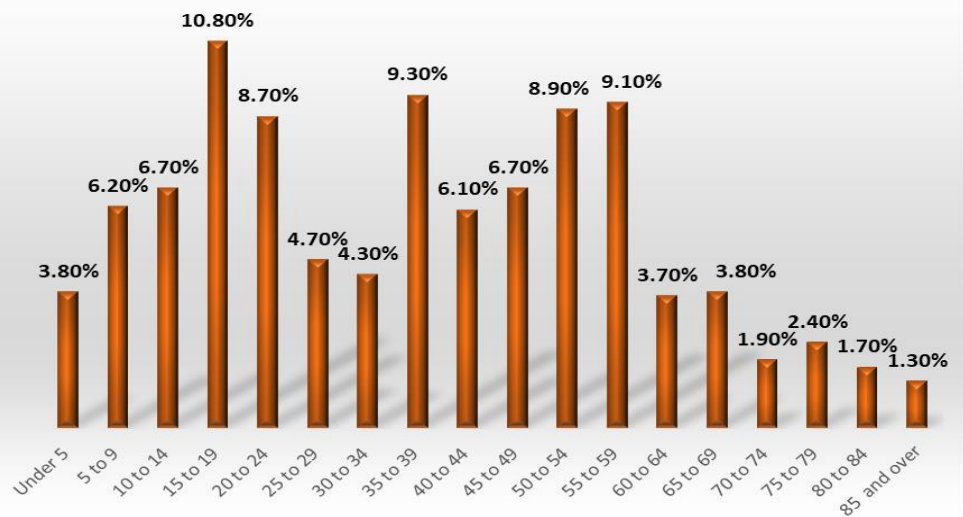
**White alone 92.9 %**

**Hispanic 5.0 %**

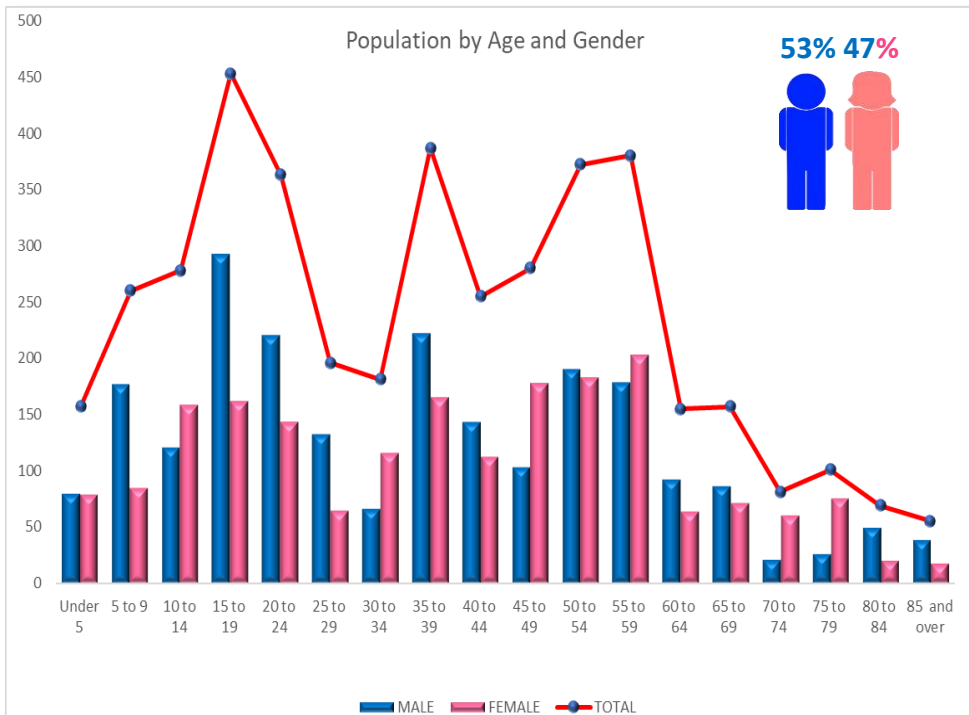
**Other 2.1%**



### Population Age Group



### Population by Age and Gender





### Population Density

The District is considered primarily “Rural” community classification. 4,152 residents are living within the 69 square mile District, which is mostly farmland and a 1.87 square mile incorporated small-town village primarily located between Interstate 57 and Illinois Route 50.

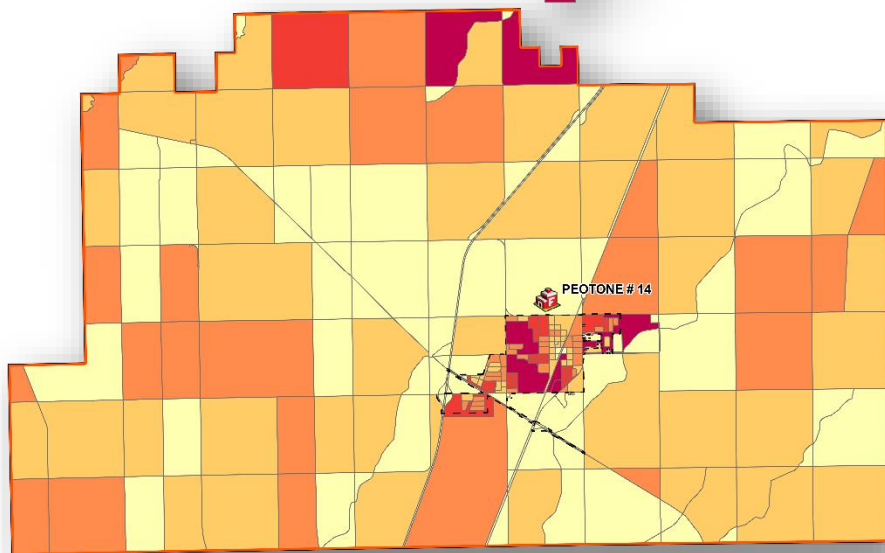
**Density within the Village is 2,232 people/square mile and is classified as an “Urban” population.**

At-Risk Population	
Under 5 years old	Over 65 Years Old
<b>382 (13%)</b>	<b>894 (5%)</b>

### Population Shift (2000-2010)

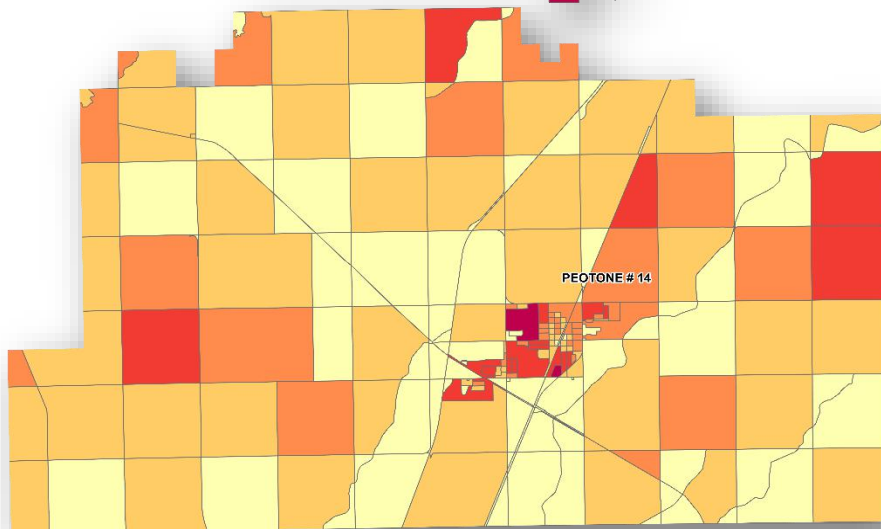
Census Block Population Count (2010)

- 0 - 11
- 12 - 32
- 33 - 66
- 67 - 123
- > 123



Census Block Population Count (2000)

- 0 - 11
- 12 - 32
- 33 - 66
- 67 - 123
- > 123





## Critical Infrastructure

Critical infrastructure are assets considered essential to the functioning of society, economies, and communities. Presidential Policy Directive 21 (PPD-21) "Critical Infrastructure Security and Resilience" recognizes 16 categories of Critical Infrastructure. As such, when conducting a complete Community Risk Assessment, these facilities must be identified and built into the emergency response planning process. There are 16 critical infrastructure sectors whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof. [Presidential Policy Directive 21 \(PPD-21\): Critical Infrastructure Security and Resilience](#) advances a national policy to strengthen and maintain a secure, functioning, and resilient critical infrastructure. **A complete description of these 16 Critical Infrastructure types is included in the appendix as well.**

[Chemical Sector](#)

[Commercial Facilities Sector](#)

[Communications Sector](#)

[Critical Manufacturing Sector](#)

[Dams Sector](#)

[Defense Industrial Base Sector](#)

[Emergency Services Sector](#)

[Energy Sector](#)

[Financial Services Sector](#)

[Food and Agriculture Sector](#)

[Government Facilities Sector](#)

[Healthcare and Public Health Sector](#)

[Information Technology Sector](#)

[Nuclear Reactors, Materials, and Waste Sector](#)

[Transportation Systems Sector](#)

[Water and Wastewater Systems Sector](#)

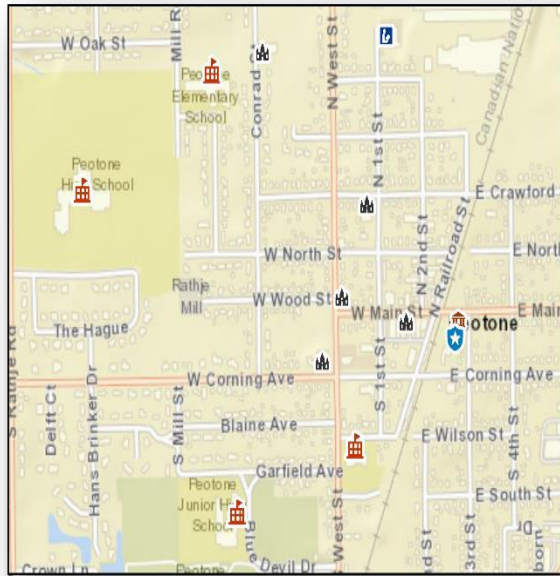






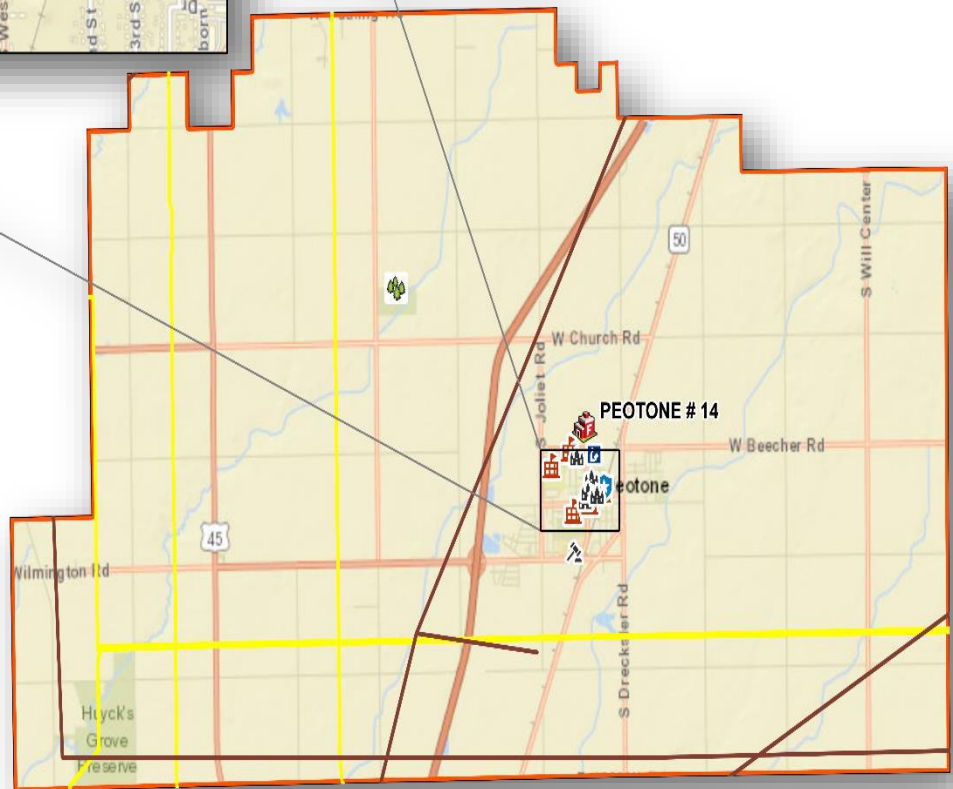
### Critical Infrastructure & Target Hazard Map

Peotone Fire District protects several critical infrastructures serving the immediate and regional communities. These include gas and oil pipelines, schools, major interstate highway, rail lines, places of assembly, and more.



### Critical Infrastructure

- Natural Gas Pipeline
- Electric Power Transmission Lines
- Schools
- City or Village Hall
- Courthouse
- Forest Preserve
- Library
- Police Station
- Hotel or Motel
- Place of Worship

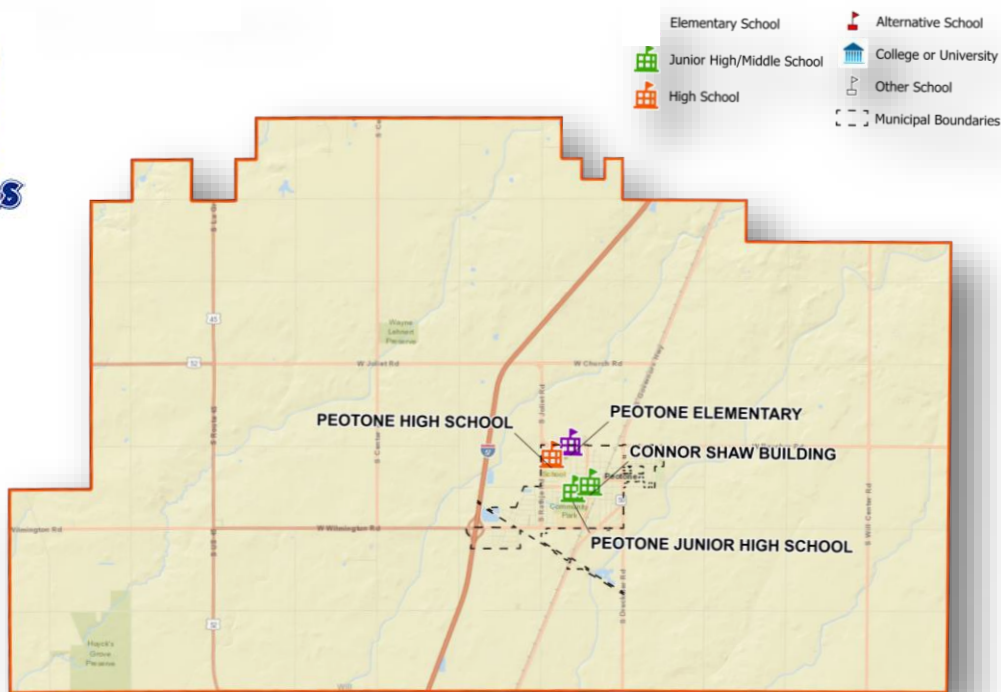




## Schools

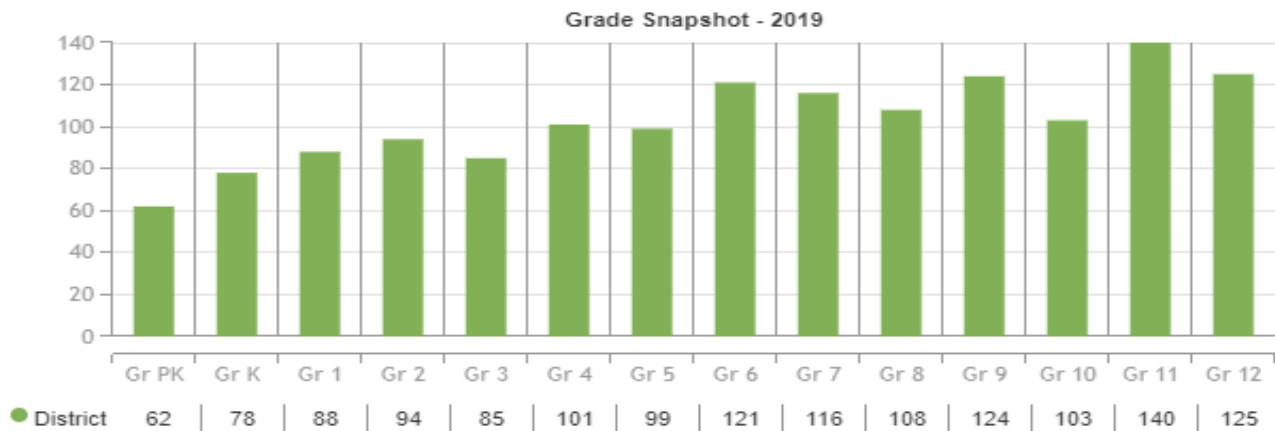
There are four (4) CUSD 207U schools within the Fire District (+1 outside of the District - Peotone Intermediate) with a total of **1,244** students (an 11.2% decline from 1,606 in 2015) and has a total of **98** teachers.

	Grades	Students
Connor Shaw Center (Admin)	PK	62
Peotone Elementary	K-3	345
*Peotone Intermediate Center	4-5	200
Peotone Junior High	6-8	345
Peotone High School	9-12	476
<b>TOTAL STUDENT POPULATION</b>		<b>1,444</b>
<b>*Total within the PFPD</b>		<b>1,244</b>

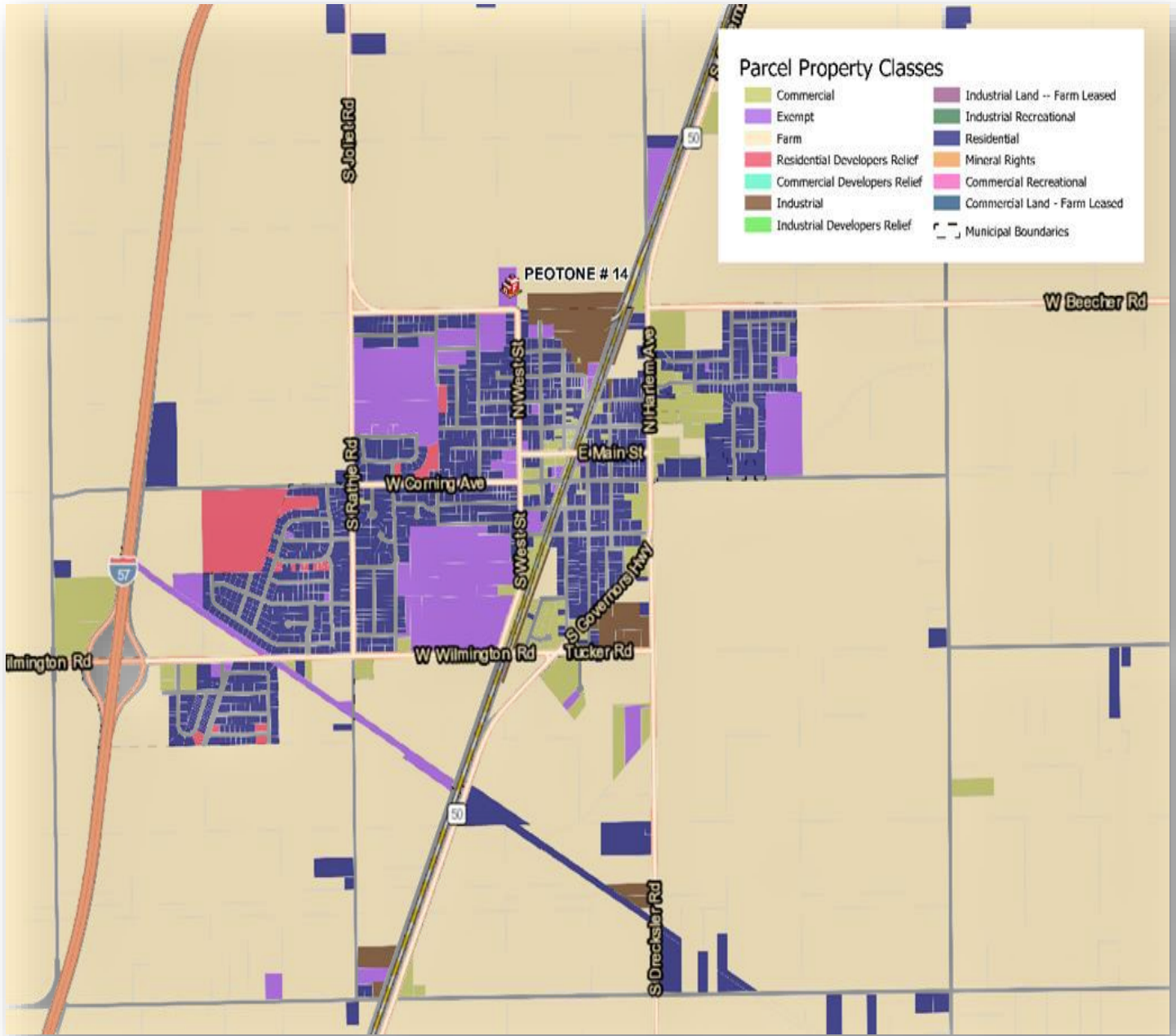


## Enrollment

The total number of students enrolled







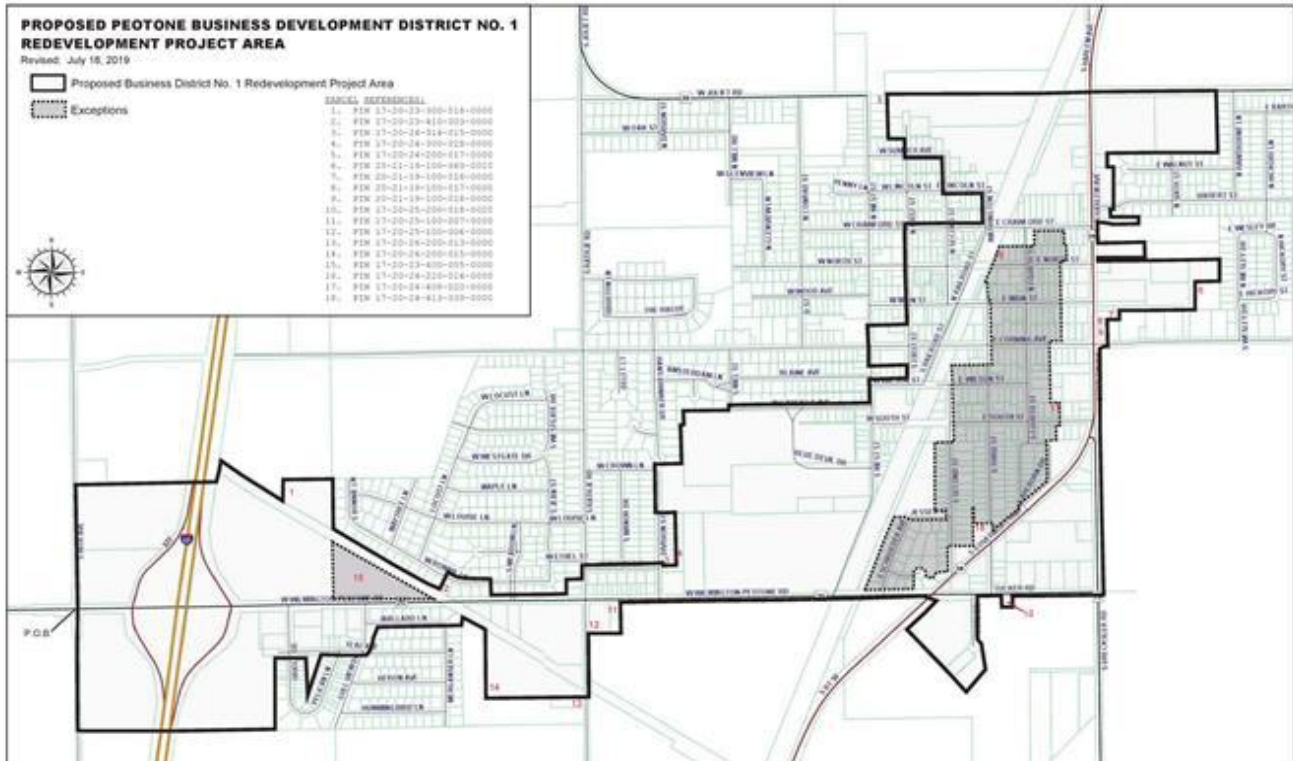
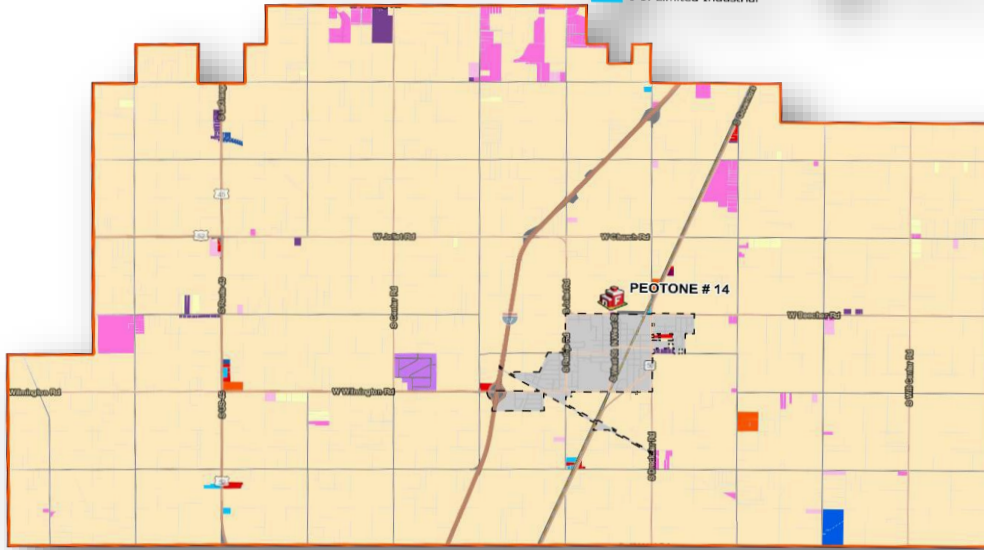
Village of Peotone Parcel Property Classes



# Zoning

## Will County Zoning

- A-1: Agricultural
- A-2: Agricultural-Residential
- C-4: Highway Commercial
- C-6: Recreation Commercial
- E-1: Residential Rural Estate
- E-2: Residential Estate
- I-1: Limited Industrial
- I-2: General Industrial
- I-3: Intensive Industrial
- Municipality
- R-1 thru 5: Residential Single Family
- R-1 (Proposed)
- R-6: Residential-Multi-family



Proposed Village of Peotone - Business Redevelopment Project Area





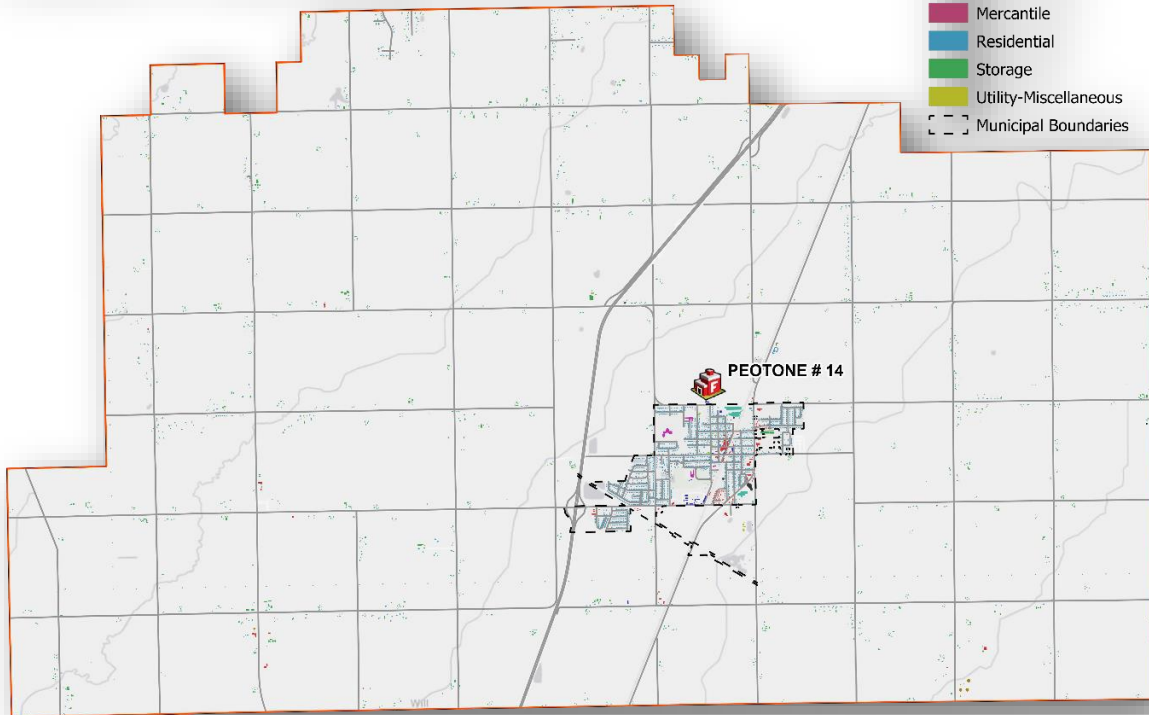
# Building Type Counts / Structure Inventory

## Building Type Counts

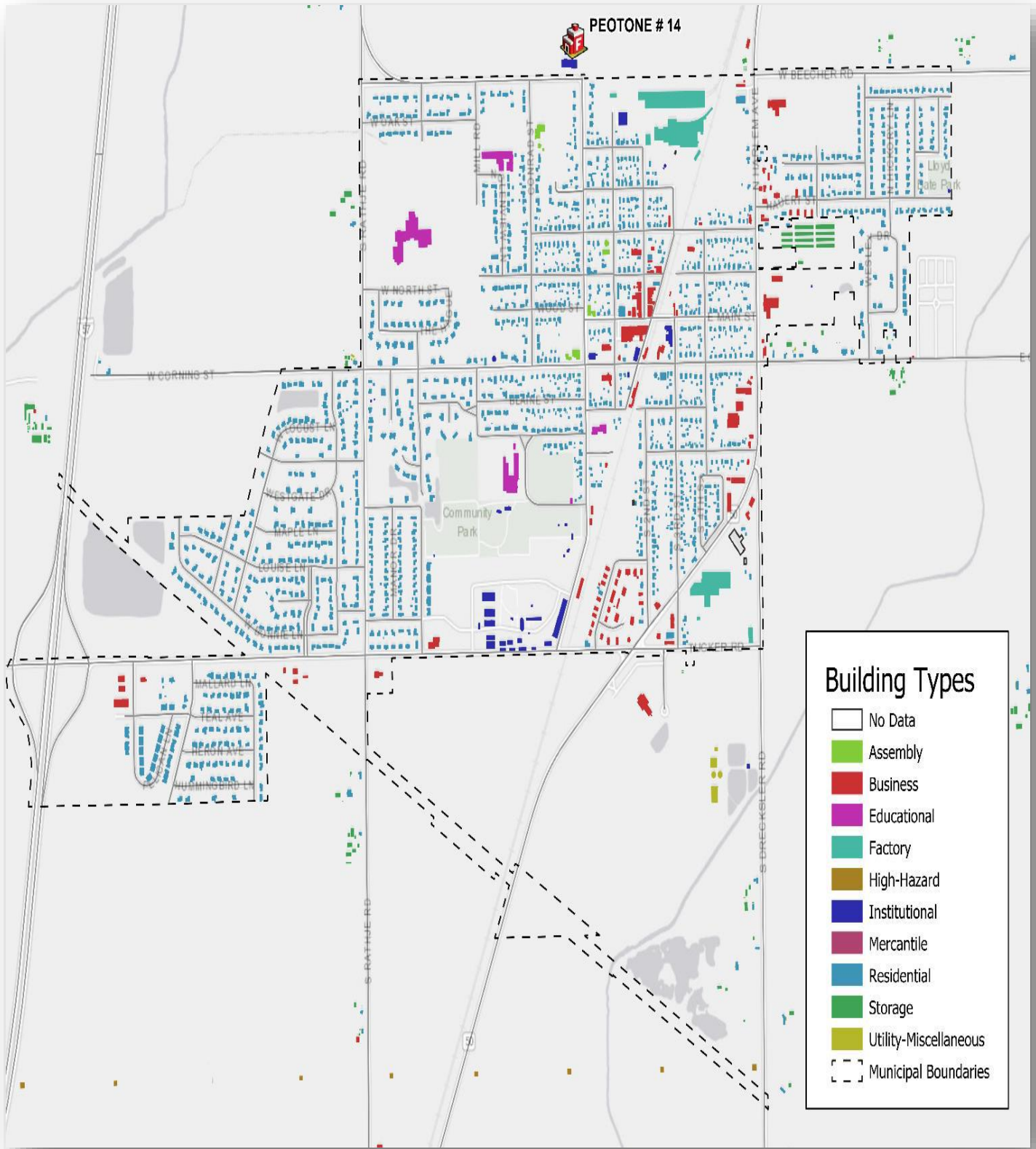
Assembly: 10	High-Hazard: 124
Business: 163	Mercantile: 2
Educational: 6	Residential: 2,530
Factory: 10	Storage: 2,533
Institutional: 44	Utilities/Misc.: 459

## Building Types

- No Data
- Assembly
- Business
- Educational
- Factory
- High-Hazard
- Institutional
- Mercantile
- Residential
- Storage
- Utility-Miscellaneous
- Municipal Boundaries



Downtown Village of Peotone



**Building Types**

- No Data
- Assembly
- Business
- Educational
- Factory
- High-Hazard
- Institutional
- Mercantile
- Residential
- Storage
- Utility-Miscellaneous
- Municipal Boundaries

Village of Peotone Building Types

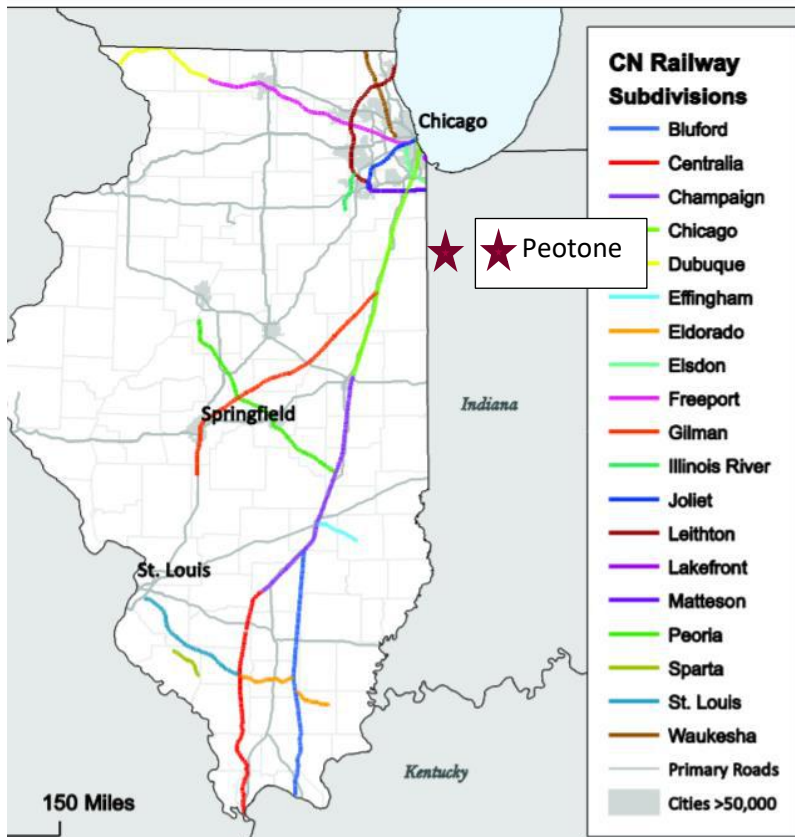






## Trains

Twenty-One (21) Freight trains carrying **78,597 cars (annually)** with hazardous cargo (product listing available) cross the District as well as two (2) Commuter (Amtrak) with **718 passengers per day (262,000 annually)**. There are nine (9) grade rail crossings within the District.



The train line traversing through the District is owned

**DAILY TRAIN ACTIVITY:**  
**21 Freight**  
**2 Commuter**

by Canadian National (CN) and is considered part of the Chicago Subdivision. Per CN – “This Illinois Central line extends a total of 123.4 miles between Bridgeport Yard in Chicago to Champaign. Amtrak has trackage rights over the entire line, and NS has trackage rights between Fordham and Gilman. CN’s Markham Yard, near Homewood, is located on this line. This line connects with UP at 31st Street; the Belt Railroad of Chicago at 95th Street; CN’s Gilman Subdivision at Harvey; CN’s Matteson Subdivision at Matteson; NS at Fordham; CN’s Gilman Subdivision at Gilman; and NS and the Kankakee, Beaverville & Southern Railroad at Kankakee. The line continues as the Champaign Subdivision south of Champaign. The line is a double track between Bridgeport and Stuenkel and a single-track south of Stuenkel. **Maximum speeds are 79 mph**, and CTC controls train operations.

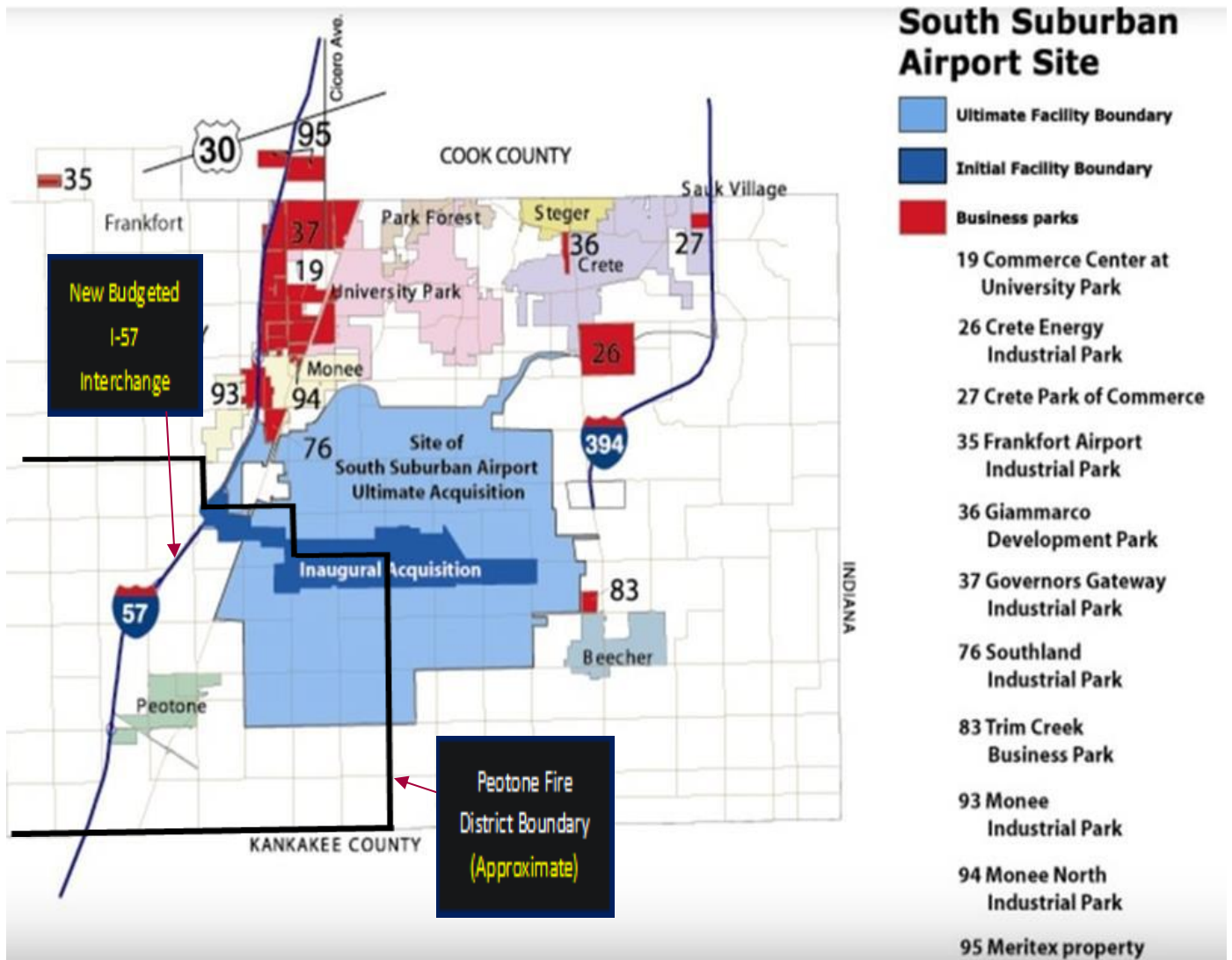
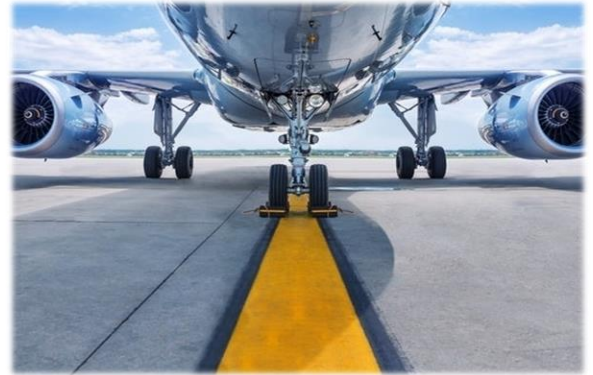
Illini and Saluki Routes Amtrak operate the Illini and Saluki Routes, which each make a round trip daily between Chicago and Carbondale. Illini trains leave either Chicago or Carbondale in the morning and arrive at the opposite terminus in the early afternoon. Saluki trains leave either Chicago or Carbondale in the afternoon and arrive at the opposite terminus in the evening. The Illini and Saluki routes serve the following intermediate stations: Homewood, Kankakee, Gilman, Rantoul, Champaign-Urbana, Mattoon, Effingham, Centralia, and DuQuoin. The Illini and Saluki Routes span 310 miles between Chicago and Carbondale over tracks that the Illinois Central (Canadian National) owns. The route is displayed in the accompanying figure. The Illini and Saluki Routes travel time between Chicago and Carbondale is approximately five and a half hours.”

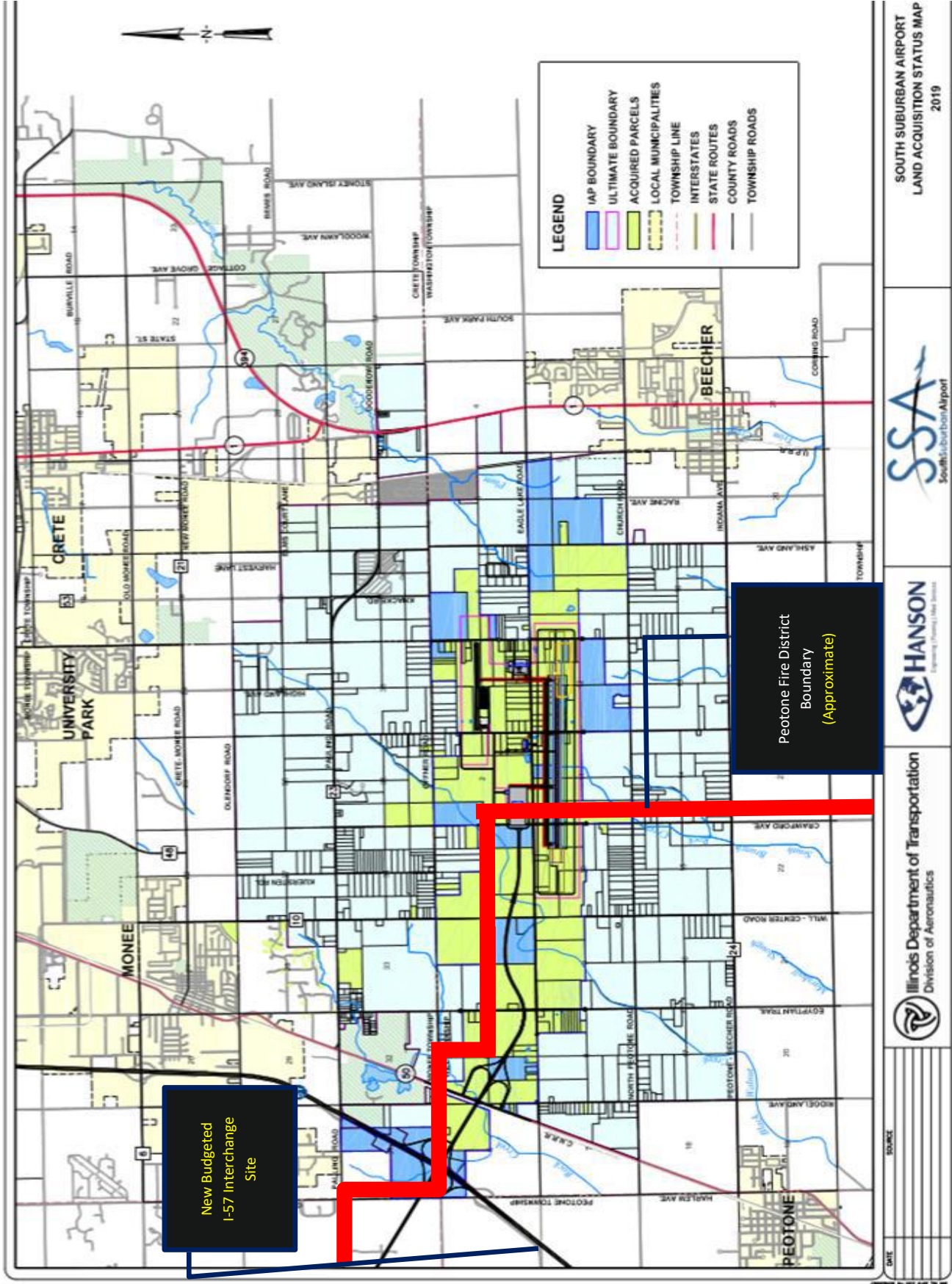




## Planes

Just north and east of the District lays the proposed “South Suburban” Airport, which **may significantly impact the District** if completed and becomes Chicagoland’s third regional airport. So far, it is in the planning phases. However, in June 2019, the State of Illinois authorized the **\$162 million** development of an interchange from I-57 to Eagle Lake Road, which is part of the District’s northern boundary.







**SECTION 2 - Programs & Services**



**SECTION 2**

Programs  
& Services





The Peotone Fire District operates out of 1 Fire Station located on the north side of the Village of Peotone, providing Fire/Rescue/EMS/Hazmat emergency response capabilities as well as non-emergent service calls. There are many programs effective within the all-hazards response model implemented within the District and are conducted within all divisions to support the mission and vision of the District. The District responds to diverse types of fires and other service requests, including EMS and Rescue/Special Operations (HazMat, Technical Rescue, Water Rescue).

## Communications

Currently, the District contracts through Laraway Communications Center in Joliet, IL. It is a newer (2017) regional dispatch facility providing 911 service for 31 fire and police agencies as part of a state mandate requiring consolidation of 50% of Will County dispatch centers.



## Fire Suppression

The fires include but are not limited to single-family structures, multi-family structures, commercial buildings, strip malls, high rise occupancies, industrial facilities, vehicle fires, brush fires, and dumpster fires. Within these categories, the District strives to provide a standard of coverage that is unique to the structure, depending on criteria such as construction type, risk factors, response times, occupancy type, known hazards, and many others.

To provide 24-hour coverage for the many types of incidents that may occur and scenarios that can arise, the District offers a minimum of six (6) firefighter/medics from a roster of approximately 60 part-time personnel. It relies heavily on mutual aid for the full concentration of the Effective Response Force (ERF).

## EMS

Fire District has 37 **Paramedics** and 12 EMT's (**crossed trained as Firefighter/Medics**) that maintain certifications in various medical disciplines that exceed the Illinois Department of Public Health requirements and are under the direction of resource hospital Amita Saint Mary's in Kankakee.

The Emergency Medical Services (EMS) program responds to medical emergencies of the citizens and guests of the District, which is also most incidents the District responds to **(65%)**.



## Rescue

Rescue risks vary from an elevator removal to vehicle accidents to "pin-in" extrication required accidents. Special Operations includes all Technical Rescue types to Hazardous Material incidents.

Technical Rescue covers a wide range of incidents, including confined space rescue, trench collapse, rope or water rescue, and structural collapse.



## Special Operations:

Special Operations incidents are considered low frequency, high-risk responses for the District in HazMat, Technical Rescue, and Water Operations. Response requirements are met through a combination of on duty and automatic/mutual aid personnel.

### **Hazardous Materials**

The Hazardous Materials Program within the District responds to all types of hazardous materials incidents, including gas spills, natural gas/propane leaks, carbon monoxide, etc. The District may respond to events such as tanker rollovers, fixed facility incidents, and incidents within waterways. If the incident is beyond the level of capabilities of the on-scene crews, the incident upgrades to request a regional Haz-Mat Team response and specialized resources to mitigate the incident such as personnel/equipment from the Southwest Hazardous Materials Team (SWHMT).



### **Technical Rescue**

The Technical Rescue Program within the District can respond to all types of technical rescue incidents, including ice, swift water, trench, confined space, building collapse, rope, elevator, and vehicle extrication. The response level for technical rescue incidents is at the operations level, with technicians available for each rescue discipline at the regional team level. All members of the District receive training to the awareness/operations level for technical rescue responses per NFPA 1670, and the District is part of a regional team – C.A.R.T. (Combined Area Response Team). CART members train at the Technician level.



### **Water Operations**

Water rescue incidents have occurred within the District in the past, and there is a definite possibility of future events with the four (4) waterways and broad flood plains. The District has some personnel trained in the use of Cold-Water Immersion Suits, and Regional Technician level Teams are available through MABAS 19.





## Training

Training is paramount to the safety of the firefighters and citizens they protect. The District trains locally in-house at the Station, regionally through MABAS training events/centers, and State-sponsored classes.

<b>TRAINING – Hours Completed</b>	2017	2018	2019	<b>Total</b>	<i>Average</i>
62 members (approximately)					
Fire Training hours	4215	4540	4684	<b>13,439</b>	<i>4,480</i>
HazMat hours	696	692	692	<b>2,080</b>	<i>693</i>







## Community Risk Reduction

As part of the Fire District mission is being “committed to providing quality EMS and professional fire protection to meet the needs of our community. The District advances public safety through its fire prevention and education programs.” Therefore, it is committed to providing preventative services aimed to stop or minimize dangers to the people served before they occur.

Services other than Emergency “Operations” Response include Fire Prevention/Public Education (Community Risk Reduction), Fleet & Facility Maintenance, Training, EMS, & Administrative Support are all critical & essential components of an All-Hazard Emergency Service delivery program.

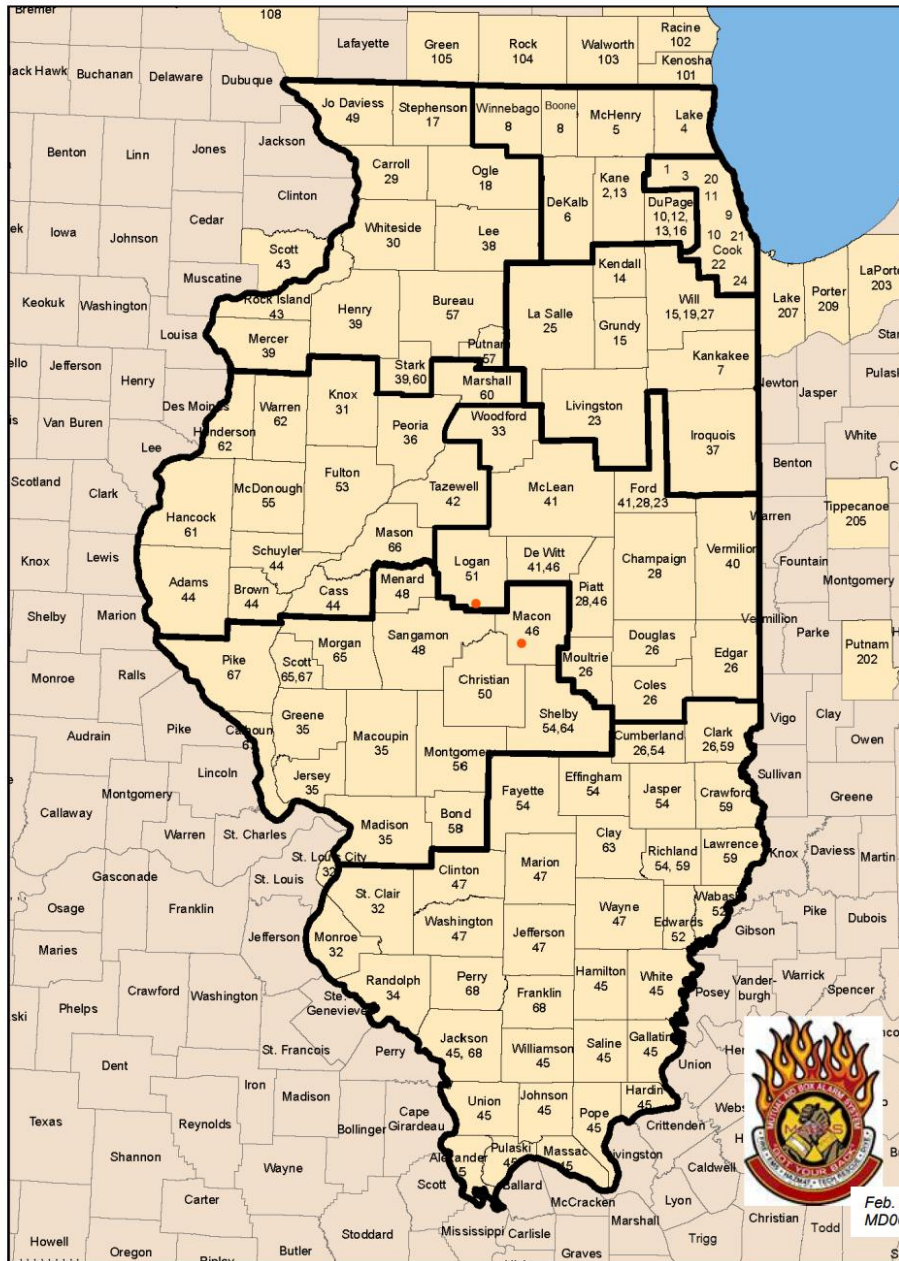
COMMUNITY RISK REDUCTION	2017	2018	2019	TOTAL 2017-19	Average
<b>FIRE PREVENTION</b>					
Commercial Structures	161	161	163	485	162
Fire Inspections	42	35	34	111	39
% of Inspected	26%	22%	21%	23%	24%
Re-Inspections	12	7	9	28	12
Violations	10	7	9	26	12
Violations corrected	9	7	9	25	11
Alarms Tested	14	10	13	37	13
Sprinklers Tested	1	2	0	3	2
Pre-plans completed	2	2	37	41	11
<b>PUBLIC EDUCATION</b>					
Website views	1,974	2,104	N/A	4,078	2,002
Different page views	6,867	6,456	6,603	19,926	6,723
Facebook Likes	1,958	2,107	2,673	6,738	2,159
Facebook followers per week	1,833	833	856	3,522	1,347
Pre-K to 5th shared education	400	400	400	1,200	400
Open House	200-300	200-300	200-300	600-900	200-300
Scouts first aid					
Model Tech hazard house					
Food Drive					
Helping Hands of Peotone					
Halloween candy drive					





M.A.B.A.S. Division 19

MABAS Divisions by County



The District provides mutual aid to and receives mutual aid from other fire departments. Mutual aid received is noted in other areas of this report. Along with handling incidents within the District jurisdiction, the Peotone Fire Protection District is regularly requested to assist surrounding agencies with their incidents. The request may be to cover a fire station for subsequent incidents or to assist with personnel and equipment on the scene. A single incident can be taxing to the resources of any fire department, which has resulted in mutual aid agreements pre-arranging the assistance before an incident and specifying who responds with what personnel, apparatus, and equipment.

The Peotone Fire Protection District is a member of **MABAS Division 19** – one of twelve (12) fire agencies. Frankfort, Homer Township, Lemont, Lockport Township, Manhattan, Mokena, New Lenox, East Joliet, Orland, Palos, and Palos Heights Fire Districts comprise the remainder of MABAS 19.





## **MABAS-IL**

*This section is verbatim from the MABAS website to provide a general overview of the organization.*

### **MABAS Mission Statement**

MABAS-Illinois serves local fire agencies, MABAS Divisions, State of Illinois departments, and Cook County UASI-DHSEM by providing a systems-based resource allocation and distribution network of robust traditional and nontraditional Fire-EMS-Rescue and Special Operations teams for emergency and sustained response within and outside of the State of Illinois. The accomplishment of the services requires cooperation, standardization, reliability, partnering, brokering, and ongoing communication and compliance with customer specifications and expectations. Customer trust and reliance on the MABAS system is built upon personal relationships, credibility, and ongoing customer support.

### **MABAS Purpose Statement**

The Mutual Aid Box Alarm System (MABAS) provides rapid emergency response and sustained operations when a jurisdiction or region is stricken by an overwhelming event generated by human-made, technological, or environmental threats. In response, MABAS will mobilize and deploy a sustained fire, emergency medical services (EMS), hazardous materials, technical rescue, water rescue, urban search & rescue, and incident management and assistance team resources to prevent the loss of life, human suffering, and further damage to property.

MABAS is a statewide mutual aid system, which has been in existence since the late 1960s. Pre September 11th, MABAS was heavily rooted throughout northern Illinois. Since September 11th, MABAS has rapidly grown throughout the State of Illinois as well as Wisconsin, Indiana, and Michigan and parts of Iowa and Missouri. Day-to-day MABAS extra alarms are systematically designed to provide the speed of response of emergency resources to the stricken community during an ongoing emergency. Declarations of Disaster provide a MABAS sustained system of response on top of daily mutual aid activations. Today MABAS includes approximately 1,175 of the state's 1,246 fire departments organized within 69 divisions. MABAS divisions geographically span an area from Lake Michigan to Iowa's border and south almost into Kentucky. Wisconsin divisions also share MABAS with their Illinois counterparts. The cities of Chicago, St. Louis, and Milwaukee are also MABAS member agencies. MABAS has expanded into all 102 Illinois counties.

MABAS includes approximately 38,000 of Illinois' 40,000 firefighters who staff emergency response units, including more than 1,600 fire stations, 2,735 engine companies, 500 ladder trucks, 1,300 ambulances (many paramedic ALS capable), 250 heavy rescue squads, and 1,000 water tenders. Fire/EMS reserve (back-up) units account for more than 1,000 additional emergency vehicles.

MABAS also offers specialized operations teams for hazardous materials (40 teams), underwater rescue/recovery (15 teams), technical rescue (39 teams), and a state-sponsored urban search and rescue team. An additional element of resources is the certified fire investigators, Incident Management Team members, and fleet support mechanics, which can be "packaged" as mobile support teams aiding with larger-scale incidents requiring complicated and time-consuming efforts beyond capabilities of most agencies.

MABAS is a unique organization in that every MABAS participant agency has signed the same contract with its 1,100 plus counterpart MABAS agencies. As a MABAS agency, you agree to standards of operation, incident command, minimal equipment staffing, fireground safety, and on-scene terminology. MABAS agencies,



regardless of their geopolitical origin, can work together seamlessly on any emergency scene. All MABAS agencies operate on a standard radio frequency (IFERN) and are activated for response through pre-designed "run" cards each participating agency designs and tailors to meet their local risk needs. MABAS also provides mutual aid station coverage to a stricken community when their fire/EMS resources are committed to an incident for an extended period.

MABAS extra alarms are commanded by the stricken community, and dispatch control is handled through the stricken community's MABAS division dispatch center. Over 800 MABAS locally controlled additional alarm incidents occur annually throughout the 69 divisions of Illinois MABAS. Existing Illinois statute regarding a Declaration of Disaster allows the Governor to mobilize state assets under the direction of IEMA. Through a memorandum of understanding between IEMA and MABAS, fire, EMS, and special operations resources can be activated as a State of Illinois asset when a Declaration of Disaster is initiated. Activation of the Statewide Plan through IEMA is designed to provide a quantity of response for sustaining incident operations. MABAS also offers various specialty equipment and apparatus staged strategically throughout the State available to any MABAS Department upon request.





### I.S.O.

Insurance Service Office (ISO) provides a broad range of insurance, statistical, actuarial, and claims information. ISO utilizes a Public Protection Classification (PPC™) tool to rate communities against fire losses. ISO evaluates data in categories of fire suppression, emergency communication, water supply, and risk reduction activities.



The process results in a ranking system that reflects District performance on a scale of 1-10, with one being the best.

In 2019, ISO rated **Class 4** for the entire District.

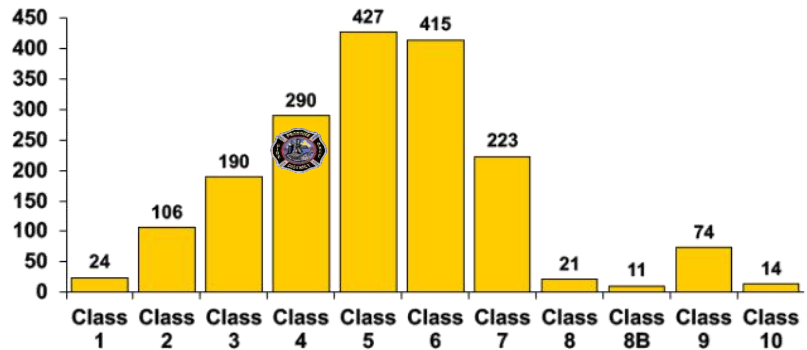
### Determining the PPC for a Community

ISO evaluates Dispatch, the Fire Suppression capabilities of the District, and water system infrastructure during grading. Strengths and weaknesses relative to criteria in each category are utilized in determining the PPC. This system allows communities with different combinations of strengths and weaknesses to receive the same PPC.

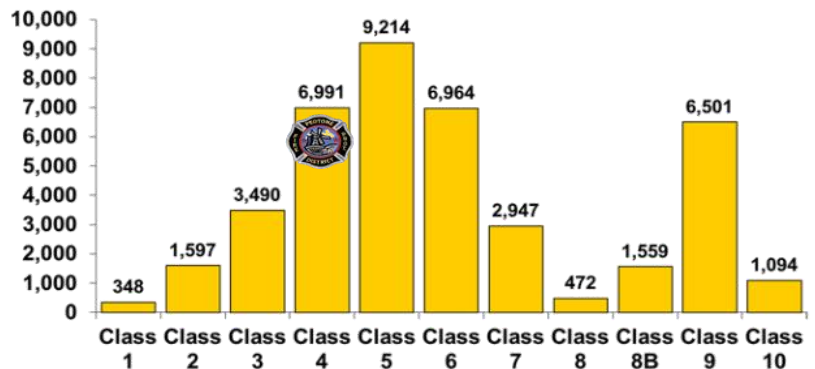
Major items considered in grading are:

- Telephone Service
- Telecommunication Operators
- Dispatch Center alerting systems
- Engine Companies
- Reserve Engines
- Pump Capacity
- Ladder Companies
- Reserve Ladders
- Distribution of companies
- Number of personnel responding
- Training frequency and areas
- Water Supply Systems
- Hydrant Type and Size
- Hydrant Maintenance and Testing

Illinois



Countrywide





### The Effect of PPC on Insurance Premiums

ISO provides insurance companies with PPC information and associated details, including fire station locations, response area boundaries, the location of hydrants, and other water supply details. However, because insurance companies, not ISO, establish the premiums they charge to policyholders, it is difficult to generalize how an improvement (or deterioration) in PPC will affect individual policies, if at all.

ISO's studies have consistently shown that, on average, communities with superior fire protection have lower fire losses than do communities whose fire protection services are not as comprehensive. Consequently, PPC does play a role in the underwriting process for many insurance companies and, as such, can help keep insurance premiums low. **Therefore, improving Class ratings is an outcome and benchmark measure that is well within the District's reach. As such, the District is planning to achieve a higher rating at the next review.**

FSRS Feature	Earned	Total Possible
Emergency Communications	9.38	10
Fire District	27.78	50
Water Supply	29.31	40
Community Risk Reduction	2.88	5.50
Divergence	-3.54	
<b>Total Points</b>	<b>65.81</b>	<b>100</b>

Class	Percentage Credited
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99



**SECTION 3 - All Hazard Risk Assessment**



**SECTION 3**

All Hazard  
Risk  
Assessment



**SECTION 3**



## All Hazard Risk Assessment

The District is primarily considered rural, with most of the District's seventy (70) square miles classified as farmland. The Village of Peotone comprises approximately 1.8 square miles, and Interstate 57 dissects the District North to South as well a busy freight & commuter rail line traversing parallel to the Interstate.

Peotone Fire District provides All-Hazards response services to the community, including both natural and man-caused events. The definition of key terms and their relationship to the risk assessment process are essential in conducting and interpreting a comprehensive risk assessment within an All-Hazards environment. An All-Hazards approach is inclusive of prevention, preparedness, response, and recovery actions that will meet a full range of threats and hazards. All-Hazards include man-caused, natural, and technologically-caused incidents. The infrastructure consists of interdependent systems and networks that contribute to society and the government at any level. Critical infrastructures are those systems that are vital to the community, region, state, nation, or if they were unable to function.

Risk definitions include:

- **Risk:** *potential for an unwanted outcome resulting from an incident, event, or occurrence as determined by the likelihood and associated consequences.*
- **Threat:** *natural or human-made occurrences or actions that have the potential to harm life and property.*
- **Hazard:** *natural or human-made sources cause harm or difficulty.*
- **Vulnerability:** *physical feature or operational attribute that renders an entity open to exploitation or susceptible to a given hazard.*
- **Consequence:** *the effect of an event, incident, or occurrence, including the number of deaths, injuries, and other human health issues, along with economic, impact, and different negative results on society.*
- **Probability:** *the mathematical likelihood of an event occurring.*







## Risk Factors

Probability can be calculated through the following formulas:

- ✚ **Probability** = Threat x Vulnerability
- ✚ **Consequences** = the sum of human, economic, and psychological impacts

Risk management is the continual process of identification and evaluation of risk. Control measures are selected, implemented, and measured for performance. A continuous loop provides feedback on performance and areas for improvement to further reduce and control risks. Predictable harm can be managed down through directed efforts to reduce risk.

Risk assessment is defined in *NFPA 1600, Standard on Disaster/Emergency Management and Business Continuity/Continuity of Operations Programs*:

“A process for identifying potential hazards/risk exposures and their relative probability of occurrence; identifying assets at risk; assessing the vulnerability of the assets exposed and quantifying the potential impacts of the hazard/risk exposures on the assets. Periodic reassessment is needed when changes to the entity occur. Reassessment is also necessary because hazards/risk exposures change over time, and the collective knowledge of hazards/risk exposures develops over time.”

Risk can also be viewed through quantifying or measuring an identified risk in consideration of its probability and severity. Two or more risks may interact, resulting in a more significant impact. Risk assessments remain complex, even when being reduced to a manageable set of factors. Historical data is a prime resource for risk assessment. While rare or unusual events can and will happen, historical patterns are a reasonably accurate indicator of future events.

Risk cannot be eliminated; however, they can be avoided. Risk can be transferred through insurance. Residual risk can be accepted. Risk/benefit-cost analysis is required to determine the level of risk that a community is willing to have as a threshold. Elected officials determine the levels of risk acceptable, and staff takes appropriate action to allocate resources supplied to meet determined risk levels.

The District has conducted an occupancy community risk assessment to identify structural risks, potential impacts, and levels of acceptance. Resource distribution and concentration are continually evaluated in efforts to reduce risk and resulting harm.

The United States Fire Administration provides an approach to developing a successful risk management plan:



1. Risk Identification
2. Risk Evaluation
3. Risk Control Techniques
4. Risk Management Monitoring

Identification, assessment, and control are addressed in this section.

Occupancy factors that were evaluated included:

- Construction type
- Built-in fire protection systems
- Life safety risk

### Community Risk Assessment

The level of service provided by a Fire/EMS organization based upon the District's ability to manage various types and sizes of emergencies that can be reasonably expected after conducting a risk assessment. The first step in the process identifies the scope and magnitude of the risks: fire, EMS, specialized rescue, or other events that threaten life safety, property, and environmental losses. The analysis is based on historical and potential future losses.

An All-Hazards approach to Risk Assessment is completed through a comprehensive analysis of District hazards. The Risk Assessment is conducted in two parts:

- Risks specific to the District, including Structure Fires, Emergency Medical Incidents, and Special Operations.
- Large-scale events are community risks that occur in and outside of the geographical boundaries of the District. These risks include man-caused, natural, and technological developments that cause disasters.

The following components were considered during this analysis:

- **Probability** – the likelihood that an event will occur within a given period. It is an estimate of a future event based on historical trends or patterns.
- **Consequence** – the severity of the resulting situation from an event. Life safety and economic risk are both considered. Life safety is inclusive of risk to occupants and responders. Economic impact considers the loss of property, the revenue of assets.
- **Occupancy risk** – assess the relative risk to life and property resulting from an event in a specific or occupancy class. Occupancy risk can be impacted by sub-factors, such as construction type and occupant mobility.
- **Planning zones** – are geographic areas utilized during analysis to relate to station response areas or similar representations. PFPD has determined station response areas as planning tools for analysis. A

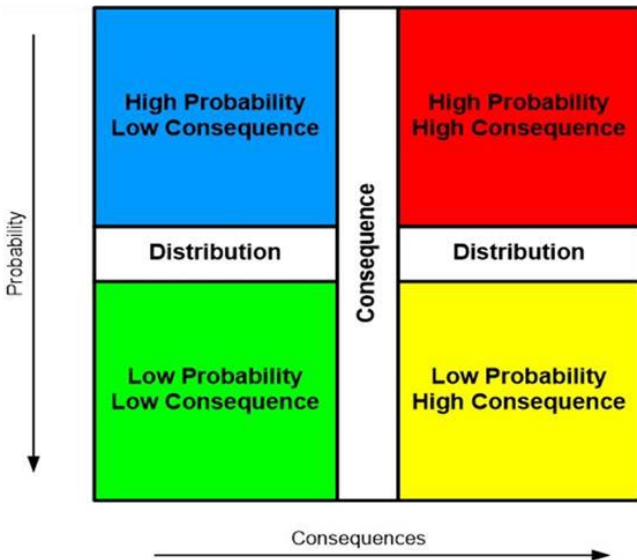


station's 1<sup>st</sup> due response District is studied for transportation networks, populations, density, topography, construction types, occupancy risk, and current service levels.

- **Community profile** – attributes of the community served that is uniquely based upon demographics, socioeconomic, occupancy risk, and both historical and current service levels.

### Risk-Based Matrix

The Risk-Based Matrix model reflects the considerations of risk assessment in the District's response areas. The probability of an event occurring is always present. The frequency of occurrence can range from low to high. Any event has consequences ranging from high to low. Resources required in event management vary based upon the event and community commitment of resources.



Each quadrant illustrates the probability and consequences of any event.

- Low probability, low consequences
- Low probability, high consequences
- High probability, low consequences
- High probability, high consequences

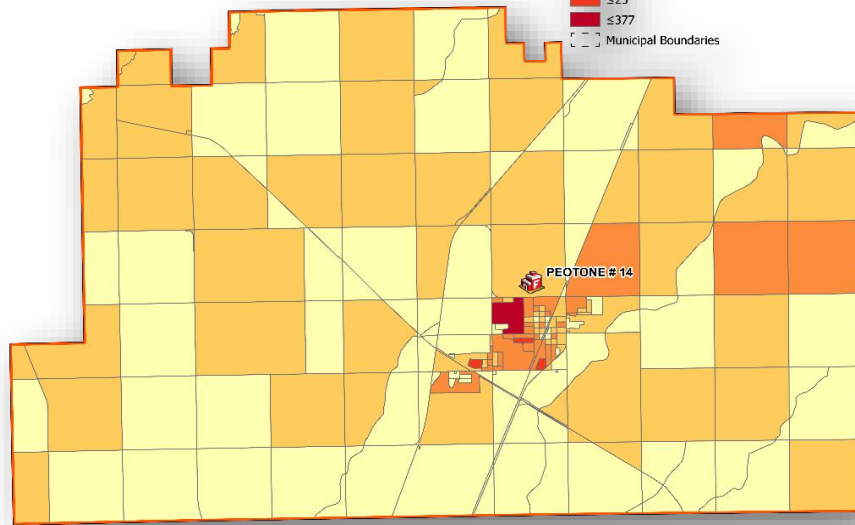
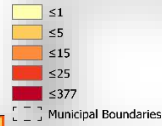


### At-Risk Age Groups

At-risk age groups are those that are likely dependent on others and may need additional assistance in emergencies. As such, they tend to increase the demand and call volume for EMS.

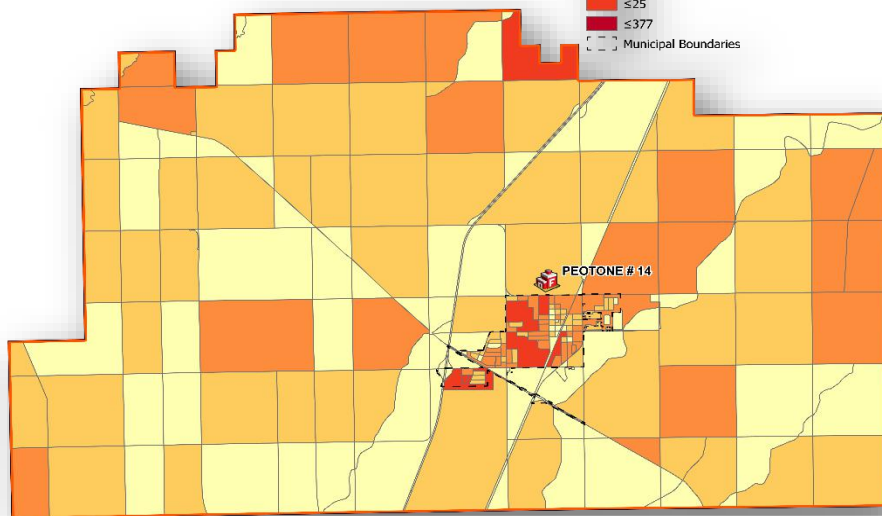
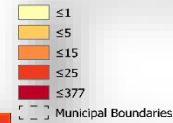
**Total Population Over 65: 618 (11%)**

2000 Census Blocks -  
Population Count older than 65



**Total Population Over 65: 894 (13%)**

2010 Census Blocks -  
Population Count older than 65



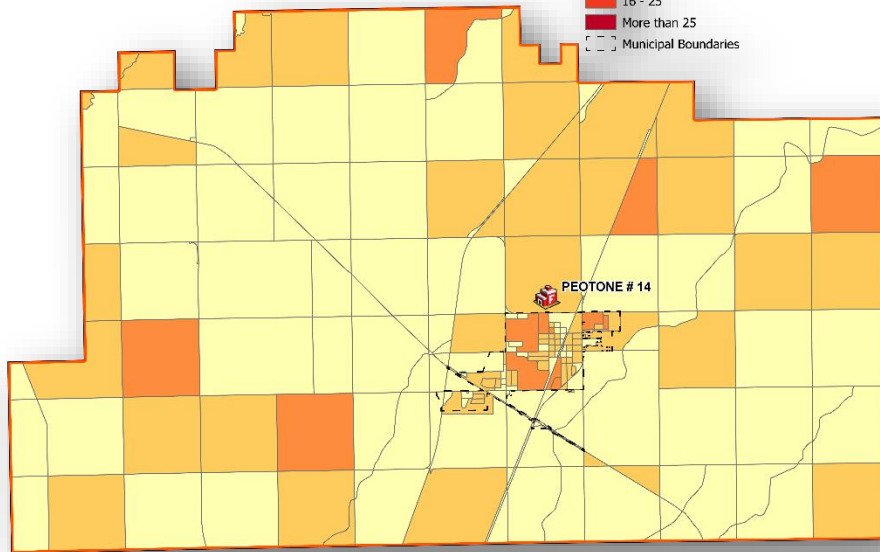


# At-Risk Age Groups and Population Shift (2000-2010)

**Total Population under 5: 354 (6%)**

2000 Census Blocks-  
Population Count younger than 5

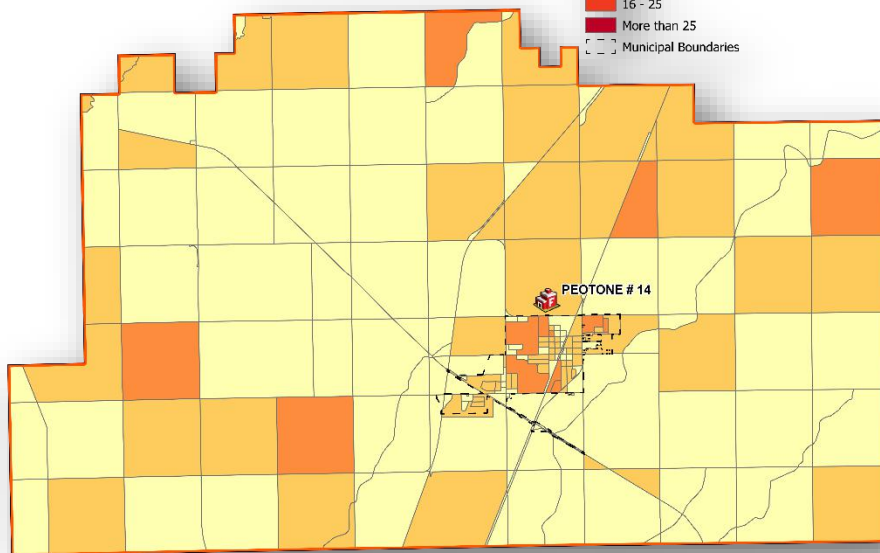
- One or less
- 2- 5
- 6 - 15
- 16 - 25
- More than 25
- Municipal Boundaries



**Total Population under 5: 382 (5%)**

2010 Census Blocks-  
Population Count younger than 5

- One or less
- 2- 5
- 6 - 15
- 16 - 25
- More than 25
- Municipal Boundaries










### Flooding

Given that most of the District is primarily flat and open land, then there is potential for flooding as four creeks run through the District as well, and the 500-year flood map is displayed below.

As noted on the map, **the current Fire Station is in a flood plain** and did experience near flooding as recently as September 2019, shown below.

#### FEMA Flood Hazards

-  1% Annual Chance Flood Hazard
-  Regulatory Floodway
-  500-year Floodplain, area of minimal flood hazard.
-  Waterways
-  Municipal Boundaries



Flooding near Fire

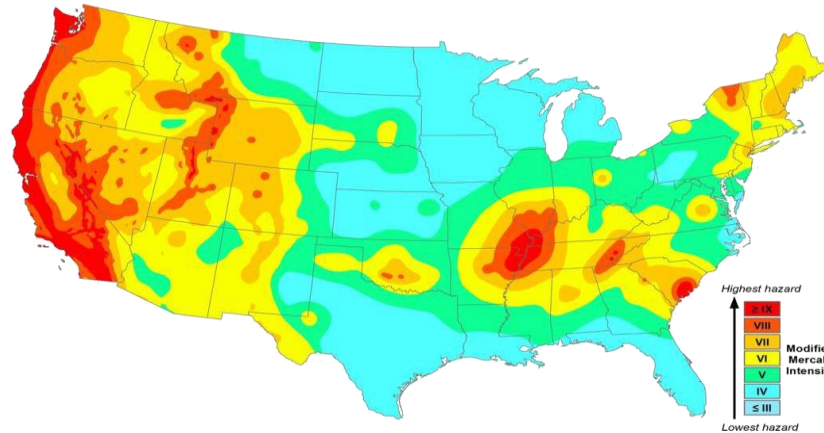
September 2019

Station 14 -



## Geological & Weather Hazards

In the latest report issued by the United States Geological Survey, the potential earthquake risk in Illinois has risen. Significant fault lines are present in the area with earthquakes that have occurred in areas of limited or no development. Due to the estimated risk of earthquakes, FEMA and IEMA (Illinois Emergency Management District) have developed plans and conducted exercises in preparation.



USGS map showing the intensity of potential earthquake ground shaking that has a 2% chance of occurring in 50 years

### Earthquake Index, #1182



The earthquake index value is calculated based on historical earthquake events data using USA.com algorithms. It is an indicator of the earthquake level in a region. A higher earthquake index value means a higher chance of an earthquake.

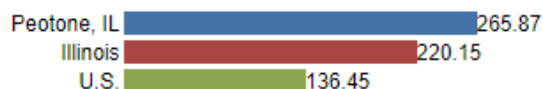


### Other Weather Extremes Events

A total of 3,547 other weather extremes events within 50 miles of Peotone, IL were recorded from 1950 to 2010. The following is a breakdown of these events:

Type Count	Type Count	Type Count	Type Count	Type Count
Avalanche: 0	Blizzard: 2	Cold: 42	Dense Fog: 28	Drought: 23
Dust Storm: 0	Flood: 381	Hail: 926	Heat: 53	Heavy Snow: 49
High Surf: 0	Hurricane: 0	Ice Storm: 12	Landslide: 0	Strong Wind: 55
Thunderstorm Winds: 1,677	Tropical Storm: 0	Wildfire: 2	Winter Storm: 77	Winter Weather: 29
Other: 191				

### Tornado Index, #216



The tornado index value is calculated based on historical tornado events data using USA.com algorithms. It is an indicator of the tornado level in a region. A higher tornado index value means a higher chance of tornado events.



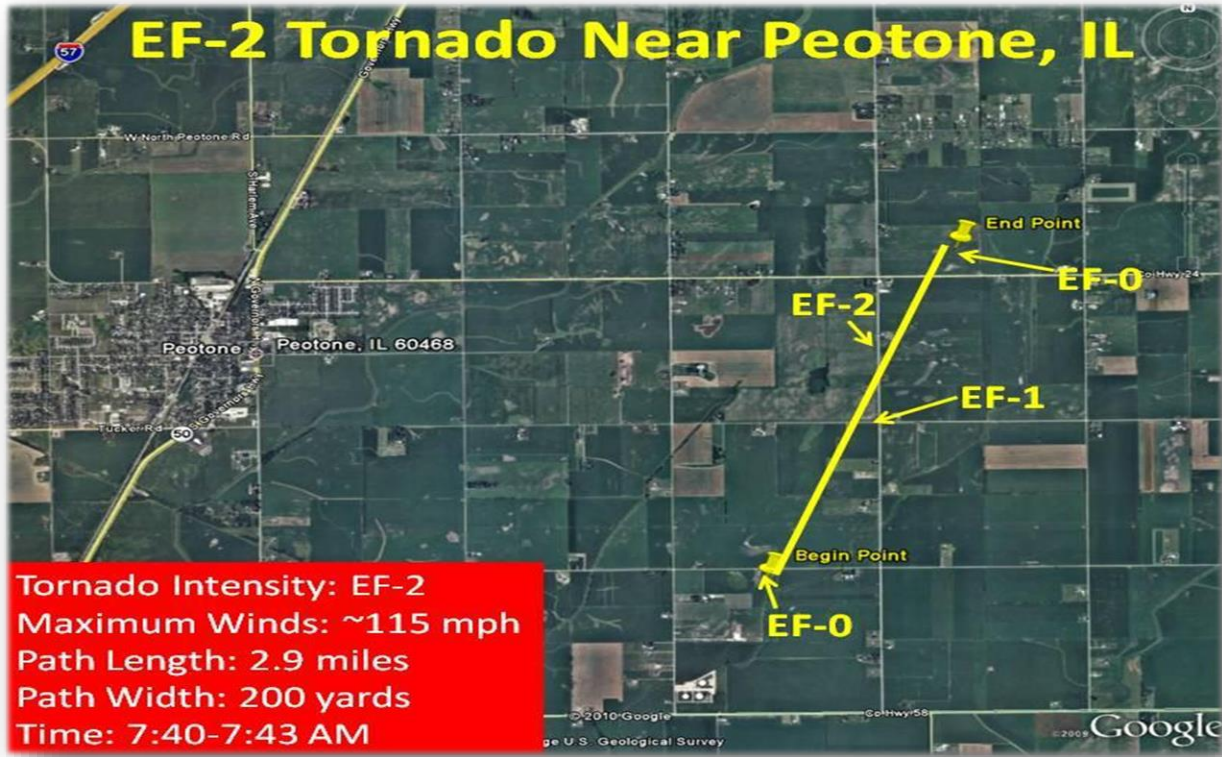
## Historical Tornado Events

A total of 99 past tornado events that had recorded magnitude of 2 or above found in or near Peotone, IL.

This chart below describes tornadic events within 12 miles of the District. **A complete list is in the appendix.**

Distance (miles)	Date	Magnitude	Start Lat/Log	End Lat/Log	Length	Width	Fatalities	Injuries	Property Damage	Crop Damage	Affected County
3.7	2010-10-26	2	41°18'N / 87°44'W	41°20'N / 87°43'W	2.00 Miles	200 Yards	0	2	500K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down about 4 miles east of Peotone. The tornado produced its most intense damage along South Will Center Road, about halfway between Corning Road and Peotone-Beacher Road, removing a house's roof, collapsing exterior walls on the second floor of the house, and completely destroying a garage and three other outbuildings. Two teenage boys were injured in the house. Four power poles were also downed just northeast of the area along Peotone-Beecher Road. Additional EF1 and EF0 damage was found along a path running southwest toward Kennedy Road. This damage consisted of collapsed outbuildings, snapped cedar trees, and damage to homes. One home on Corning Road was pushed off its foundation and the chimney collapsed. EPISODE NARRATIVE: A line of strong to severe thunderstorms moved across northern Illinois during the morning hours of October 26th. Three tornadoes were reported along with damaging winds.</p>											
3.8	1961-04-23	3	41°21'N / 88°13'W	41°19'N / 87°31'W	36.30 Miles	33 Yards	0	4	2.5M	0	Will
5.4	2008-06-07	2	41°24'N / 87°51'W	41°25'N / 87°47'W	4.00 Miles	150 Yards	0	0	500K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down along Paulding Road just west of Center Road, south of the Green Garden Country Club. A garage was leveled and a house had part of its roof torn off and damage to the second story exterior walls. At the southwest corner of Bruns and 88th Avenue, barns and trees were damaged. The tornado continued along Bruns Road between 80th and 88th Avenues. On the south side of Bruns Road, a barn and an outbuilding were completely destroyed. The house lost a large section of the southeast wall on the second floor. Another house was heavily damaged with siding and a west wall blown off. North of Bruns Road, there was a barn that was practically destroyed with only a partial wall standing. A horse barn was destroyed with the stables intact and horses still standing in them. In the backyard of the next home, there were trees blown down and debris, such as trailers and a small rowboat were blown into the creek immediately north of Bruns Road. A chain link fence was pulled from the ground. Many trees were uprooted and blown over. Power lines were also blown down. The next house had damage to two garages. The doors were blown out of both garages and the roof of one garage was severely damaged. The house had siding and roof shingles blown off. A house at the east end of this section on Bruns Road, closest to 80th Avenue, had siding blown off and chimney damage. The tornado ended southwest of the intersection of Harlem Avenue and Manhattan-Monee Road, where there was minor tree damage. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
5.8	2008-06-07	2	41°21'N / 87°55'W	41°22'N / 87°53'W	2.00 Miles	400 Yards	0	0	50K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down northeast of Wilton Center, just north of Route 52 and east of Elevator Road, where there was minor tree damage. Based on photos and eyewitness reports, the tornado grew to about 400 yards wide but remained in open fields with few structures or trees in its path. At 120th Avenue, a garage was destroyed and all that remained was a cinder block base. A metal outbuilding was severely damaged. The tornado ended near Manhattan-Wilton Road, just west of Route 45. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
8.5	2008-06-07	2	41°26'N / 87°46'W	41°28'N / 87°44'W	2.00 Miles	150 Yards	0	6	5.5M	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado developed near Ridgeland Avenue and Dralle Road, where a high tension metal truss tower collapsed and four others were damaged. Power lines blocked Interstate 57. The tornado destroyed a mobile home and outbuildings east of Ridgeland between Dralle and Stuenkel Roads before crossing Interstate 57. The tornado was rated EF2 in this area. Six people were injured in vehicles on Interstate 57. Several cars were damaged and a semi trailer was completely destroyed. East of Interstate 57 at Stuenkel Road, a large warehouse had bay doors blown in, much of the roof collapsed, and the west wall blown in. Utility poles were pushed over along South Central Avenue. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
11.5	2008-06-07	2	41°28'N / 87°44'W	41°30'N / 87°40'W	4.00 Miles	150 Yards	0	0	4.0M	0K	Cook
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado which touched down in northwest Will County, crossed Steger Road into Cook County, just west of Cicero Avenue. The tornado hit a subdivision on the northwest corner of Steger Road and Cicero Avenue. Large tree limbs were blown down and a couple trees were uprooted. Homes were</p>											





10/23/2010 – EF2 Tornado Touchdown

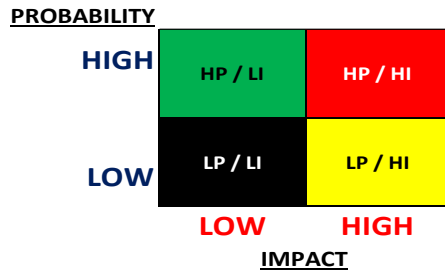




### Natural Event / Weather Risk Scoring

An additional scoring model utilized by the District to evaluate the risk of naturally occurring events was completed as below indicate the risks associated with natural events are primarily low to moderate.

NATURAL EVENT TYPE	PROBABILITY <i>Likelihood this will occur</i>  0 = N/A 1 = Low 2 = Moderate 3 = High 4 = Extreme	IMPACT / CONSEQUENCES			TOTAL IMPACT Human, Property, Business	AVERAGE IMPACT SCORE	PROBABILITY + IMPACT  Probability + Impact (average)
		HUMAN <i>Possibility of death or injury</i>  0 = N/A 1 = Low 2 = Moderate 3 = High 4 = Extreme	PROPERTY <i>Physical losses and damages</i>  0 = N/A 1 = Low 2 = Moderate 3 = High 4 = Extreme	BUSINESS <i>Interruption of services</i>  0 = N/A 1 = Low 2 = Moderate 3 = High 4 = Extreme			
Severe Thunderstorm	4	2	2	3	7	2.3	6.3
Extreme Winter/Ice Storm	4	2	2	3	7	2.3	6.3
Tornado	3	3	4	1	8	2.7	5.7
Temperature Extremes	3	2	1	3	6	2.0	5.0
Flood	3	2	3	3	8	2.7	5.7
Earthquake	1	3	4	1	8	2.7	3.7
Drought	2	2	1	1	4	1.3	3.3
Epidemic	1	4	1	4	9	3.0	4.0
<b>Totals</b>	<b>21</b>	<b>20</b>	<b>18</b>	<b>19</b>	<b>57</b>	<b>19</b>	<b>5.0</b>

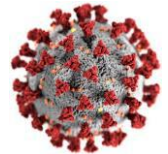


**Risk Assessment**  
 1-2 Low Threat  
 3-4 Moderate Threat  
 5-6 High Threat  
 7-8 Extreme Threat

The District is prepared for “All Hazard” responses and has plans in place to remain reliable and sustainable regardless of the environmental or large-scale incident. There are redundancies in place to keep operations always at the ready.

Risk assessment findings indicate **higher probability and consequence from naturally caused events.**

As of the writing of this SOC in March 2020, the United States is under a “National Emergency” (as well as the world) due to a **Pandemic from the COVID 19** (Novel Coronavirus) outbreak. At-Risk populations (>65) are being especially harmed. Currently, there are millions of confirmed cases worldwide, with hundreds of thousand deaths, and this number **will rise exponentially**. Unprecedented measures are taking place with US Borders shut to travel internationally, and mass closings of schools, sports, bars/restaurants, churches, theaters, and many businesses alike in an attempt to “social distance” to “flatten the curve” to postpone and minimize the spread that may take months. States have issued “stay home orders,” & only essential businesses are open. The US Economy has crashed to 2008 levels.



Crisis, such as this, will have a dramatic taxing effect on the Fire & EMS Services everywhere. Increased responses, PPE/exposure protection, extended hospital turn-around times, isolation, staffing, supply, and more issues may overwhelm the entire health care industry.



## Large Scale Incidents

Community risks exceed traditional fire and EMS to include significant scale events. In most cases, these events would be low frequency/severe consequence events on a community basis. Department of Homeland Security (DHS) methodology was utilized to conduct risk assessments on most anticipated events. Programs to reduce risk and increase preparedness capabilities can be performed as part of the large-scale event risk assessment process. Numerical scores were assigned in the assessment process allowing prioritization of risk reduction efforts.

The following assessment characteristics were utilized:

- Probability
- Vulnerability
- Onset speed
- Impact
- Preparedness
- Geographic size
- Potential for associated MCI
- Warning time
- Length of event
- Consequences

### ▪ Hazardous Materials Incident (HM - Low)

- Lower level HazMat responses are usually handled by local Fire Departments or regional teams. NFPA defines a Level 3 HazMat incident as one that is beyond regional or state capabilities. Level 3 incidents may require federal resources during response or cleanup. These incidents pose an immediate severe and long-term risk to the community as a result of the release of large amounts of hazardous materials. The threat from this type of event would likely result from a railroad car release. This is due to the number and type of HazMat transported through the community on the CN Rail line and Interstate 57 as well.



### ▪ Weapons of Mass Destruction Event (WMD - Low)

- WMD events are defined as involving chemical, biological, and radiological release and exposure. Chemical event symptoms begin immediately after the exposure. Radiological and biological events symptoms generally start up to 12 hours after exposure.



### ▪ Mass Violence Incident (MVI - Low)

- A Mass Violence Incident generally has ten (10) or more patients triaged as Yellow or Red. Mass Violence Incidents differ from Mass Casualty Incidents (MCI) in the MVI is intentionally caused by human action. MCI can result from non-intentional events such as a vehicle accident. MVI requires tight integration with law enforcement to stabilize the incident and care for victims. Areas and occupancies with large groups of people are soft targets for an MVI. The District has potential targets with MVI probability, including the County Fairgrounds and Flea Market, and numerous school events. Examples of these events are Active Shooter Hostile, explosive device, or as simple as car vs. a crowd.



### ▪ Large Scale Power Failure (PGF - Low)



- Heavy reliance on electrical power has created the potential risk of power grid failure. The power grid is owned, operated, and managed by a private entity. Isolated power failures occur during storms several times a year and are short-lasting. A large-scale grid failure would have a significant effect on service demands and associated consequences. The station has a generator powered by natural gas.

▪ **Public Health Incident (PH - Low)**



- An increase in public health incidents such as pandemics and viruses have been noted in the last few years, and just a historic one occurred in 2020 (COVID 19). Schools, colleges, and universities would be another likely location for the transfer of pandemic and virus materials and have been shut down as well as most other public locations. The effects of pandemics will increase service demands and may lower personnel availabilities due to exposure and resulting illness, longer hospital turnaround time, isolations, and supply issues, to name just a few.

▪ **Cyber Attack (CA – Low)**

- Targeted attacks of IT systems have been increasing worldwide. These attacks can include Denial of Service (DOS) and ransomware. Most fire service agencies have a high reliance on the use of IT systems for communication and records systems. As such, the District recently in 2019 hired a third-party IT vendor to update all hardware and software for the entire infrastructure.

	Future Frequency	Impact	Area Affected
Floods	Likely	Serious	Large
Severe Summer Storms	Likely-Frequent	Moderate	Community
Severe Winter Storms	Likely-Frequent	Moderate	Large
Tornado	Likely	Serious - Catastrophic	Community
Extreme Heat	Likely	Moderate	Large
Drought	Seldom	Moderate	Large
Earthquake	Seldom	Low-moderate	Community
Power Outage	Likely	Moderate-Serious	Community



## Risk Assessment for Service Level Classifications

Risk assessments were also conducted for the following primary service types:

- **FIRE**
- **EMS**
- **HAZMAT**
- **RESCUE/TRT/DIVE**

### FIRE RISK

Fire risk drives the number of personnel, apparatus, and critical tasks required in suppression operations. Fire suppression services involve a full-range response from single/multi-family residential to commercial, industrial, and special occupancies. Public and private schools, colleges, universities, houses of worship, and healthcare facilities are also covered. Fire response is not limited to fixed property but also incorporates mobile and wildland-urban interface.

**NATIONWIDE**

**80 % of all fire deaths occur in residential dwellings.**

**7 people die & 32 are injured every day.**

**Fire kills more people in the United States every year than all-natural disasters combined.**

(Home Fire Sprinkler Coalition, May 2013)

### FIRE INCIDENT RESPONSE SUMMARY

This is a summary of the four main classified fire types, according to NFIRS. These include structures (or fires inside a structure), vehicle, brush/vegetation (wildland), and other fires classified by NFIRS Types. Also listed is the historical data for fire ground injuries and death to both civilian and firefighter as well as dollar loss/save rates for the study period.

FIRE RESPONSES	2017	2018	2019	TOTAL	AVERAGE
Structure (fires in)	66	83	65	214	71
Vehicles	12	10	12	34	11
Brush/Vegetation	18	36	18	72	24
Other/Outside	2	7	5	14	5
<b>TOTAL</b>	<b>98</b>	<b>136</b>	<b>100</b>	<b>334</b>	<b>111</b>
FIRE DEATHS & INJURY	2017	2018	2019	TOTAL	AVERAGE
<b>CIVILIAN</b>					
Fire Death			1	1	1
Fire Injuries			2	2	2
<b>FIREFIGHTER</b>					
Fire Death	0	0	0	0	0
Fire Injuries	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>1</b>
FIRE LOSS	2017	2018	2019	TOTAL	AVERAGE
<b># STRUCTURE FIRES</b>	<b>6</b>	<b>5</b>	<b>7</b>	<b>18</b>	<b>6</b>
Fire Loss	\$320,801	\$91,020	\$1,552,200	\$1,964,021	\$654,673.67
Property Saved	\$700,500	\$460,000	\$1,049,500	\$2,210,000	\$736,666.67
<b>CONTAINED TO:</b>					
Pt of Origin	1	-	1	2	1
Room of Origin	3	3	2	8	3
Floor of Origin	1	1	-	2	1
Building of Origin	1	1	4	6	2
Beyond Building of Origin	-	-	-	0	

*Structure (fires in) numbers are higher than actual "Working" STRUCTURE FIRES – (considered hose lines deployed & \$ loss incurred)*



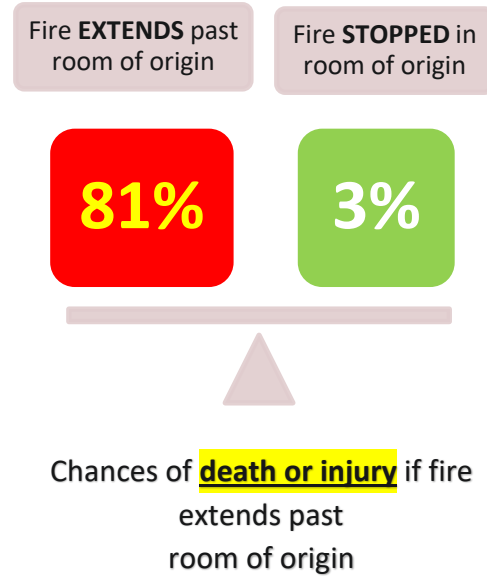
## Fire Spread

Limiting fire growth to the smallest area within an occupancy decreases risk to occupants & firefighters. NFPA statistics have also shown a decrease in property loss by limiting fires to the room of origin, ideally.

Fire spread is influenced by several primary factors, including:

- Fuel load
- Compartmentalization
- Notification
- Time to apply water

This list is simplified as there is an unlimited number of variables that can influence fire spread. The Fire District does not directly control the first three bullet points. Risk can be affected by early detection systems providing early warning to occupants and the Fire District. The application of water to fire is dependent on the appropriate complement of apparatus and qualified personnel arriving on the scene promptly. The initial balance of personnel can begin fire suppression operations, starting to control and limit fire spread.

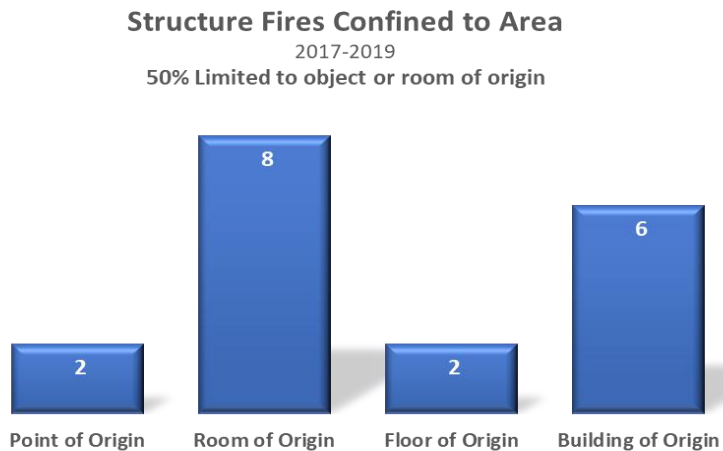


NFPA Study – 2009 to 2013  
2,600 fatalities and 13,000 injuries

Fire spread is categorized into five categories by NFIRS:

- Limited to the **object** of origin
- Limited to the **room of origin**
- Limited to the **floor** of origin
- Limited to the **building** of origin
- Extended **past the structure** of origin

These categories allow the establishment of fire suppression goals & objectives to be established and measured. The District has been effective in limiting fires to the object or room of origin in 50% of the time, as illustrated during the study period of 2017-2019.



District has contained  
**50%**  
of working structure fires to  
**ROOM OF ORIGIN**  
2017-2019

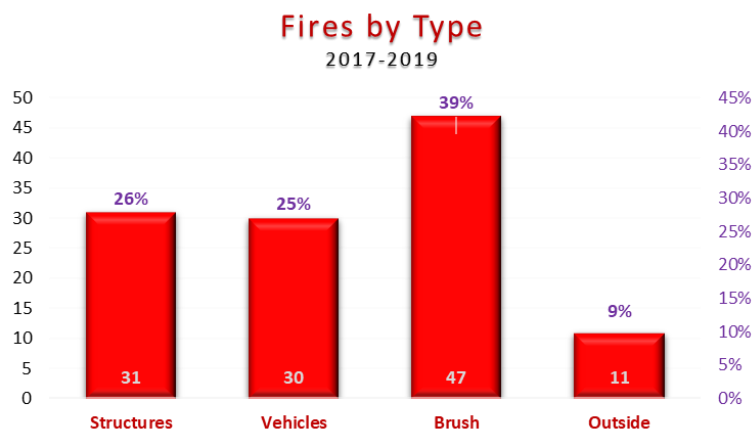


**NFIRS 100 & 200 INCIDENTS (In District only)**

Incident Type	2017	2018	2019	2017-19	TYPE TOTAL	AVERAGE	RISK LEVEL
<b>FIRES</b>							
100 Fire, other		2		2	2	2	L
111 Building fire	6	5	9	20		7	M-H
113 Cooking fire, confined to container	1	3	1	5		2	M-H
118 Trash or rubbish fire, contained	1	2	3	6	31	2	M-H
122 Fire in a motor home, camper, recreational vehicle			1	1		1	L
130 Mobile property (vehicle) fire, other		2		2		2	L
131 Passenger vehicle fire	8	4	6	18		6	L
132 Road freight or transport vehicle fire	3	2	4	9	30	3	L
140 Natural vegetation fire, other		1	1	2		1	L
141 Forest, woods, or wildland fire	1	1		2		1	L
142 Brush, or brush and grass mixture fire	11	20	9	40		13	L
143 Grassfire	2		1	3	47	2	L
150 Outside rubbish fire, other			1	1		1	L
151 Outside rubbish, trash, or waste fire		1	4	5		3	L
154 Dumpster or other outside trash receptacle fire		1		1		1	L
161 Outside storage fire		1		1		1	L
162 Outside equipment fire		3		3	11	3	L
<b>OVERHEAT</b>							
240 Explosion (no fire), other			1	1		1	L
251 Excessive heat, scorch burns with no ignition			1	1	2	1	L
	33	48	42				
<i>Change over the previous year</i>		45%	-13%		<b>123</b>	<b>5.0%</b>	

**Detailed Listing of Incidents by NFIRS Code – Series 100 (FIRES) - 5% of Total Incident Responses**

<b>Structures</b>	31	26%
<b>Vehicles</b>	30	25%
<b>Brush</b>	47	39%
<b>Outside</b>	11	9%
	<b>119</b>	





The incidents below are categorized as False/Other. However, these can be considered as additions to the Fire group as a Priority One (Emergency) fire response is usually dispatched to them.

Incident Type	2017	2018	2019	2017-19	AVERAGE
<b>FALSE/OTHER</b>					
700 False alarm or false call, other	2	3	1	6	2
713 Telephone, malicious false alarm			2	2	2
715 Local alarm system, malicious false alarm	1			1	1
730 System malfunction, other	2	1	2	5	2
732 Extinguishing system activation due to malfunction	1			1	1
733 Smoke detector activation due to malfunction	2	1	3	6	2
735 Alarm system sounded due to malfunction	2	3	5	10	3
736 CO detector activation due to malfunction		1		1	1
740 Unintentional transmission of alarm, other	3	1	3	7	2
741 Sprinkler activation, no fire - unintentional	3			3	3
742 Extinguishing system activation	1			1	1
743 Smoke detector activation, no fire - unintentional	11	10	6	27	9
744 Detector activation, no fire - unintentional	5	5	5	15	5
745 Alarm system sounded, no fire - unintentional	22	13	11	46	15
746 Carbon monoxide detector activation, no CO	1	5	1	7	2
	<b>56</b>	<b>43</b>	<b>39</b>		<b>138</b>
					<b>5.6%</b>
<i>Change over the previous year</i>		-23%	-9%		

Detailed Listing of Incidents by NFIRS Code – Series 700 (FALSE) – 5.6% of Total Incident Responses





### Fire Risk Type Assessment

A definition of “fire risk analysis” considers fire potential (probability), life hazards and economic impact (consequences), occupancy use, construction features, fire protection systems, fire flow requirements, and community risk factors. Evaluating event probability, impact, and location (as part of this analysis of existing and potential community risk), the following **TYPE classification of fire risk hazard levels** have been established:

FIRE - RISK	
<b>LOW</b>	<b>Outside fires</b> <i>Vehicles, Brush, Refuse</i>
<b>MODERATE</b>	<b>Structures</b> <b><i>SMALL - MEDIUM:</i></b> <i>Residential, Multifamily, Commercial</i>
<b>HIGH</b>	<b>Target Hazards</b> <b><i>LARGE - MEGA:</i></b> <i>Residential, Multifamily, Commercial</i> or <i>Schools, Hotels, Malls,</i> <i>Nursing, Assisted Living</i>

**Low-Risk type** are incidents typically requiring a single Fire Company. Examples are small brush and dumpster type fires. Vehicle fires are also classified as Low Risk. However, the District should consider an additional fire company dispatched for traffic control and manpower tasks. Fully protected (alarmed/sprinklered) structures are also low-risk types classifications and, therefore, can be dispatched with a reduced response with the option to upgrade the response level at any time if further information confirming a fire is determined.



**Moderate Risk type** are the structure fire incidents that make up most all the Fire District. They involve Small to Medium Residential-Multifamily-Commercial occupancies. Typically, they are single-family residential to small six units or less multifamily apartment buildings and small to medium commercial or strip malls. NFPA structure classification, “low” type.



**High-Risk type** are Large to Mega Size Residential-Multifamily-Commercial structures. It includes Target Hazards, which have the risk of a sizable loss of life, loss of economic value to the community, or high property loss. These include sites such as Schools, Hotels, Skilled Nursing facilities. NFPA structure classification, “medium to high.”

**FIRE risk types historically are primarily classified as LOW to MODERATE**



**TASK ANALYSIS**

Firefighting capability is determined by staffing levels, training, equipment, and teamwork. There are specific critical **TASKS** necessary to control and extinguish ALL RISK TYPE levels fires efficiently and safely. The definition of an Effective Response Force (**ERF**) is the required number of personnel to complete all the identified tasks within a prescribed timeframe. The chart to the right displays the critical tasks and minimum personnel necessary to control and extinguish each class of risk.

**RESPONSE PLAN**

Response plans are the deployment of resources to bring the needed number of minimum personnel and equipment necessary to complete the **CRITICAL TASKS**, or “Task Math,” required to safely and efficiently mitigate the incident. This is the allocation of **TEAMS/TOOLS/TRUCKS** to be sent to the scene to complete the **TASKS** needed per incident level TYPE per THREAT (Risk). For example, if the **ERF** (Effective Response Force) for a medium two-story residential structure fire (**MODERATE RISK TYPE**) is **15**. Therefore, the Fire District will deploy the **RESPONSE PLAN (TEAMS)** as per the chart below:

**3 ENGINES, 1 TRUCK, 1 AMBULANCE, 1 CHIEF**

*(15 personnel minimum)*

Fire Risk “TASK MATH”

LOW	
Command/Safety	1
Fire Attack/Investigation	1
Pump Operations	1
	<b>3</b>
Vehicle fires & Alarm Investigations	7
<b>TOTAL ERF</b>	<b>7-9</b>
MODERATE	
Command Aide/Safety	2
Fire Attack - 2nd (Backup)	2
Pump Operations/Aerial	2
Search/Rescue	2
OnDeck - Rapid Intervention	2
Ventilation	2
Utilities	1
EMS - Medical/Rehab	2
<b>TOTAL ERF</b>	<b>15</b>
HIGH	
Command/Safety	4
Fire Attack - 1st & 2nd (Backup)	4
Pump Operations/Aerial	2
Forcible Entry	2
Search/Rescue	3
OnDeck - Rapid Intervention	4
Water Supply	1
Ventilation	3
Utilities	2
EMS - Medical/Rehab	4
<b>TOTAL ERF</b>	<b>29</b>

FIRE RESPONSE	Nature	ENG	TRK	SQD	AMB	CHF	# FF	FIRST DUE	ERF		
LOW	OUTSIDE Grass/Refuse	1 - closest					3	6:20		T	T
	ALARM/INVESTIGATION/VEHICLE	1	1	*1	1		7-9	10:20	R	R	
MODERATE	STRUCTURES	3	1		1	1	15	6:20	A	A	
								10:20	C	C	
HIGH	Large - Mega (R,M,C)	4	3		2	4	29	6:20	K	K	
	TARGET HAZARDS							15:00			



## EMS RISK



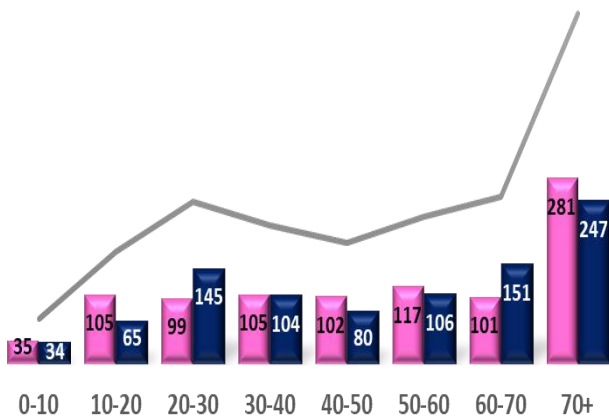
Risks to the community for EMS range from treating and transporting the ill/injured, cardiac and respiratory problems, and the broad spectrum of medical issues to the potential mass casualty.

It is the highest demand for service the District provides, accounting for nearly **55.5%** of the incidents (**65.8%** including Vehicle Accidents with injuries – categorized to the “Rescue” group). Emergency Medical environment continues to evolve with a changing society. Events such as terrorism, active shooter, and other man-made hostile events are reshaping EMS roles and responsibilities, which will require continued planning and training to meet those risks.

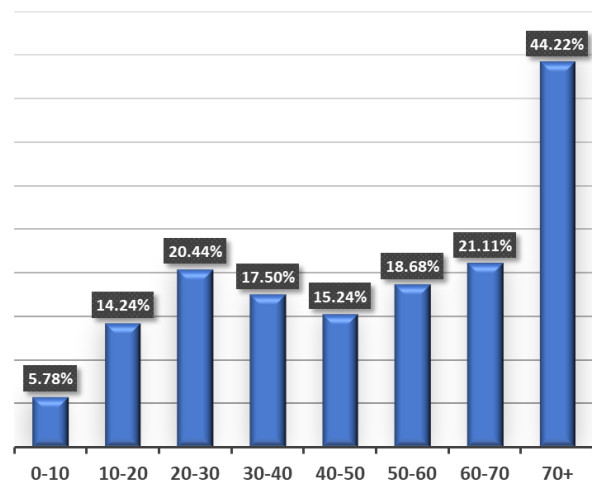
	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>EMS</b>							
311 Medical assist, assist EMS crew	1	2	4	<b>7</b>		2	L
320 Emergency medical service (EMS)	1		3	<b>4</b>		2	L
321 EMS call, excluding vehicle accident with injury	499	481	574	<b>1554</b>		518	L
	501	483	581		<b>1565</b>	<b>63.3%</b>	
		<i>Change over the previous year</i>					
		-4%	20%				

### Detailed Listing of Incidents by NFIRS Code – Series 300 (EMS) – 63.3 of Total Incident Responses

Patient Age Grouping by Gender  
2017-2019

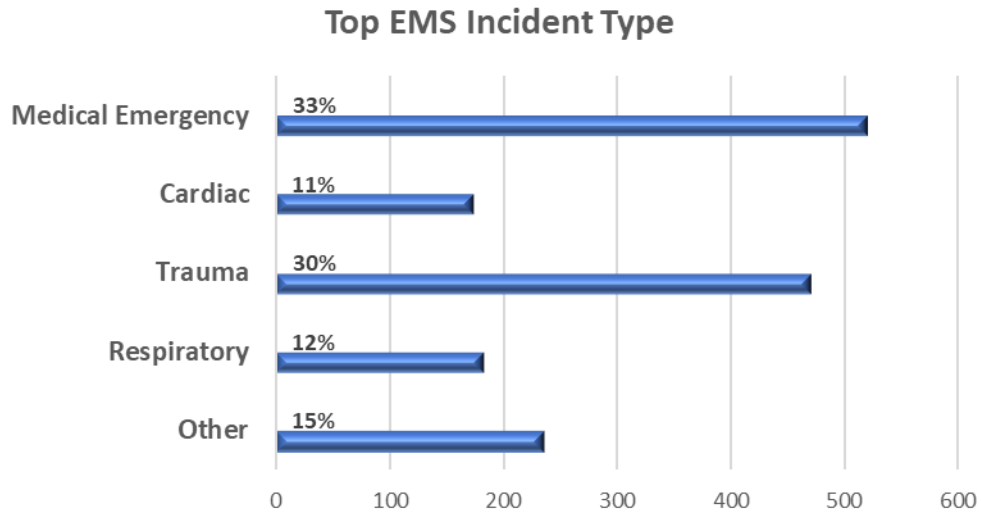


Patients by Age Group  
2017-2019



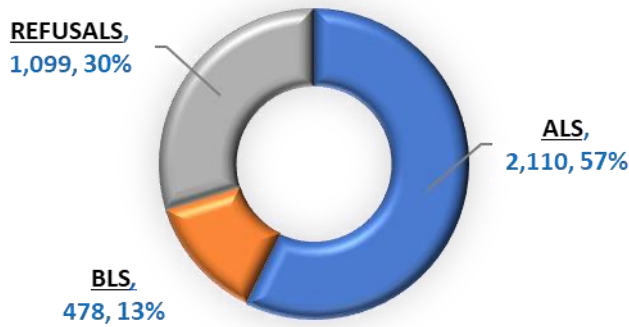


TOP EMS INCIDENT TYPES

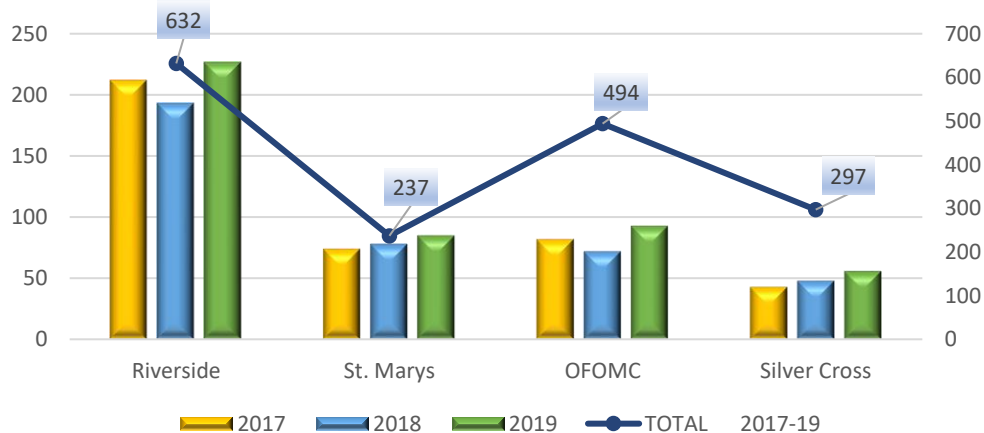


### EMS Level of Care

3,687 Patient Contacts  
2017-2019



### Receiving Hospital





### Trip Count by Nature of Call & Level of Care

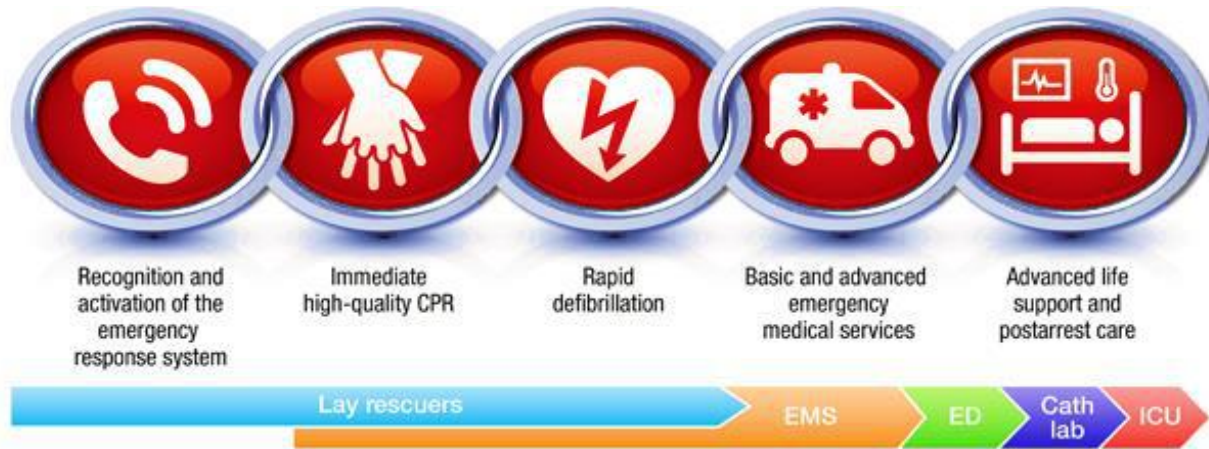
Trip Date IS BETWEEN 01/01/2017 AND 12/31/2019

Peotone Fire Protection District				
Total	1,225	654	1879	
Nature of Call	ALS	BLS	Total	%
Abdominal Pain	46	7	53	3%
Allergic Reaction	5	3	8	0%
Amputation	1	0	1	0%
Assault/Rape	2	2	4	0%
Back Pain	27	7	34	2%
Bite/Stings	2	1	3	0%
<b>Breathing Problems</b>	125	20	145	8%
Burn(s)	1	2	3	0%
Cardiac/Resp Arrest	3	0	3	0%
<b>Chest Pain</b>	123	1	124	7%
Choking	5	4	9	0%
CO2/Inhale/Hazmat	2	4	6	0%
Convulsions/Seizures	34	6	40	2%
Diabetic Problems	21	10	31	2%
DOA	13	0	13	1%
Electrocution/Electrical Shock	1	0	1	0%
Eye Problems/Injuries	0	4	4	0%
<b>Fall(s)</b>	98	62	160	9%
Fire	1	1	2	0%
Headache	5	4	9	0%
Healthcare Professional/Admission	1	0	1	0%
Heart Problems	1	0	1	0%
Heat/Cold Exposure	1	1	2	0%
Hemorrhage/Lacerations	22	26	48	3%
Ingestion/Poisoning	0	1	1	0%
Injured Person	6	9	15	1%
Lifting Assistance	9	9	18	1%
Medical Alarm	1	2	3	0%
<b>MVA</b>	31	51	82	4%
Not Applicable	1	1	2	0%
Not Available	1	0	1	0%
Other/Medical	24	18	42	2%
Overdose/Poisoning	17	3	20	1%
Pediatric	0	1	1	0%
Pregnancy/Childbirth	4	0	4	0%
<b>Psychiatric Problem/Suicide Attempt</b>	26	78	104	6%
Shooting/Stabbing	0	1	1	0%
<b>Sick Person</b>	316	98	414	22%
Stroke/CVA	40	2	42	2%
Syncope/Unconscious	9	0	9	0%
<b>Traffic Accident</b>	138	194	332	18%
Traumatic Injury	22	9	31	2%
Unconscious/Fainting	36	10	46	2%
Unknown Problem Man Down	1	0	1	0%
Well Person Check	3	2	5	0%



## **A sudden cardiac arrest patient that is not defibrillated within eight to ten minutes has virtually no chance of survival**

EMS service-level objectives are typically designed to provide medical intervention within a six-minute timeframe. Respiratory and traumatic injuries are also heavily time and are resource-dependent. In cardiac and respiratory arrest situations, survivability dramatically decreases beyond four to six minutes without appropriate intervention. Intervention includes early recognition, activation of 911, and bystander CPR until the arrival of emergency responders.

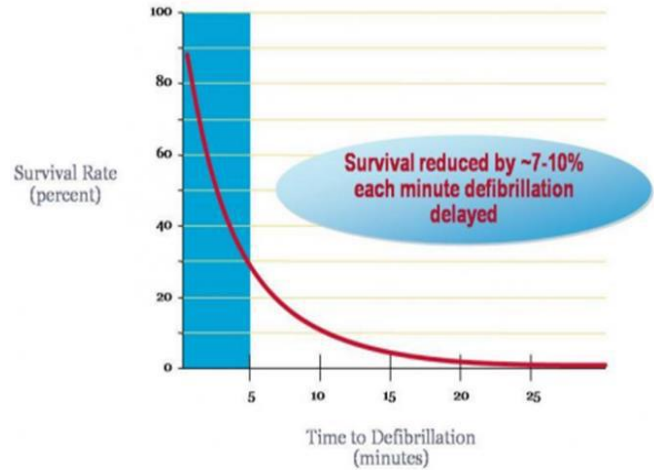
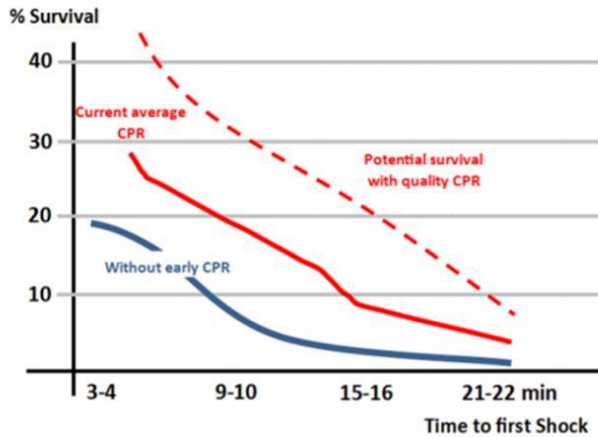


Early defibrillation is a critical link in the American Heart Association's Chain of Survival. Early defibrillation supports converting the heart from a chaotic rhythm back to normalcy. Oxygenated blood is not circulated throughout the body when the heart is in fibrillation. Without defibrillation within six minutes, the patient will likely die. The odds of survival decrease every minute without defibrillation.

Recognizing the cardiac arrest event, activating the EMS system, and beginning CPR in as short a time as possible increases survival rates. Having trained residents and access to AED's in public buildings has been shown to support an increase in survival. Patient contact times will be increased during responses to high rise and other large structures. Recognizing that interior travel is as critical as travel to the scene, will help to ensure the highest level of treatment and the most favorable outcomes.



The initiation of CPR and early defibrillation are critical initial links in the survival chain. The heart may start to beat chaotically in sudden cardiac arrest requiring delivery of an electrical shock through a defibrillator to restore regular operation and blood flow. Survival is reduced each minute CPR or defibrillation does not occur. Witness driven CPR and access to AED's will dramatically increase survival.



From 2017-2019, there has been 10 Cardiac/Respiratory Arrests in the District (average 3+ year)

**R.O.S.C. Survival Rate = 40% average (2017-19)**

**NATIONAL R.O.S.C. average: 7-11%**

*\*R.O.S.C. – Return Of Spontaneous Circulation*

*The District is developing strategies to continue to improve this critically important outcome measure.*





### EMS Risk level Classification

The District has identified both statistically and through strategic planning that emergency medical services are critical to the community. Statistical data substantiates that this is the highest level of service demand in all response zones. Although the consequence of an individual incident may not be high (typically limited to one fire company and one ambulance company), the probability of multiples of these incidents occurring at the same time is minimal (**21% of the time - simultaneous incidents occur of any nature**). Thus, emergency medical incidents are of high importance and have a very high impact on District resources. EMS Incidents can be broken into three significant risk TYPE group categories (with response) – Low, Moderate, High. The chart to the right is the corresponding Critical TASKS associated with each Risk Group.



EMS - RISK	
<b>LOW</b>	<b>Single Patient</b> <i>Injured/Illness</i>
<b>MODERATE</b>	<b>Severe Life Threat</b> <i>Cardiac Arrest/Trauma/Extrication</i>
<b>HIGH</b>	<b>Multi/Mass Casualty</b> <i>5 or more Pts</i>

EMS - TASKS / ERF	
<b>LOW</b>	
Command/Safety/Family Liaison	1
Patient Assessment/Treatment	1
Paramedic in Charge/ Reporting	1
Patient Movement/Transport	2
<b>TOTAL ERF</b>	<b>4-5</b>
<b>MODERATE</b>	
Command/Safety/Family Liaison	1
Patient Assessment/Treatment	1
Paramedic in Charge/ Reporting	1
Patient Movement/Transport	2
Resuscitation/Stabilization/Extricate	2
<b>TOTAL ERF</b>	<b>7</b>
<b>HIGH</b>	
Command	3
Scene Safety	1
Medical	2
Triage	4
Treatment	6
Transportation	12
Staging	1
<b>TOTAL ERF</b>	<b>29</b>

**EMS risk types are primarily classified as LOW to MODERATE**





## RESCUE RISK

### Technical Rescue Risks

Rescue risks vary from elevator removal to pin-in vehicle accidents to Special Operations. Technical Rescue covers a wide range of incidents, confined space rescue, trench collapse, low/high angle rescue, water/ice rescue, and structural collapse. The hazard levels are established for technical rescue risk per each discipline of Special Operations – Rope, Confined Space, Trench, and Water/Ice Rescue. The District has begun to locate and assess key characteristics of technical rescue hazards.

Below grade and confined space hazards exist. These “Special Operations” type incidents are few and far between. However, when they do occur, they most definitely fit the “low frequency, high risk” category and must be trained upon diligently. There are corresponding Critical Tasks associated with the **High-Risk type Group that is strictly Technician Level** team deployments, which are supported by the initial Operations level response.

Two recent examples of CART regional responses occurred nearby in January 2020 and involved Rescues/Recovery in Silos – of which this District has many.

RESCUE - RISK	
<b>LOW</b>	<b>Elevator entrapment</b> <i>Occupied, Lock Out, Wires Down</i>
<b>MODERATE</b>	<b>MVA w/ extrication</b> <i>Vehicle into Building</i>
<b>HIGH</b>	<b>Spec Operations Technicians (TRT)</b> <i>Confined Space, Trench, Structure Collapse, Water/Ice Low/High Angle Rope Rescues</i>



### FATAL VEHICULAR ACCIDENTS: 9 WITH 12 FATALITIES (2017-2019)

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>RESCUE</b>							<b>RESCUE</b>
322 Vehicle accident with injuries	90	93	102	285		95	L-M
323 Motor vehicle/pedestrian accident (MV Ped)		1	1	2		1	L
324 Motor vehicle accident no injuries	9	4	7	20		7	L
341 Search for person on land		2	1	3		2	H
353 Removal of victim(s) from stalled elevator		1		1		1	L
360 Water & ice-related rescue, other			1	1		1	H
	99	101	112			104	
<i>Change over the previous year</i>		2%	11%		312	12.6%	

Detailed Listing of Incidents by NFIRS Code – Series 300 (RESCUE) – 12.6% of Total Incident Responses

**RESCUE risk types are primarily classified as LOW to MODERATE**



**Hazardous Condition / HazMat Risk**

Hazardous materials are prevalent within the District area in commercial, industrial, farm, and transportation applications.

Flammable/combustible products are located throughout the District. Fuel spills, natural gas leaks, and Carbon Monoxide incidents are included in this category. Hazardous conditions within the District have included power lines down or arcing/shorting out.

Most of the potential exposure for High-risk type incidents in the District includes transportation, roadway, rail, electrical, and pipelines, which require a regional response Technician Level response.

HAZMAT - RISK TYPE	
<b>LOW</b>	<b>Investigations - Outside Incident</b> <i>CO Detector (no illness), Fuel spill, Odor</i>
<b>MODERATE</b>	<b>Static</b> <i>Inside Gas leak, CO Detector w/ illness</i>
<b>HIGH</b>	<b>Dynamic/Active release</b> <i>Level A - Technical Team may be needed</i>

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>HAZMAT</b>							<b>HAZMAT</b>
411 Gasoline or other flammable liquid spills	1	2	2	5		2	L
412 Gas leak (natural gas or LPG)	8	7	8	23		8	L-M
413 Oil or other combustible liquid spills	2	2		4		2	L
424 Carbon monoxide incident	2		1	3		2	L-M
440 Electrical wiring/equipment problem, other		1		1		1	L
441 Heat from short circuit (wiring), defective/worn	1			1		1	L
442 Overheated motor		1		1		1	L
444 Power line down	10	13	15	38		13	L
445 Arcing, shorted electrical equipment		2	1	3		2	L
671 Hazmat release investigation w/ no hazmat		2		2		2	M
	24	30	27			27	
<i>Change over the previous year</i>		25%	10%		79	3.2%	

Detailed Listing of Incidents by NFIRS Code – Series 400 (HAZARD/HAZARDOUS) – 3.2% of Total Incident Responses

**HAZMAT risk types are primarily classified as LOW to MODERATE**



## Service/Other

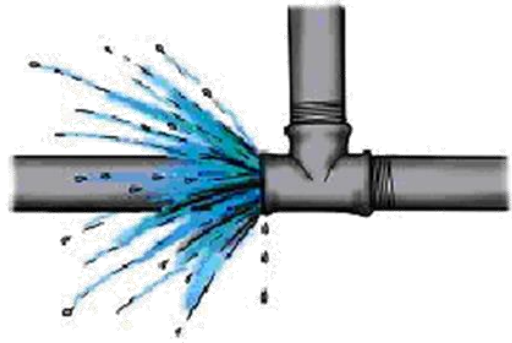
Non-Emergency “Service” incidents make up a large percentage of responses in the District. These incidents are not measured in benchmark standards for response time. Descriptions for these type incidents include cover assignment/change of quarters, lock-out, assist police or other agency, water leak, smoke removal, and more listed in detail in the following historic response charts. Incidents involving “554 Assist invalid” are included in EMS incidents.

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>SERVICE</b>							<b>SERVICE</b>
500 Service Call, other	1	2		3		2	L
510 Person in distress, other		1	1	2		1	L
511 Lock-out		1		1		1	L
522 Water or steam leak		1	1	2		1	L
550 Public service assistance, other	1	3	1	5		2	L
551 Assist police or other governmental agency	2	1	3	6		2	L
552 Police matter	2			2		2	L
553 Public service		2	3	5		3	L
554 Assist invalid	49	44	50	143		48	L
561 Unauthorized burning		3		3		3	L
571 Cover assignment, standby, move up	2	7	1	10		3	L
	57	65	60			61	
<i>Change over the previous year</i>		14%	-8%		<b>182</b>	<b>7.4%</b>	

### Detailed Listing of Incidents by NFIRS Code – Series 500 (SERVICE) – 7.4% of Total Incident Responses

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>GOOD INTENT</b>							<b>OTHER</b>
600 Good intent call, other	4	1	2	7		2	L
611 Dispatched & canceled en route	3	1	5	9		3	L
621 Wrong location		1	3	4		2	L
622 No incident found upon arrival of incident address	3	11	14	28		9	L
631 Authorized controlled burning		2		2		2	L
632 Prescribed fire		1		1		1	L
641 Vicinity alarm (incident in other location)		1	1	2		1	L
651 Smoke scare, the odor of smoke	5	5	4	14		5	L
652 Steam, vapor, fog or dust thought to be smoke	1	1	1	3		1	L
66 EMS call where the party has been transported		1		1		1	L
	16	25	30			24	
<i>Change over the previous year</i>		56%	20%		<b>71</b>	<b>2.9%</b>	

### Detailed Listing of Incidents by NFIRS Code – Series 600 (FALSE) – 2.9% of Total Incident Responses





**SECTION 4 – RISK & RESPONSE**



**SECTION 4**

Risk &  
Response





To provide the optimal protection levels and a proactive Standard of Cover for the entire District as a whole is dependent on the Risk Assessment, and it is imperative to outweigh the **Response to the Risk**.





## “Top Ten T’s” – Risk Assessment and Response Cycle

A simple way to understand the reason and rationale of how and way the District responds to any incident can be described in this chart below. The basis of how a Risk Assessment then becomes a Response Plan. These steps are broken down into a flowchart formula.

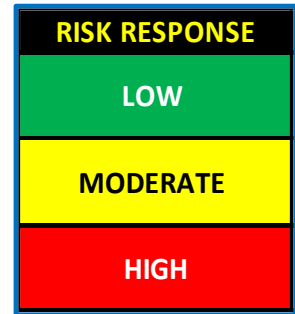




## THREAT - Analysis

Analyzing the THREAT or Risk in all service categories can be accomplished in several ways. Two focus and starting points include the PROBABILITY of an incident occurring and the CONSEQUENCE/IMPACT that may result if this threat were to happen.

- **PROBABILITY** can be determined by analyzing the POTENTIAL for an incident, with Historic demand as a critical indicator.
- **CONSEQUENCE** and **IMPACT** can also be determined by potential & historic demand of prior incidents viewed through a scoring matrix with an emphasis on effects on Life, Property, or Economics.
- **LOCATION/OCCUPANCY** are essential measures as
- Risk Assessment starts with looking at the threats to the community in all areas of service responsibility – Fire, EMS, Rescue, HazMat, etc.
- Analyzing the **THREAT** in all categories can be accomplished in several ways. Two focus and starting points include the **PROBABILITY** of an incident occurring and the **CONSEQUENCE/IMPACT** that may result if this threat were to occur.



Using a scoring system, such as the Structure Risk Assessment below (or OVAP), allows other measurements to help determine a Risk Score and determination of a:

### TYPE LEVEL – CATEGORY/CLASSIFICATION

All emergency service provided (FIRE, EMS, RESCUE, HAZMAT, Etc.) should be analyzed and classified as one of 3 risk type levels:

- ✚ LOW
- ✚ MODERATE
- ✚ HIGH

**SPECIAL** can also be utilized if necessary, as the risk type beyond HIGH, as well as Aircraft Rescue Fire Fighting (ARFF), Wildland, or Marine.





### Risk Assessment Methodology and Categorization

Risk assessment includes determining and defining the distinct threats in the community, based on occupancies such as single-family, multi-family, commercial, and other special type structures. Each scenario presents unique problems and requires an appropriate Fire, Rescue, or EMS response. After analysis of these and all other factors, the District had chosen to use the Structures:

**SHOPS** – *Size, Height, Occupancy, Problem, Score* as the basis to classify the potential risks associated.

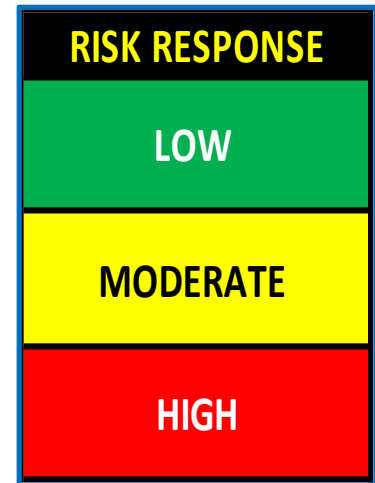
“SHOPS” is also Blue Card Command “size up” as the acronym for defining a structure’s:

**Size, Height, Occupancy, Problem, Strategy**, and ties in perfectly with a scoring system to determine a Structural Risk Assessment for most threat level responses – **EMS, FIRE, & SPECIAL OPERATIONS.**

For example, below is a chart of various typical structures common in the District and service risks scored according to the SHOPS guide.

STRUCTURE RISK ASSESSMENT				
SIZE				
PRECONNECT REACH	Small	Medium	Large	Mega
	1	2	3	4
HEIGHT				
STORIES	One	Two	Three	Four+
	1	2	3	4
OCCUPANCY				
TYPE	Residential	Multifamily	Commercial	Target
	1	2	3	4
PROBLEM				
NATURE	EMS	FIRE	SPEC OP	SERVICE
	1	2	3	0
RISK SCORE				
LOW = < 3		MODERATE = 4-9		HIGH = > 10

SHOPS	Size	Height	Occupancy	Problem	SCORE
RESIDENTIAL	2	2	1	1	6
MULTIFAMILY	3	3	2	1	9
COMMERCIAL	3	1	3	2	9
TARGET	4	4	4	2	14

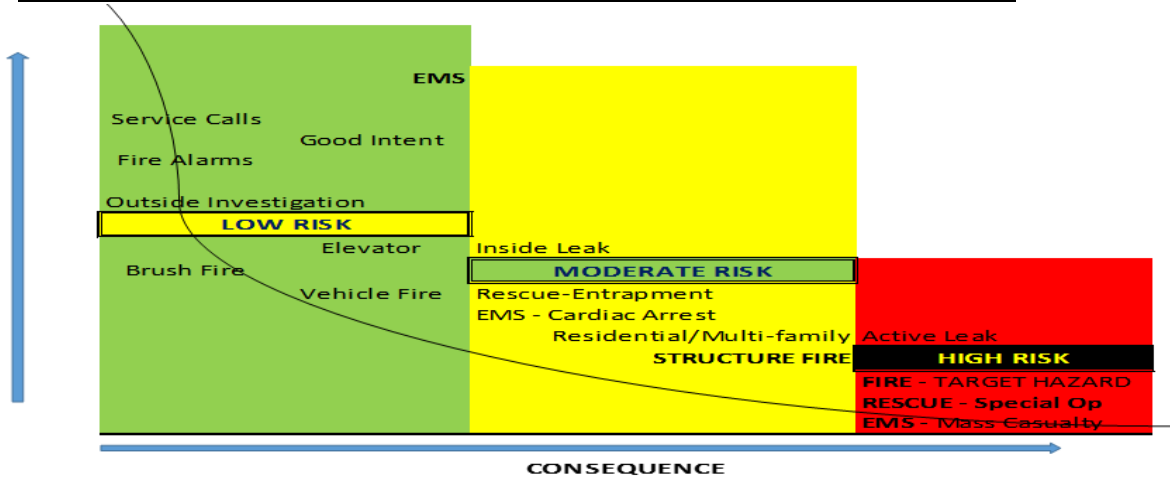


Example “SHOPS” scoring matrix

The last “S” for Special would allow the District to add a multiplier as needed [i.e., a + for a Target Hazard or - for fully protected]. Points are scored on a structure's assessment. The structure assessment utilizes a Size, Height, Occupancy, Problem, and Special. This assessment reflects the number of personnel that will be needed to mitigate an incident-based from a critical task analysis “Task Math” and impact to the District and community. The more significant, taller buildings require more personnel to mitigate incidents in these structures and have different community impacts and risk considerations.



P  
R  
O  
B  
A  
B  
I  
L  
I  
T  
Y



FIRES	PROBABILITY	CONSEQUENCE	RISK
<b>Structure</b>			
Residential s-m	Low	Moderate	Moderate
Multi-Family s-m	Low	Moderate	Moderate
Commercial s-m	Low	Moderate	Moderate
Target (+Large L-XL)	Low	High	High
<b>Non-Structure</b>			
Outside	Moderate	Low	Low
Vehicle	Moderate	Low	Low
<b>EMS</b>			
Medical	High	Low	Low
Cardiac Arrest	Low	High	Moderate
Mass Casualty	Low	High	High
<b>RESCUE</b>			
Elevator/Lock-out	Moderate	Low	Low
Entrapment	Low	Moderate	Moderate
Special Ops	Low	High	High
<b>HAZMAT</b>			
Outside Invest	Low	Low	Low
Inside Leak	Moderate	Moderate	Moderate
Active Leak	Low	High	High

**Structure Stock in District**

Building Type	Station	Risk Level
	14	
Assembly	10	H
Business/Commercial	163	L-M
Educational	6	H
Factory	10	L-M
Institutional	44	H
High-Hazard	124	H
Residential & Multi-Family Residential	2530	M
Storage	2533	L
Utilities	459	M
<b>Grand Total</b>	<b>5879</b>	



### TYPE – Classification of Risk Level

RISK RESPONSE	
LOW	
MODERATE	
HIGH	

Once the hazard assessment is complete, a risk level can be classified by category for all-hazard response.

These assignments then have corresponding critical TASKS that must be assigned and accomplished. Examples of Threat/Risk TYPE levels per Response type are listed below.

An additional level, SPECIAL, could be added as a category above HIGH if necessary.

Most Low-level types are primarily first-due company assignments and, as such, are the prevalent incident responses.

FIRE - RISK	
LOW	<u>Outside fires</u> <i>Vehicles, Brush, Refuse</i>
MODERATE	<u>Structures</u> <b>SMALL - MEDIUM:</b> <i>Residential, Multifamily, Commercial</i>
HIGH	<u>Target Hazards</u> <b>LARGE - MEGA:</b> <i>Residential, Multifamily, Commercial</i> or <i>Schools, Hotels, Malls, Nursing, Assisted Living</i>

HAZMAT - RISK	
LOW	<u>Investigations - Outside Incident</u> <i>CO Detector (no illness), Fuel spill, Odor</i>
MODERATE	<u>Static</u> <i>Inside Gas leak, CO Detector w/ illness</i>
HIGH	<u>Dynamic/Active release</u> <i>Level A - Technical Team may be needed</i>

EMS - RISK	
LOW	<u>Single Patient</u> <i>Injured/Illness</i>
MODERATE	<u>Severe Life Threat</u> <i>Cardiac Arrest/Trauma/Extrication</i>
HIGH	<u>Multi/Mass Casualty</u> <i>5 or more Pts</i>

RESCUE - RISK	
LOW	<u>Elevator entrapment</u> <i>Occupied, Lock Out, Wires Down</i>
MODERATE	<u>MVA w/ extrication</u> <i>Vehicle into Building</i>
HIGH	<u>Spec Operations Technicians (TRT)</u> <i>Confined Space, Trench, Structure Collapse, Water/Ice Low/High Angle Rope Rescues</i>



Most Low-level Types are primarily first-due company assignments and, as such, are the prevalent incident responses. Therefore, as these are most calls for the District, it has been decided to classify and track these as “Low” risk type responses.

For “Structure Fires,” - NFPA classifies Low Risk slightly differently.

The NFPA Fire Protection Handbook defines hazard levels of occupancies by types. Each hazard level carries inherent risks.

- ✚ **Low-Hazard Occupancies** — One-, two- or three-family dwellings and scattered small business and industrial occupancies  
**The District classifies these as MODERATE-RISK TYPE**
- ✚ **Medium-Hazard Occupancies** — Apartments, offices, mercantile, and industrial occupancies not typically requiring extensive rescue by fire fighting forces.  
**The District classifies these as HIGH-RISK TYPE**
- ✚ **High-Hazard Occupancies**— Schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high life hazard or large fire potential occupancies.  
**The District classifies these as TARGET HAZARDS.**





### TASKS / TOTAL (E.R.F.)

Once a TYPE level has been identified, several Critical TASK Assignments are determined to effectively and efficiently mitigate the situation. Additionally, an ERF (Effective Response Force) of the number of personnel necessary to accomplish these tasks is allocated to each of the type levels.

These **TASKS** are categorized by **LOW, MODERATE, and HIGH** for All-Hazard responses – EMS, FIRE, RESCUE, and HAZMAT. SERVICE/INVESTIGATIONS are classified as LOW Levels.

### TASKS & TOTAL [ERF] PER RISK TYPE & LEVEL

EMS - TASKS / ERF	
<b>LOW</b>	
Command/Safety/Family Liaison	1
Patient Assessment/Treatment	1
Paramedic in Charge/ Reporting	1
Patient Movement/Transport	2
<b>TOTAL ERF</b>	<b>4-5</b>
<b>MODERATE</b>	
Command/Safety/Family Liaison	1
Patient Assessment/Treatment	1
Paramedic in Charge/ Reporting	1
Patient Movement/Transport	2
Resuscitation/Stabilization/Extricate	2
<b>TOTAL ERF</b>	<b>7</b>
<b>HIGH</b>	
Command	3
Scene Safety	1
Medical	2
Triage	4
Treatment	6
Transportation	12
Staging	1
<b>TOTAL ERF</b>	<b>29</b>

FIRE - TASKS / ERF	
<b>LOW</b>	
Command/Safety	1
Fire Attack/Investigation	1
Pump Operations	1
<b>TOTAL ERF</b>	<b>3</b>
Vehicle fires & Alarm Investigations	7
<b>TOTAL ERF</b>	<b>7-9</b>
<b>MODERATE</b>	
Command Aide/Safety	2
Fire Attack - 2nd (Backup)	2
Pump Operations/Aerial	2
Search/Rescue	2
OnDeck - Rapid Intervention	2
Ventilation	2
Utilities	1
EMS - Medical/Rehab	2
<b>TOTAL ERF</b>	<b>15</b>
<b>HIGH</b>	
Command/Safety	4
Fire Attack - 1st & 2nd (Backup)	4
Pump Operations/Aerial	2
Forcible Entry	2
Search/Rescue	3
OnDeck - Rapid Intervention	4
Water Supply	1
Ventilation	3
Utilities	2
EMS - Medical/Rehab	4
<b>TOTAL ERF</b>	<b>29</b>

HAZMAT - TASKS / ERF	
<b>LOW</b>	
Command/Safety	1
Investigation	2
<b>TOTAL ERF</b>	<b>3</b>
<b>MODERATE</b>	
Command/Safety	1
Hazmat Sector Officer	1
Investigation/Entry	2
Backup	2
Science/Research	1
EMS/Treatment	2
<b>TOTAL ERF</b>	<b>9</b>
<b>HIGH</b>	
Command	1
Safety	1
Hazmat Sector Officer	1
Entry	2
Backup	2
Science/Research	2
Decon	3
EMS/Treatment	2
<b>TOTAL ERF</b>	<b>14</b>

The number of **TASKS** needed to mitigate the situation safely and efficiently determines the number of personnel needed to complete those tasks – many of them simultaneously (i.e., “Task Math”).

Thus, the **TOTAL** number of personnel equates to the Effective Response Force (**ERF**).



High-risk type levels for HAZMAT & RESCUE incidents usually require a regional response team.

These are low-frequency high risks events.

**\*\*Special Operations Teams needed\*\***

<b>RESCUE - TASKS / ERF</b>	
<b>LOW</b>	
Command/Safety	1
Extrication	2
<b>TOTAL ERF</b>	<b>3</b>
<b>MODERATE</b>	
Command/Safety	1
Rescue Sector Officer	1
Stabilization	2
Extrication	2
Medical	1
<b>TOTAL ERF</b>	<b>7</b>
<b>HIGH</b>	
<b>Special Op's Teams Level</b>	

<b>RESCUE - TASKS / ERF</b>				
<b>HIGH - Special Op's Teams Level</b>				
<b>COLLAPSE</b>	<b>CONFINED SPACE</b>	<b>ROPE</b>	<b>TRENCH</b>	<b>WATER</b>
Incident Command 1	Incident Command 1	Incident Command 1	Incident Command 1	Incident Command 1
Rescue Officer 1	Rescue Officer 1	Rescue Officer 1	Rescue Officer 1	Rescue Officer 1
Safety 1	Safety 1	Safety 1	Safety 1	Safety 1
EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2
Rescue Squad Officers 2	Rescue Team & Back-up 4	Rescue Team & Back-up 4	Rescue Team & Back-up 4	Rescue Team & Back-up 4
Rescue Specialists 8	Rigging / Haul Team 5	Rigging / Haul Team 5	Rigging / Haul Team 5	Rope Tenders 4
Monitoring 1	Monitoring 1	<b>TOTAL ERF 14</b>	Monitoring 1	<b>TOTAL ERF 13</b>
Cut Station 2	Ventilation 1		Ventilation 1	
Equipment Log 1	Air supply 1		Shoring Team 8	
<b>TOTAL ERF 19</b>	Attendant 1		<b>TOTAL ERF 24</b>	
	Scribe 1			
	<b>TOTAL ERF 19</b>			



## Critical Tasks

Critical task definitions are shown below:

Attack lines – *used to control and extinguish the fire. Capable of a minimum of 100 GPM.*

- Search and Rescue – *search, and removal of live victims, generally requires two personnel inside with an additional two outside to meet OSHA requirements.*
- Ventilation – *removal of toxic smoke, heat, and other gases from a structure. Must be coordinated with the attack to avoid extension or additional risk to interior crews.*
- Water supply – *the establishment of a positive water supply requiring one qualified driver/operator.*
- Incident Command (IC) – *Transfers and provides command and control for the incident upon arrival from the initial arriving officer.*
- Back up line – *they are used to provide additional water supply for interior crews.*
- Rapid Intervention Crews (RIC) – *two (2) firefighters minimum to aid with interior crews if needed.*
- Exposure line – *protection for internal or external areas that may be threatened by fire spread.*

Additional tasks will be required, such as salvage, overhaul, etc. It should also be noted that crews may be assigned multiple tasks as incident needs require. Automatic (AA) and Mutual Aid (MA) are utilized extensively to provide appropriate staffing and apparatus levels. Critical tasks must be conducted in a manner that is timely and appropriate to mitigate the incident. Critical tasks will differ based on incident types as well as severity and special circumstances. Critical tasks for Fire, EMS, HM, Technical Rescue, and Water Rescue are considered representative of tasks required and may need to be modified to account for specific circumstances. In all incidents, firefighter safety remains paramount. Incident operations can be impacted by several variables that cannot always be accounted for. These variables introduce a level of unpredictability to operations that can be magnified by a lack of staff, apparatus, or plans. Critical tasks are defined as the primary tasks required to manage and mitigate an incident. The number and type of tasks will vary depending on the incident and severity.

Critical tasks may vary due to the following factors:

- Building construction
- Number of floors
- Number of occupants
- Exposures
- Extent/phase of fire
- Built-in protection systems
- Patient condition and safety concerns



Identified critical tasks determine staffing requirements and apparatus needs. These factors are dependent upon the CRA-SOC findings and requirements. Strategies to be utilized are dependent on staffing and apparatus as well. Fire growth, along with life safety risks, combines to establish fire ground priorities to mitigate losses. Fire control and life safety are strongly correlated but can also be two separate activities. Fire control is the application of suppressant, most likely water, to control and extinguish a fire. Life safety relates to searching and removing victims from an affected area. Fire control activities are accomplished using hose lines that may fall into either handheld or master stream categories. Hose lines are mostly used in interior or offensive operations but can be used in a quick hit, outside first, then inside attack. Master streams are designed to be used from stationary or fixed positions. Hand lines can flow up to 250 gallons per minute (GPM), while master streams can exceed 1,000 GPM.

The decision on which strategy to use is dependent upon the phase of the fire, life safety threat, and several resources, among other factors. A pre-flashover vs. post flashover fire will require different approaches based upon a fire extent. The District recognizes two types of strategies: offensive and defensive. These strategies align with staffing and response levels established through risk assessment and historical patterns. The District responds with three (3) certified personnel on each suppression unit and two (2) cross-trained firefighter/medics on each ambulance, providing a range of strategies that can be initiated on arrival.

- Offensive involves interior operations. Objectives are to confine the fire to the object or room of origin to minimize life safety risk to civilians and firefighters. Interior attacks contain risk and require compliance with OSHA 2 in/2 out unless there is evidence of life safety on arrival or through information received by dispatch.
- Defensive attacks are supported from the outside and may involve a structure that is not tenable for offensive operations or deemed to be unsafe in risk/reward assessments.
- Quick hit attacks are a combined exterior then interior operation. "Quick hit" is intended to reduce fire volume and spread with minimal risk to firefighters. UL research has found that this technique can be beneficial due to rapid-fire growth and time requirements to deploy interior crews, which can be used to buy time for the arrival of additional personnel.

Critical tasks must be conducted in a manner that is timely and appropriate to mitigate the incident. Critical tasks will differ based on incident types as well as severity and special circumstances. In all incidents, firefighter safety remains paramount.





## TEAMS / TOOLS / TRUCKS

Critical tasks for each service level are identified to establish an Effective Response Force (ERF) to meet performance objectives as determined. Critical tasks are defined as essential major tasks accomplished to stabilize the incident.

Life safety is a priority in establishing critical tasks. ERF determines the minimum amount of staffing and apparatus that must arrive on the scene within an objective-based time frame to accomplish critical tasks.

After the critical **TASKS** are determined and an **ERF** is established indicating the number of personnel needed to accomplish these tasks, then a deployment Response Plan is programmed into Dispatch CAD to bring those assigned personnel and apparatus/equipment needed.

If an alarm were to elevate levels, from a **LOW** to **MODERATE** or **MODERATE** to **HIGH**, then these plans would escalate automatically.

RESPONSE & DEPLOYMENT PLAN										
TYPE	TYPICAL NATURE	TEAMS				TOTAL ERF	TIMES			
		ENG	TRK	AMB	CHF		# FF	FIRST DUE	ERF	
<b>EMS RESPONSE</b>	Nature									
<b>LOW</b>	Injured / Illness/ Lift Assist	1 - closest		1		4-5	6:00			
<b>MODERATE</b>	Cardiac / Traumatic Arrest	1 - closest		2	1	7	6:00			
<b>HIGH</b>	Multi/Mass Casualty	3	2	6	3	30	6:00			
							10:00			
							10:00			
							15:00			

TYPE	TYPICAL NATURE	TEAMS				TOTAL ERF	TIMES			
		ENG	TRK/TRK	AMB	CHF		# FF	FIRST DUE	ERF	
<b>FIRE RESPONSE</b>	Nature									
<b>LOW</b>	OUTSIDE Grass/Refuse	1 - closest				3	6:20			
	ALARM*/INVESTIGATION/VEHICLE	1	1	1*	1	7	10:20			
<b>MODERATE</b>	STRUCTURES - Residential	3	1	1	1	15	6:20			
							10:20			
<b>HIGH</b>	Large - Mega (R,M,C)	4	3	2	4	29	6:20			
	TARGET HAZARDS						15:00			

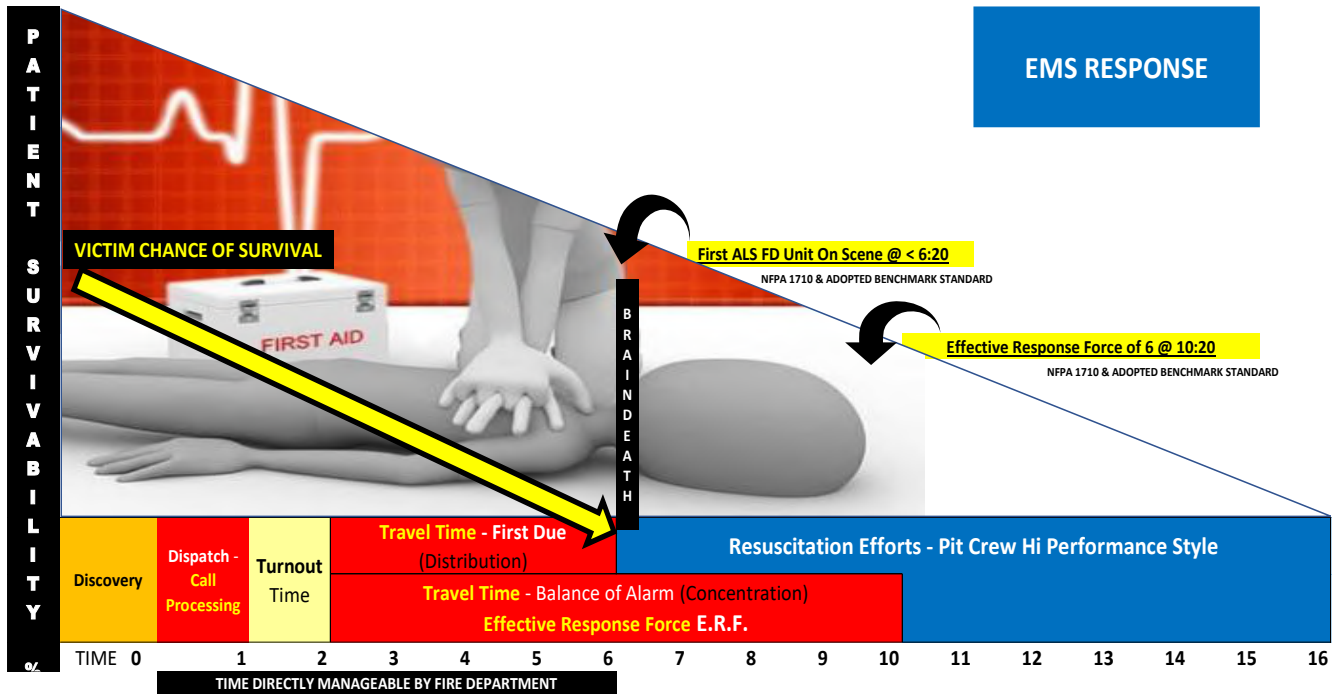
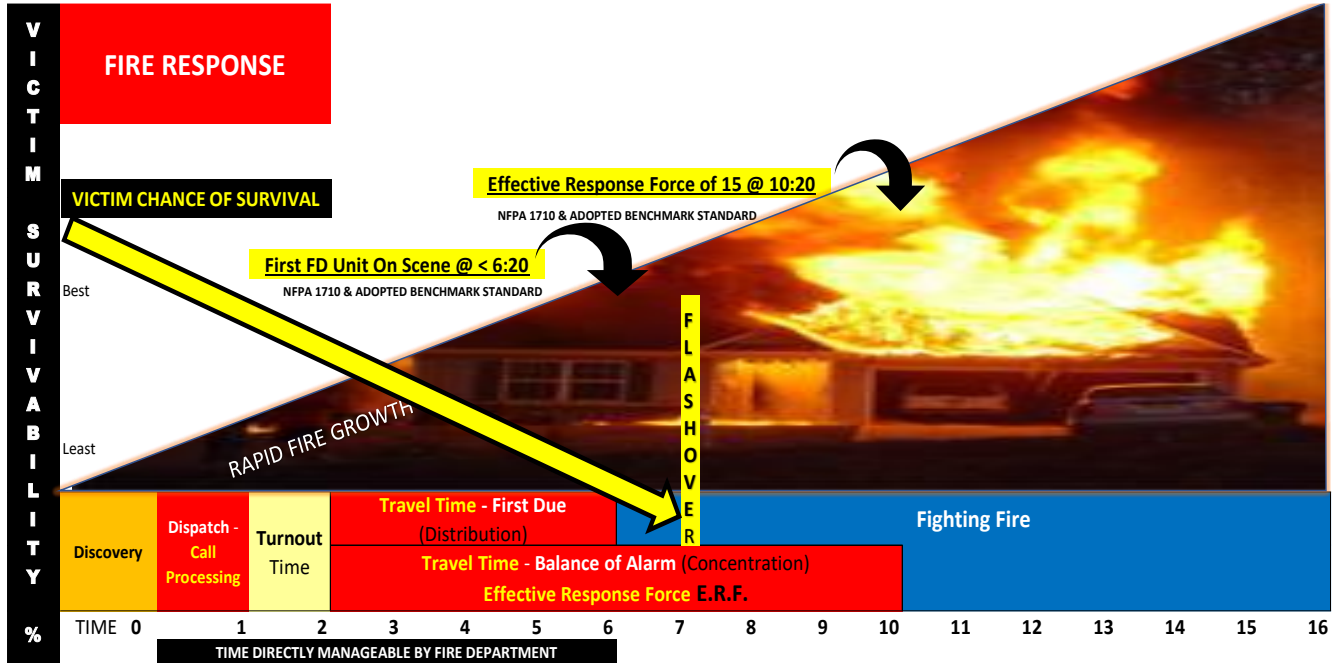
TYPE	TYPICAL NATURE	TEAMS				TOTAL ERF	TIMES			
		ENG	TRK	AMB	CHF		# FF	FIRST DUE	ERF	
<b>HAZMAT RESPONSE</b>	Nature									
<b>LOW</b>	OUTSIDE / Investigation	1 - closest				3	6:20			
	CO (no illness), Fuel Spill, Odor, Wires down						10:20			
<b>MODERATE</b>	INSIDE / Static Release	2	2	1	2	15	6:20			
	CO (with illness), Inside Gas Leak						10:20			
<b>HIGH</b>	DYNAMIC / Active Release	4	3	2	3	29	6:20			
	*Level A Team Response needed						15:00			

TYPE	TYPICAL NATURE	TEAMS				TOTAL ERF	TIMES			
		ENG	TRK	AMB	CHF		# FF	FIRST DUE	ERF	
<b>RESCUE RESPONSE</b>	Nature									
<b>LOW</b>	Elevator entrapment	1 - closest				3	6:20			
	Lock In/Out, Flooding, Damage Assess						10:20			
<b>MODERATE</b>	MVA	1		2	1	7	6:20			
	Pin-In/Extrication (Escalated*)	2	1	3	1	14	10:20			
<b>HIGH</b>	SPECIAL OPERATIONS - TRT	3	1	2	2	18	6:20			
	Con Space, Collapse, Rope, Trench,Water						15:00			



## Comparing Fire Suppression and EMS Capabilities

Arrival within 6 to 7 minutes of both types of emergencies is **critical in terms of survivability.**



**For every minute delay in access to a defibrillator - chances of survival drop by 7-10 %**



**SECONDS COUNT  
MINUTES MATTER!**



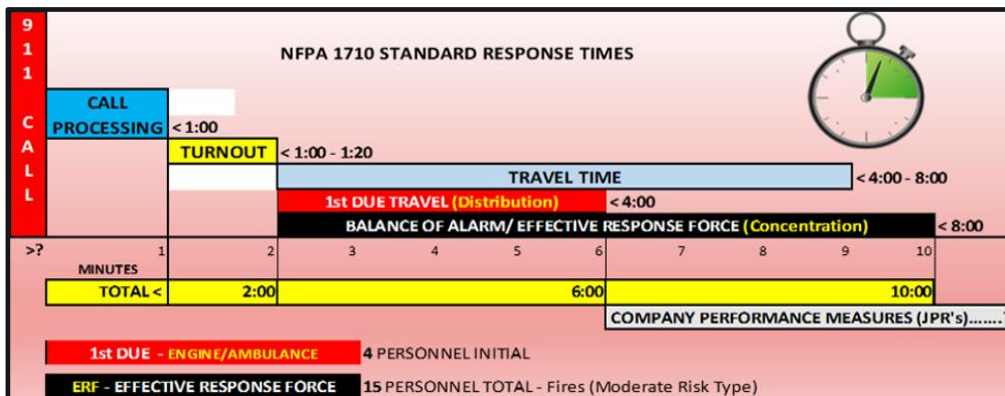
**TIMES**

**NFPA 1710**

Therefore, the benchmark time goals set by the PFPD- Fire District coincide with the National Fire Protection Association (NFPA) 1710 – the Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operation, and Special Operations to the Public by Career Fire Districts.

**“Task Math” - Moderate risk type-level Structure fires**

NFPA 1710 RESPONSE BENCHMARKS (Moderate Risk)	
Task	Time (-)
Dispatch – Call Processing	1 minute
Turnout Time (EMS)	1 minute
Turnout Time (non-EMS)	1 minute 20 seconds
Arrival of First Engine Company (Travel Time)	4 minutes
Arrival of Full Alarm (ERF) Assignment (Travel Time)	8 minutes
Call to Arrival of First Responder Unit (Distribution)	5 minutes 20 seconds
Call to Arrival of ERF (Concentration)	10 minutes 20 seconds



NFPA 1710 Full Alarm Assignment-Residential Structure Fire (Moderate Risk)		
Task	Firefighters Required	Company Typically Assigned
Incident Command	1	Chief Officer
Water Supply	1	Engine
Attack Line	2	Engine
Back-Up-Line	2	Engine
Support-Attack/Back Up	2	Engine or Truck
Search & Rescue	2	Engine or Truck
Ventilation	2	Truck
Truck / Aerial Operator	1	Truck
IRIC / RIT	2	Engine/Truck/Ambulance
<b>Total Personnel</b>	<b>15</b>	



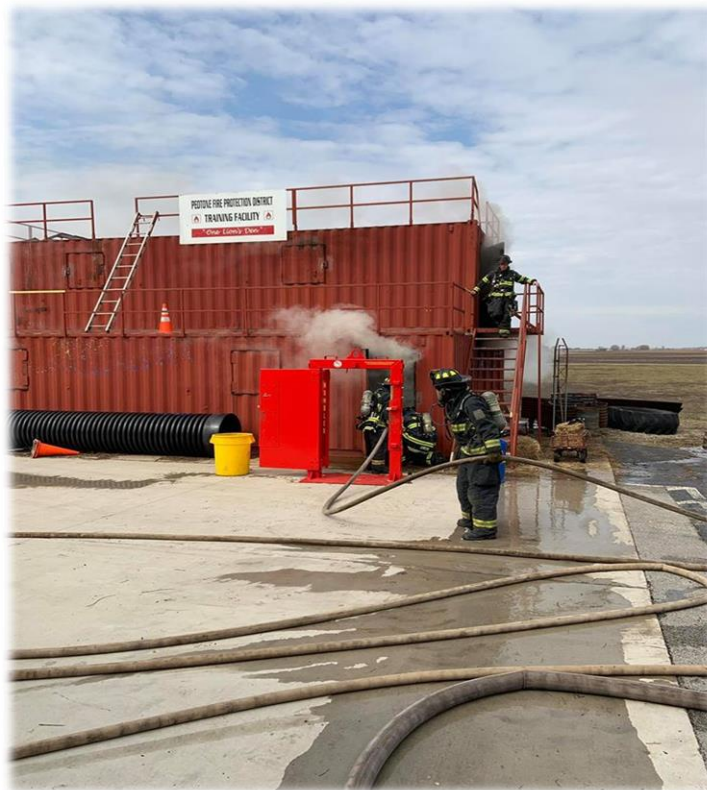
## TRACK

As part of the ongoing Continuous Quality Improvement (CQI) program, we must measure the District's responses and performance to these Threats and risks to ensure efficient and effective delivery of services rendered that meet or exceed the District's benchmarks.



## TRAIN

Additionally, training on performance and proficiency of the Critical Task Assignments needs to be conducted to ensure rapid completion once the units and personnel arrive on the scene. Establishing Job Performance Requirements (**JPR'S**) baseline and benchmark times that meet minimum NFPA standards or goals set by the District will ensure CQI as the goal.





Risk & Response – Total Deployment Plan (all combined)

THREAT ASSESSMENT					RISK & RESPONSE PLAN							
TYPE OF RISK	TYPICAL NATURE	TASKS & TOTAL - ERF	TEAMS (TOOLS/TRUCKS)				TIMES		TRACK & TRAIN			
RISK LEVEL	TYPICAL Nature	TASKS	# FF	ENG	TRK	AMB	CHF	# FF	FIRST DUE	ERF		
<b>EMS RESPONSE</b>	<b>LOW</b>	<u>SINGLE PATIENT</u> <i>Injured/Illness</i>	Command/Safety/Family Liaison Patient Assessment/Treatment Paramedic in Charge/ Documentation Patient Movement/Transport <b>TOTAL ERF</b>	1 1 1 2 5	1 - closest fire company		1		4-5	6:00	10:00	TRACK (PERFORMANCE) TRAIN
	<b>MODERATE</b>	<u>SEVERE LIFE THREAT</u> <i>Cardiac / Traumatic Arrest</i>	Command/Safety/Family Liaison Patient Assessment/Treatment Paramedic in Charge/ Documentation Patient Movement/Transport Resuscitation/Stabilization/Extrication <b>TOTAL ERF</b>	1 1 1 2 2 7	1 - closest fire company		2	1	7	6:00	10:00	
	<b>HIGH</b>	<u>MASS CASUALTY</u> <i>5 or more Pts</i>	Command Scene Safety Medical Triage Treatment Transportation Staging <b>TOTAL ERF</b>	3 1 2 4 6 12 1 29	4		7	6		6:00	15:00	
	<b>BOX ALARM - ADDITIONAL +</b>											
<b>FIRE RESPONSE</b>	<b>LOW</b>	<u>INVESTIGATIONS, OUTSIDE FIRES</u> -Grass/Refuse  <u>ALARMS</u>	Command/Safety Fire Attack/Investigation Pump Operations <b>ALARM INVESTIGATION</b> Vehicle fires & Alarm Investigations <b>TOTAL ERF</b>	1 1 1 3 7 7-9	1 - closest Fire Unit				3	6:20	10:20	TRACK (PERFORMANCE) TRAIN
	<b>MODERATE</b>	<u>WORKING STRUCTURES</u> Small to Medium: Residential, Multifamily, Commercial	Command Aide/Safety Fire Attack - 2nd (Backup) Pump Operations/Aerial Search/Rescue OnDeck - Rapid Intervention Ventilation Utilities EMS - Medical/Rehab <b>TOTAL ERF</b>	2 2 2 2 2 2 1 2 15	3	1	1	1	15	6:20	10:20	
	<b>HIGH</b>	<u>TARGET HAZARDS &amp;</u> Large to Mega: Residential, Multifamily, Commercial	Command/Safety Fire Attack - 1st & 2nd (Backup) Pump Operations/Aerial Forcible Entry Search/Rescue & EMS OnDeck - Rapid Intervention Water Supply Ventilation Utilities EMS - Medical/Rehab <b>TOTAL ERF</b>	4 4 2 2 3 4 1 3 2 4 29	4	3	2	4		6:20	15:00	
	<b>BOX ALARM - ADDITIONAL +</b>											





HAZARD / HAZMAT RESPONSE	RISK LEVEL TYPE	TYPICAL Nature	TASKS	# FF	ENG	TRK	AMB	CHF	# FF	FIRST DUE	ERF	T R A C K ( P E R F O R M A N C E ) T R A I N	
	LOW	<u>OUTSIDE / Investigation</u> CO (no illness), Fuel Spill, Odor Wires down	Command/Safety	1	1 - Closest Fire Unit						6:20		10:20
			Investigation	1									
			Mitigation	1									
<b>TOTAL ERF</b>				<b>3</b>				3					
MODERATE	<u>INSIDE / Static Release</u> Inside Spill/Gas leak, CO (w/ illness)	Command/Safety	1	1	1	1	1			6:20	10:20		
		Hazmat Sector Officer	1										
		Investigation/Entry	2										
		Backup	2										
		Science/Research	1										
EMS/Treatment	2												
<b>TOTAL ERF</b>				<b>9</b>				15					
HIGH	<u>Dynamic/Active release</u>  *Level A Team Response needed	Command	1	2	1	2	1			6:20	15:00		
		Safety	1										
		Hazmat Sector Officer	1										
		Entry	2										
		Backup	2										
		Science/Research	2										
		Decon	3										
		EMS/Treatment	2										
<b>TOTAL ERF</b>				<b>14</b>				14					
<b>BOX ALARM - ADDITIONAL +</b>													

RESCUE RESPONSE	RISK LEVEL TYPE	TYPICAL Nature	TASKS	# FF	ENG	TRK	AMB	CHF	# FF	FIRST DUE	ERF	T R A C K ( P E R F O R M A N C E ) T R A I N					
	LOW	<u>Elevator entrapment</u> Lock Out, Flooding, Damage Assessment	Command/Safety	1	1 - closest Fire Company						6:20		10:20				
			Extrication	2													
			<b>TOTAL ERF</b>											<b>3</b>			
MODERATE	<u>MVA</u>	Command/Safety	1	1			2	1		6:20	10:20						
		Rescue Sector Officer	1														
		Medical	2														
		EMS/Treatment/Pt Movement	2														
		<b>TOTAL ERF</b>										<b>6</b>				7	
<u>MVA w/ Extrication (PIN-IN)</u> Vehicle into building	Stabilization	2	+1		+1	+1				6:20	10:20						
	Extrication	4															
	EMS/Treatment/Pt Movement	2															
<b>TOTAL ERF</b>				<b>14</b>				14									
HIGH	<u>SPECIAL OPERATIONS - TRT</u> <b>*REQUIRES REGIONAL TEAM</b>  Confined Space, Trench, Structure Collapse, Water/Ice Low/High Angle Rope Rescues	<b>SPEC OP'S TEAM NEEDS</b>		MIN.													
		Rope (High Angle)	14	2	1	2	2			6:20	15:00						
		Water (Ice/Dive)	13														
		Structural Collapse	19														
		Confined Space	19														
		Trench	24														
		<b>TOTAL ERF</b>										<b>13-24</b>				18	
<b>BOX ALARM - ADDITIONAL +</b>																	

**RESCUE - RISK TYPE**

WATER	ROPE	COLLAPSE	CONFINED SPACE	TRENCH
Incident Command 1	Incident Command 1	Incident Command 1	Incident Command 1	Incident Command 1
Rescue Officer 1	Rescue Officer 1	Rescue Officer 1	Rescue Officer 1	Rescue Officer 1
Safety 1	Safety 1	Safety 1	Safety 1	Safety 1
EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2	EMS / Treatment 2
Rescue Team & Back-up 4	Rescue Team & Back-up 4	Rescue Squad Officers 2	Rescue Team & Back-up 4	Rescue Team & Back-up 4
Rope Tenders 4	Rigging / Haul Team 5	Rescue Specialists 8	Ventilation 1	Ventilation 1
<b>TOTAL ERF 13</b>	<b>TOTAL ERF 14</b>	Cut Station 2	Monitoring 1	Monitoring 1
		Equipment Log 1	Rigging / Haul Team 5	Rigging / Haul Team 5
		<b>TOTAL ERF 18</b>	Scribe 1	Shoring Team 8
			Attendant 1	<b>TOTAL ERF 24</b>
			Air supply 1	
			<b>TOTAL ERF 19</b>	



**SECTION 5 - Current Deployment and Performance**



**SECTION 5**

Current  
Deployment  
& Performance





## Why Measure Performance?

In the book *Reinventing Government*, the authors state:

- ✚ *"If you don't measure the results of your plan, you can't tell success from failure.*
- ✚ *If you can't see success, you can't reward it.*
- ✚ *If you can't reward success, you're probably rewarding failure.*
- ✚ *If you can't see success, you can't learn from it.*
- ✚ *If you can't recognize failure, you can't correct it.*
- ✚ *If you **can demonstrate results**, you can win public support."*

Success is the modern Fire Service can be measured in lives resuscitated & saved; structure fires stopped near their point of origin, satisfaction surveys, which are all fact-based metrics. Without these baseline measurements and benchmark goals, then we operate on opinion.

Each minute of delay is critical to the safety of the occupants and firefighters and is directly related to property damage. The previous reflex chart provides emergency responders with a general rule of time over events. It highlights significant benchmarks. There are variations of fire growth that must also be taken into consideration when developing a response strategy.

IF YOU DON'T KNOW THE SCORE, THEN  
HOW DO YOU KNOW YOU'RE **WINNING**?

The shortest possible response times create the highest probabilities of resuscitation. A vital evaluation point lost on most agencies is the time crews reach the patient's side. Often the clock stops when the vehicle arrives or stops at the address. The key to a successful outcome is the point the patient is contacted. Consideration of actual patient contact should also be made when evaluating total response time for EMS calls; this period can be substantial and can most certainly affect the outcome due to delayed intervention.

## Distribution

Distribution is the geographic location of all **first-due** resources for initial intervention.

## Concentration

Concentration is the spacing of multiple resources arranged so that an initial "effective response force" (ERF) can arrive on the scene within the time frames outlined by the response time and on-scene performance objectives. It is also known as the "**balance**" of the alarm.

The various types of apparatus that the District deploys on emergencies, listed by their dispatch designator type, are described.





## ***Apparatus Details and Staffing Levels***

### **Major classifications:**

**Engine** – Primary response unit from each station for most types of service requests. Each engine is equipped with a minimum 1500 GPM pump, 750-gallon water tank (tanker – 2,500 tank), and complement sets of equipment following NFPA 1901, Standard for Automotive Fire Apparatus, and 2016 edition. All engines comply with FEMA Type 1 engine classification.

**Squad** – In addition to full engine suppression capabilities, the Squad carries heavy extrication tools.

**Truck** – Apparatus equipped with a minimum of 100’ fixed aerial ladder or platform, an assortment of ground ladders, fixed and portable lighting, various power tools, and salvage equipment, as following NFPA 1901, Chapter 6. PFPD ladder apparatus is equipped with a 1,250 GPM pump, 300-gallon water tank, and a minimum of 350 feet of large diameter supply hose. Trucks meet the requirements for FEMA Type 1 ladder classification.

**Ambulance** – Provide medical treatment and transport. Ambulances meet the requirements for GSA Type 1 ambulance classification.

**Incident Command/Hazmat** – Specialized apparatus that carries a large inventory of hazmat response specific equipment. It is also capable of being an incident command post with associated communication equipment and workspace.

**ARFF** – Specialized Airplane Rescue and Fire Fighting unit. Designed for airport fire/rescue operations.



Unit	Type	Year	Make	Model	Mileage	Pump Size	Tank Size	Staffed	
<b>STATION 14</b>									
<b>S 14</b>	Engine/Squad	2009	Sutphen	Shield S3	61,588	1,500	1,000	X	
<b>E 14</b>	Engine/Tanker	2015	Smeal	UST	11,046	1,500	2,500		
<b>E 15</b>	Engine	2006	Am LaFrance	Freightliner	34,063	1,500	1,000		
<b>T 14</b>	Truck	2002	Am LaFrance/LTI	Eagle - 100'	54,928	1,250	300	X	
<b>A 14</b>	Ambulance	2012	Ford	Horton	82,546	--	--	X	
<b>A 15</b>	Ambulance	2019	Ford	Horton - rechasis	9,387	--	--		
<b>Brush 14</b>	Brush	2011	Ford	Darley	4,554	350	250		
<b>Chf 15</b>	Chief	2014	Ford	Expedition	56,483	--	--		
<b>Chf 14</b>	Chief	2019	Ford	F-150	15	--	--		
<b>U 15</b>	Pickup	2014	Ford		13,801	--	--		
<b>6947</b>	ARFF	1992	Amertek			1,000	1,000	X	145 gallons Foam
<b>6907a</b>	Mini Pumper?	1993	GMC/E1						450 # Purple K
<b>Trailer 14</b>	Dive Rescue								



## Incident Response Measures / Service Demand



To properly review system incident deployment and response performance, several factors are usually analyzed and measured, which is referred to as "Service Demand." It starts with these questions.

- **WHAT:** What type of incident is it?

Fire, EMS, Rescue, Hazard, Service/Other are the main types. Nature of call or NFIRS (National Fire Incident Reporting System) Coding a consistent formula for typing.

- **WHEN:** When did the incident occur?

These time measures start MACRO & end MICRO – Year, Month, Day of Week, and Hour of Day

- **WHERE:** Where was the incident location and occupancy?

Actual GIS plotting and occupancy type trends are reviewed

- **WHO:** Who responded to the incident?

What shift, what station, what unit(s)

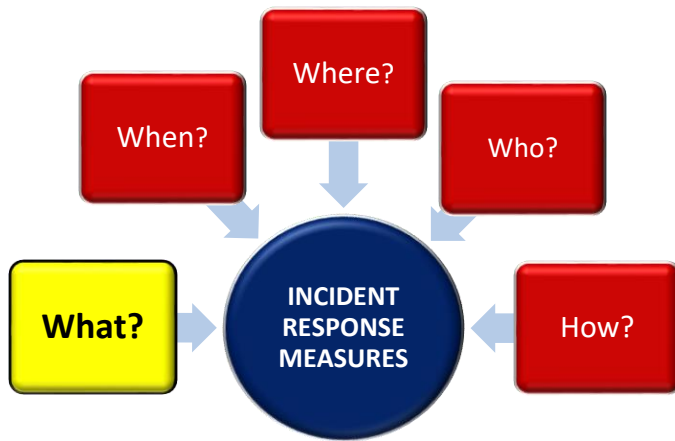
- **HOW:** How well did they perform?

Did the system perform as expected and planned? Did they respond within benchmark times or better?

**If not, then why not?** By exploration of the above metrics and others later in this section, the emergency response plans can be predicted and planned.



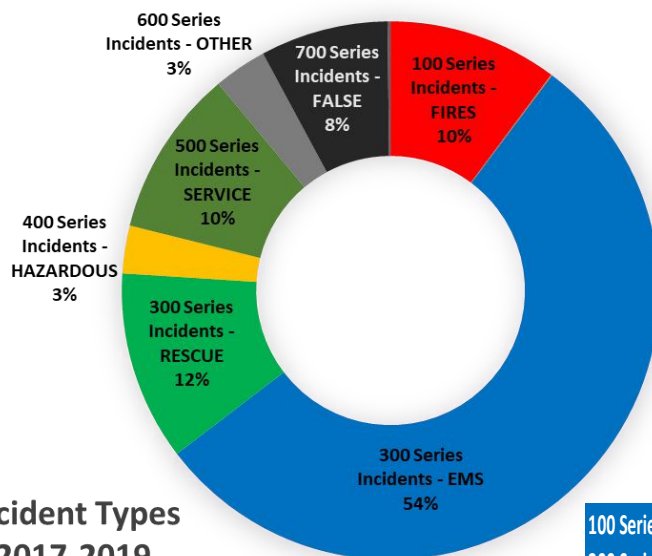
## WHAT - Types Types of Incidents



Let's start with the WHAT. Below is a listing of the types and number of requests for these incidents the Fire District has responded to from 2017-2019.

During the period January 1, 2017, through December 31, 2019 – the Fire District was dispatched to **3,344 incidents** or an average of **1,115 annually (high of 1,146 in 2019)**. Incident types are based on the National Fire Incident Reporting System (NFIRS) standard definition as developed through the U.S. Fire Administration,

National Fire Data Center. Incident type is defined as the situation found upon arrival by emergency providers. It covers the large varieties of calls the modern fire district responds to daily and is divided into nine (9) series. Within each series are additional codes that define the incident more specifically. The majority of incident types are listed below, with the total volume for each.



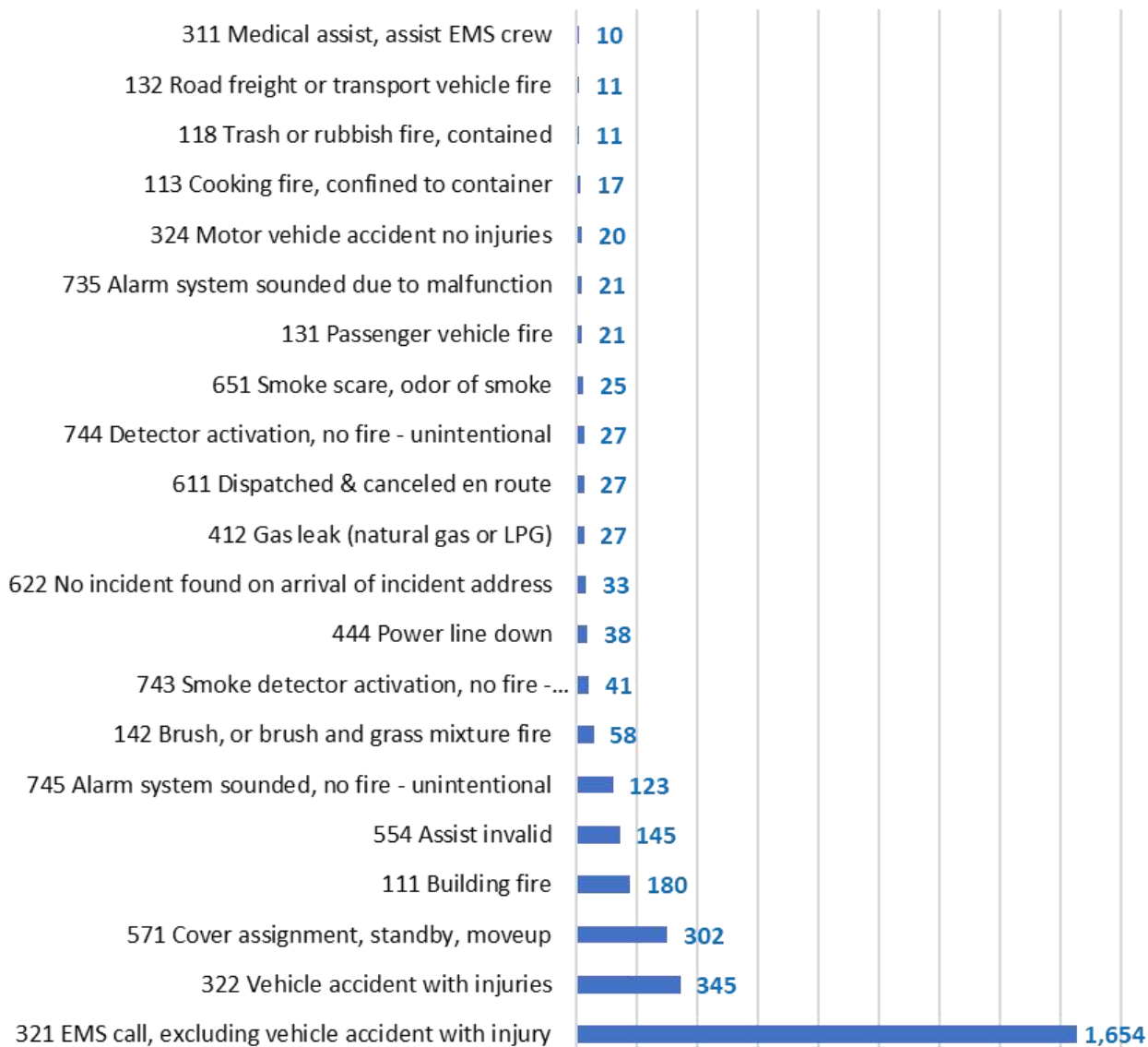
Incident Types  
2017-2019

	2017	2018	2019	Totals	Average	
100 Series Incidents - FIRES	98	138	105	341	127	10%
200 Series Incidents - OVERHEAT/EXPLOSION	0	0	2	2	2	0%
300 Series Incidents - EMS	583	569	666	1,818	608	54%
300 Series Incidents - RESCUE	113	124	144	381	133	11%
400 Series Incidents - HAZARDOUS	31	36	29	96	38	3%
500 Series Incidents - SERVICE	101	136	99	336	117	10%
600 Series Incidents - OTHER	23	34	50	107	41	3%
700 Series Incidents - FALSE	122	85	50	257	92	8%
900 Series Incidents - SPECIAL	1	4	1	6	2	0%
	1,072	1,126	1,146	3,344		



## Top 20 Incidents by Type

2017-2019





### Incidents per Type by Year

PEOTONE Incidents - Count by Type by Year  
(IN DISTRICT)

**NO AID GIVEN (74% of all Incidents)**

Incident Type	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>FIRES</b>							
100 Fire, other		2		2	2	2	L
111 Building fire	6	5	9	20		7	M-H
113 Cooking fire, confined to container	1	3	1	5		2	M-H
118 Trash or rubbish fire, contained	1	2	3	6	31	2	M-H
122 Fire in a motor home, camper, recreational vehicle			1	1		1	L
130 Mobile property (vehicle) fire, other		2		2		2	L
131 Passenger vehicle fire	8	4	6	18		6	L
132 Road freight or transport vehicle fire	3	2	4	9	30	3	L
140 Natural vegetation fire, other		1	1	2		1	L
141 Forest, woods, or wildland fire	1	1		2		1	L
142 Brush, or brush and grass mixture fire	11	20	9	40		13	L
143 Grassfire	2		1	3	47	2	L
150 Outside rubbish fire, other			1	1		1	L
151 Outside rubbish, trash, or waste fire		1	4	5		3	L
154 Dumpster or outside trash receptacle fire		1		1		1	L
161 Outside storage fire		1		1		1	L
162 Outside equipment fire		3		3	11	3	L
<b>OVERHEAT</b>							
240 Explosion (no fire), other			1	1		1	L
251 Excessive heat, scorch burns with no ignition			1	1	2	1	L
	<b>33</b>	<b>48</b>	<b>42</b>				
<i>Change over the previous year</i>		45%	-13%		<b>123</b>	<b>5.0%</b>	
<b>EMS</b>							
311 Medical assist, assist EMS crew	1	2	4	7		2	L
320 Emergency medical service (EMS)	1		3	4		2	L
321 EMS call, excluding vehicle accident with injury	499	481	574	1554		518	L
	501	483	581				
<i>Change over the previous year</i>		-4%	20%		<b>1565</b>	<b>63.3%</b>	
<b>RESCUE</b>							
322 Vehicle accident with injuries	90	93	102	285		95	L-M
323 Motor vehicle/pedestrian accident (MV Ped)		1	1	2		1	L
324 Motor vehicle accident no injuries	9	4	7	20		7	L
341 Search for person on land		2	1	3		2	H
353 Removal of victim(s) from stalled elevator		1		1		1	L
360 Water & ice-related rescue, other			1	1		1	H
	<b>99</b>	<b>101</b>	<b>112</b>			<b>104</b>	
<i>Change over the previous year</i>		2%	11%		<b>312</b>	<b>12.6%</b>	



	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>HAZMAT</b>							
411 Gasoline or other flammable liquid spills	1	2	2	5		2	L
412 Gas leak (natural gas or LPG)	8	7	8	23		8	L-M
413 Oil or other combustible liquid spills	2	2		4		2	L
424 Carbon monoxide incident	2		1	3		2	L-M
440 Electrical wiring/equipment problem, other		1		1		1	L
441 Heat from short circuit (wiring), defective/worn	1			1		1	L
442 Overheated motor		1		1		1	L
444 Power line down	10	13	15	38		13	L
445 Arcing, shorted electrical equipment		2	1	3		2	L
671 Hazmat release investigation w/ no hazmat		2		2		2	M
	<b>24</b>	<b>30</b>	<b>27</b>			<b>27</b>	
<i>Change over the previous year</i>		25%	-10%		<b>79</b>	<b>3.2%</b>	

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>SERVICE</b>							
500 Service Call, other	1	2		3		2	L
510 Person in distress, other		1	1	2		1	L
511 Lock-out		1		1		1	L
522 Water or steam leak		1	1	2		1	L
550 Public service assistance, other	1	3	1	5		2	L
551 Assist police or other governmental agency	2	1	3	6		2	L
552 Police matter	2			2		2	L
553 Public service		2	3	5		3	L
554 Assist invalid	49	44	50	143		48	L
561 Unauthorized burning		3		3		3	L
571 Cover assignment, standby, move up	2	7	1	10		3	L
	<b>57</b>	<b>65</b>	<b>60</b>			<b>61</b>	
<i>Change over the previous year</i>		14%	-8%		<b>182</b>	<b>7.4%</b>	

	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>GOOD INTENT</b>							
600 Good intent call, other	4	1	2	7		2	L
611 Dispatched & canceled en route	3	1	5	9		3	L
621 Wrong location		1	3	4		2	L
622 No incident found upon the arrival	3	11	14	28		9	L
631 Authorized controlled burning		2		2		2	L
632 Prescribed fire		1		1		1	L
641 Vicinity alarm (the incident in other location)		1	1	2		1	L
651 Smoke scare, the odor of smoke	5	5	4	14		5	L
652 Steam, vapor, fog, or dust thought to be smoke	1	1	1	3		1	L
66 EMS call where the party has been transported		1		1		1	L
	<b>16</b>	<b>25</b>	<b>30</b>			<b>24</b>	
<i>Change over the previous year</i>		56%	20%		<b>71</b>	<b>2.9%</b>	

Incident Type	2017	2018	2019	2017-19	TOTAL	AVERAGE	RISK LEVEL
<b>FALSE/OTHER</b>							
							<b>FALSE</b>



700 False alarm or false call, other	2	3	1	6	2	L
713 Telephone, malicious false alarm			2	2	2	L
715 Local alarm system, malicious false alarm	1			1	1	M
730 System malfunction, other	2	1	2	5	2	M
732 Extinguishing system activation due to malfunction	1			1	1	M
733 Smoke detector activation due to malfunction	2	1	3	6	2	M
735 Alarm system sounded due to malfunction	2	3	5	10	3	L
736 CO detector activation due to malfunction		1		1	1	L
740 Unintentional transmission of alarm, other	3	1	3	7	2	M
741 Sprinkler activation, no fire - unintentional	3			3	3	M
742 Extinguishing system activation	1			1	1	M
743 Smoke detector activation, no fire - unintentional	11	10	6	27	9	M
744 Detector activation, no fire - unintentional	5	5	5	15	5	M
745 Alarm system sounded, no fire - unintentional	22	13	11	46	15	L
746 Carbon monoxide detector activation, no CO	1	5	1	7	2	L
	<b>56</b>	<b>43</b>	<b>39</b>		<b>46</b>	
		-				
		23%	-9%		<b>138</b>	<b>5.6%</b>
<b>OTHER</b>						
900 Special type of incident, other	1	4	1	6		
<b>Totals</b>	<b>788</b>	<b>799</b>	<b>895</b>	<b>2472</b>	<b>827</b>	
		1.4%	12.0%			



## Incidents by Type per Month (INCLUDES AID GIVEN)

Period 2017 – 2019

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% of Inc	Group Total
100 Fire, other				1				1					2	0.1%	
11 Structure Fire		1								1			2	0.1%	
111 Building fire	23	16	8	14	11	28	15	17	13	13	9	13	180	5.4%	
112 Fires in structures other than in a building					1		1	1					3	0.1%	
113 Cooking fire, confined to container	3		1		2		1	3	1	1	3	2	17	0.5%	
114 Chimney or flue fire, confined to chimney or flue			1							1		1	3	0.1%	
117 Commercial Compactor fire, confined to rubbish					1								1	0.0%	
118 Trash or rubbish fire, contained	1			2	1	1	2		2			2	11	0.3%	
122 Fire in motor home, camper, recreational vehicle											1		1	0.0%	
130 Mobile property (vehicle) fire, other		1			1								2	0.1%	
131 Passenger vehicle fire	2	4	2	2			1		2	4	2	2	21	0.6%	
132 Road freight or transport vehicle fire	1			2			2	1		2	2	1	11	0.3%	
140 Natural vegetation fire, other			2										2	0.1%	
141 Forest, woods or wildland fire				1	3			1		1			6	0.2%	
142 Brush, or brush and grass mixture fire	1	1	11	17	8	6	2	4	3	2	1	2	58	1.7%	
143 Grass fire		1	1	2								2	6	0.2%	
150 Outside rubbish fire, other					1								1	0.0%	
151 Outside rubbish, trash or waste fire		1		1	2	2							6	0.2%	
154 Dumpster or other outside trash receptacle fire			1										1	0.0%	
161 Outside storage fire				1									1	0.0%	
162 Outside equipment fire						3	1		1				5	0.1%	
171 Cultivated grain or crop fire												1	1	0.0%	
														<b>10.2%</b>	<b>341</b>
240 Explosion (no fire), other								1					1	0.0%	
251 Excessive heat, scorch burns with no ignition	1												1	0.0%	
														<b>0.1%</b>	<b>2</b>
311 Medical assist, assist EMS crew			1		2	1	1	3		2			10	0.3%	
32 Emergency medical service (EMS)					2		1				1		4	0.1%	
320 Emergency medical service, other (conversion only)						2	1			1			4	0.1%	
321 EMS call, excluding vehicle accident with injury	137	132	156	141	135	142	135	143	140	150	127	116	1,654	49.5%	
322 Vehicle accident with injuries	29	28	19	24	34	18	35	37	29	28	25	39	345	10.3%	
323 Motor vehicle/pedestrian accident (MV Ped)			1						1				2	0.1%	
324 Motor vehicle accident no injuries	4	4	1			2		1	1	4	2	1	20	0.6%	
341 Search for person on land						2			1	1			4	0.1%	
342 Search for person in water					1		1				1		3	0.1%	
352 Extrication of victim(s) from vehicle											1		1	0.0%	
353 Removal of victim(s) from stalled elevator			1										1	0.0%	
354 Trench/below grade rescue									1				1	0.0%	
356 High angle rescue												1	1	0.0%	
360 Water & ice related rescue, other									1				1	0.0%	
363 Swift water rescue		1											1	0.0%	
365 Watercraft rescue						1							1	0.0%	
381 Rescue or EMS standby									1				1	0.0%	
														<b>61.4%</b>	<b>2054</b>
400 Hazardous condition, other		1					2						3	0.1%	
411 Gasoline or other flammable liquid spill			1					1	2	1			5	0.1%	
412 Gas leak (natural gas or LPG)	2	1	2	2	3	3	1	2	2	2	1	6	27	0.8%	
413 Oil or other combustible liquid spill					4								4	0.1%	
422 Chemical spill or leak			1	1	1							1	4	0.1%	
424 Carbon monoxide incident		1	1		1	1							4	0.1%	
440 Electrical wiring/equipment problem, other									1				1	0.0%	
441 Heat from short circuit (wiring), defective/worn						2						1	3	0.1%	
442 Overheated motor	1												1	0.0%	
444 Power line down	5	4	3	2	3	6	4	1	1	7	1	1	38	1.1%	
445 Arcing, shorted electrical equipment	1	1		1									4	0.1%	
461 Building or structure weakened or collapsed						1							1	0.0%	
48 Attempted burning, illegal action							1						1	0.0%	
														<b>2.9%</b>	<b>96</b>





Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% of Inc	Group Total
500 Service Call, other				2		1							3	0.1%	
510 Person In distress, other					1	1							2	0.1%	
511 Lock-out			1										1	0.0%	
522 Water or steam leak								1	1				2	0.1%	
531 Smoke or odor removal				1					1			1	3	0.1%	
550 Public service assistance, other		1							1	1		2	5	0.1%	
551 Asslst police or other governmental agency			1		1	1			3		1		7	0.2%	
552 Police matter	2												2	0.1%	
553 Public service	1				1	1		1			1		5	0.1%	
554 Asslst Invalld	17	24	8	14	9	14	7	15	9	10	10	8	145	4.3%	
561 Unauthorized burning		1				2		1					4	0.1%	
571 Cover assignment, standby, moveup	23	17	26	29	27	26	31	20	29	27	25	22	302	9.0%	
														<b>14.4%</b>	<b>481</b>
600 Good Intent call, other	1		1	2			1	1		1			7	0.2%	
611 Dispatched & canceled en route	1		1		1	1	2	1	3	5	10	2	27	0.8%	
621 Wrong location	1						1	1		1			4	0.1%	
622 No Incident found on arrival of Incident address	5	1	1	1	1		3	2	6	1	6	6	33	1.0%	
631 Authorized controlled burning			1							1			2	0.1%	
632 Prescribed fire								1					1	0.0%	
641 Vicinity alarm (Incident In other location)					1		1						2	0.1%	
651 Smoke scare, odor of smoke	1	3	3	1		1	4	2	3	2	1	4	25	0.7%	
652 Steam, vapor, fog or dust thought to be smoke			1					1				1	3	0.1%	
66 EMS call where party has been transported											1		1	0.0%	
671 Hazmat release Investigation w/ no hazmat					1							1	2	0.1%	
														<b>3.2%</b>	<b>107</b>
700 False alarm or false call, other			1		1	1		1	2	1			7	0.2%	
713 Telephone, malicious false alarm						1		1					2	0.1%	
715 Local alarm system, malicious false alarm						1							1	0.0%	
730 System malfunction, other	1	2		2									5	0.1%	
732 Extinguishing system activation due to malfunction							1						1	0.0%	
733 Smoke detector activation due to malfunction	1	1	1		1			1	1			1	7	0.2%	
735 Alarm system sounded due to malfunction		1	2	4	3	2	1	1	2	3	2		21	0.6%	
736 CO detector activation due to malfunction						1							1	0.0%	
74 Unintentional system/detector operation - no fire												1	1	0.0%	
740 Unintentional transmission of alarm, other		1	1			2	1	1	1		1		8	0.2%	
741 Sprinkler activation, no fire - unintentional			2			1							3	0.1%	
742 Extinguishing system activation	1											1	2	0.1%	
743 Smoke detector activation, no fire - unintentional	6	4	5	4	5	2	1	2	3	2	4	3	41	1.2%	
744 Detector activation, no fire - unintentional	3	1	3	3	2	2	5	2		3	1	2	27	0.8%	
745 Alarm system sounded, no fire - unintentional	21	7	10	11	9	6	16	5	8	13	10	7	123	3.7%	
746 Carbon monoxide detector activation, no CO	2		1			1		1		1		1	7	0.2%	
														<b>7.7%</b>	<b>257</b>
900 Special type of incident, other				1		2			1	1	1		6	0.2%	
														<b>0.2%</b>	<b>6</b>
Monthly Counts	298	262	284	289	281	291	282	280	276	294	256	251	3,344	100.0%	3344



## WHEN - Service Demand (Incident Frequency)

Call volume affects the amount of time a company is available to respond to emergencies within its respective first due area. Under optimal conditions, when stations are appropriately located, the call volume distribution should be evenly divided. This discussion on concentration focuses on fundamental workload issues. This section will break this volume of incidents down from macro to micro specifics:



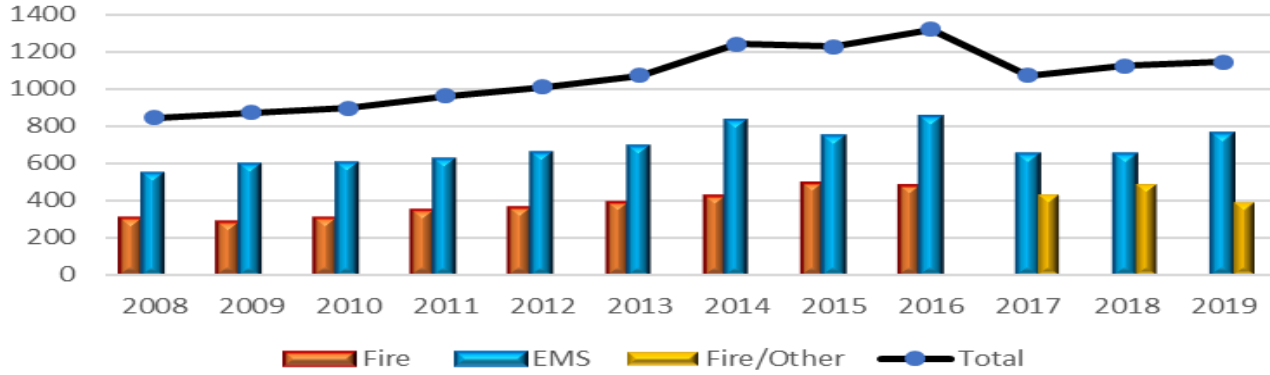
- ✚ YEARLY
- ✚ MONTHLY
- ✚ DAY OF WEEK
- ✚ HOUR OF DAY





## Incidents per Year

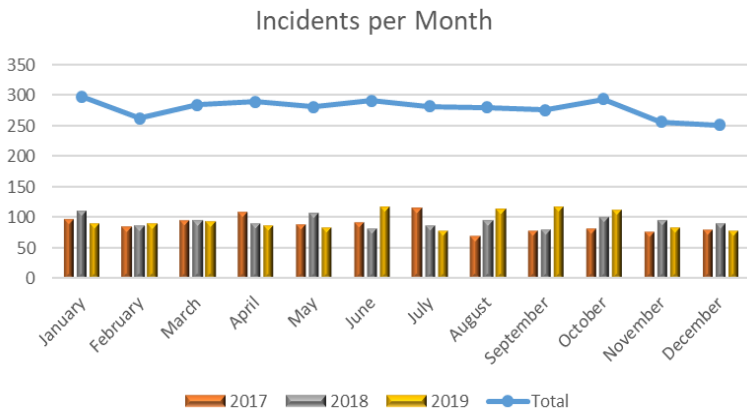
### Incidents per Year Total - Fire - EMS



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change from previous yr	2017-19
Total	844	873	896	961	1012	1072	1241	1229	1322	1072	1126	1146		3,344
Average per Day	2.3	2.4	2.5	2.6	2.8	2.9	3.4	3.4	3.6	2.9	3.1	3.1		
EMS	544	589	597	617	652	691	823	742	850	647	648	759	17%	2,054
Fire	300	284	299	344	360	381	418	487	472	98	138	105	-24%	341
OTHER										327	340	282	-17%	949
FIRE/OTHER Combined										425	478	387		1,290

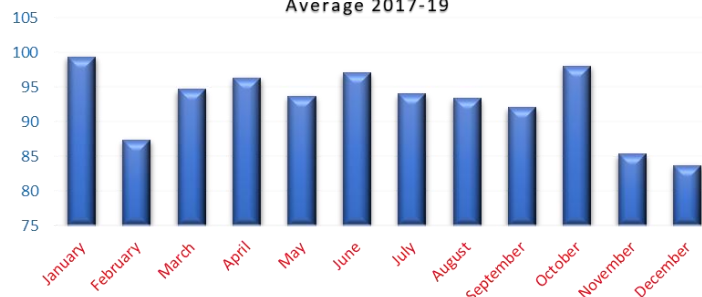
**\*\* Note - Incident data prior to 2016 was obtained from the District's Annual Reports. Prior to 2017 - that data set includes other non-incident type numbers related to District record keeping discretion**

## Incidents per Month



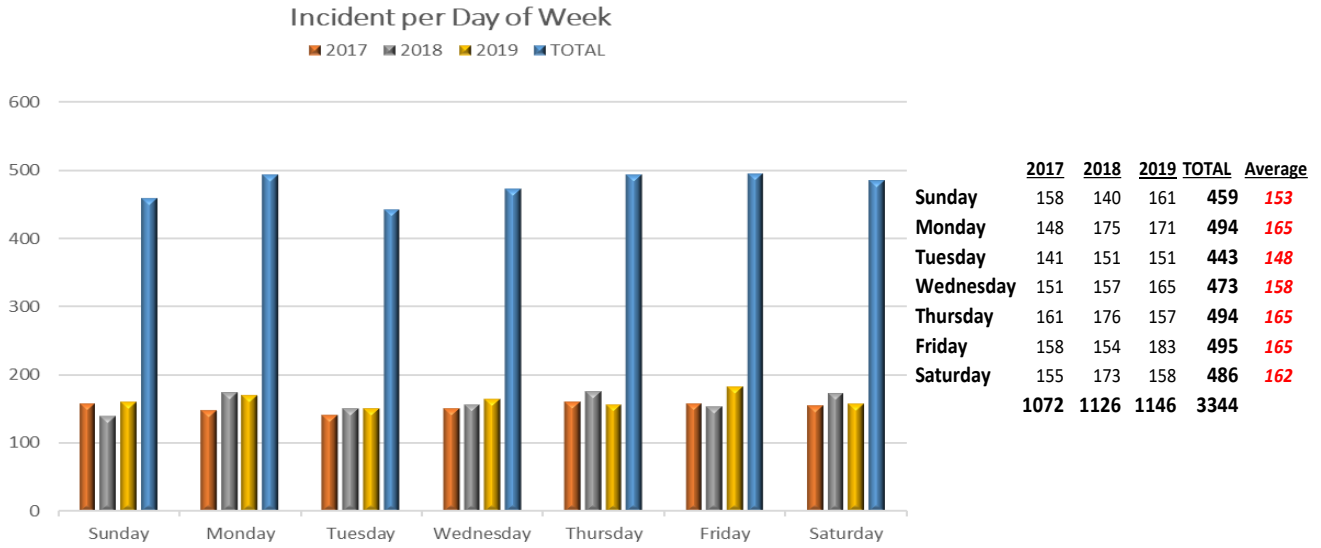
	2017	2018	2019 Total	Average
January	97	111	90	298 99
February	85	87	90	262 87
March	95	95	94	284 95
April	110	91	88	289 96
May	89	108	84	281 94
June	92	82	117	291 97
July	116	88	78	282 94
August	70	96	114	280 93
September	78	81	117	276 92
October	82	100	112	294 98
November	77	96	83	256 85
December	81	91	79	251 84
	1072	1126	1146	3344

### Incidents per Month Average 2017-19

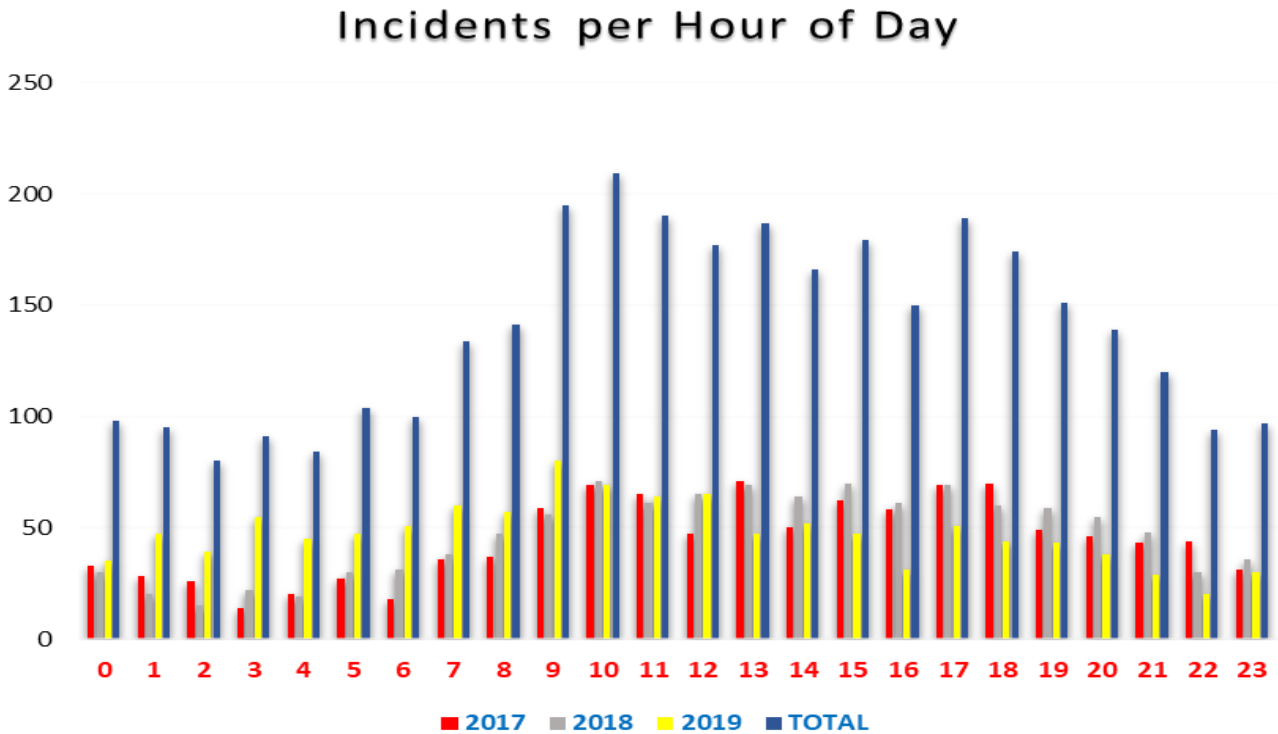




### Incidents per Day of Week



### Incidents per Hour of Day





**Incidents per Day of Week by Month (Temporal)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monday	50	38	38	56	53	46	33	30	35	47	34	34	494
Tuesday	45	37	37	39	37	41	42	26	34	44	30	31	443
Wednesday	53	27	40	36	43	33	42	45	30	44	42	38	473
Thursday	49	46	48	34	42	34	35	48	39	49	39	31	494
Friday	38	39	51	37	39	41	41	45	60	33	36	35	495
Saturday	32	33	38	35	37	46	43	53	39	45	41	44	486
Sunday	31	42	32	52	30	50	46	33	39	32	34	38	459
Total	298	262	284	289	281	291	282	280	276	294	256	251	3,344

**Incidents per Hour of Day by Day of Week (Temporal)**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
00:00-00:59	16	11	12	11	14	19	18	101
01:00-01:59	10	17	8	18	7	16	16	92
02:00-02:59	8	12	11	13	11	7	15	77
03:00-03:59	11	10	11	15	13	21	8	89
04:00-04:59	9	11	14	10	10	16	14	84
05:00-05:59	21	17	11	15	16	10	12	102
06:00-06:59	24	11	14	10	11	20	10	100
07:00-07:59	18	18	23	14	23	20	15	131
08:00-08:59	24	22	25	22	25	10	11	139
09:00-09:59	34	26	40	31	30	19	14	194
10:00-10:59	23	35	32	28	32	30	29	209
11:00-11:59	23	26	34	29	27	16	34	189
12:00-12:59	26	26	23	26	28	26	19	174
13:00-13:59	29	19	24	33	30	28	27	190
14:00-14:59	26	24	19	25	22	25	28	169
15:00-15:59	27	20	18	32	25	28	31	181
16:00-16:59	26	11	18	20	28	27	20	150
17:00-17:59	37	27	25	26	26	28	22	191
18:00-18:59	19	26	20	26	29	24	30	174
19:00-19:59	30	15	18	25	24	19	23	154
20:00-20:59	17	18	30	19	20	21	16	141
21:00-21:59	20	14	17	12	18	26	14	121
22:00-22:59	8	14	11	18	16	12	15	94
23:00-23:59	8	13	15	16	10	18	18	98
Total	494	443	473	494	495	486	459	3,344



### Incidents per Hour of Day by Month (Temporal)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
00:00-00:59	10	10	10	10	9	3	12	10	7	6	5	6	98
01:00-01:59	6	9	9	4	3	6	7	5	12	15	12	7	95
02:00-02:59	9	7	3	3	4	6	3	2	10	19	10	4	80
03:00-03:59	11	4	4	4	3	2	4	4	13	24	7	11	91
04:00-04:59	4	5	5	6	2	4	4	4	11	17	8	14	84
05:00-05:59	8	6	8	4	8	9	7	5	5	14	14	16	104
06:00-06:59	8	6	8	4	8	6	7	8	9	14	12	10	100
07:00-07:59	11	6	9	10	10	7	11	13	24	9	12	12	134
08:00-08:59	17	11	7	8	15	8	12	10	20	15	9	9	141
09:00-09:59	16	11	13	18	17	16	18	15	20	18	19	14	195
10:00-10:59	16	18	18	22	15	18	12	14	21	14	17	24	209
11:00-11:59	15	23	20	18	22	8	13	17	13	11	16	14	190
12:00-12:59	13	18	15	17	17	7	17	11	16	14	15	17	177
13:00-13:59	15	13	18	22	23	18	14	15	16	9	14	10	187
14:00-14:59	15	14	17	11	18	21	10	16	11	12	8	13	166
15:00-15:59	14	11	14	24	21	17	12	17	12	17	8	12	179
16:00-16:59	13	13	13	16	14	13	14	16	7	11	11	9	150
17:00-17:59	20	16	18	18	16	27	20	15	14	10	7	8	189
18:00-18:59	16	11	21	11	15	20	13	16	14	12	15	10	174
19:00-19:59	14	8	10	16	8	17	30	18	7	9	8	6	151
20:00-20:59	15	16	10	20	8	13	15	11	8	6	6	11	139
21:00-21:59	9	11	11	11	10	17	13	15	3	7	8	5	120
22:00-22:59	11	6	13	5	8	17	7	10	1	4	10	2	94
23:00-23:59	12	9	10	7	7	11	7	13	2	7	5	7	97
<b>Monthly Counts</b>	<b>298</b>	<b>262</b>	<b>284</b>	<b>289</b>	<b>281</b>	<b>291</b>	<b>282</b>	<b>280</b>	<b>276</b>	<b>294</b>	<b>256</b>	<b>251</b>	<b>3,344</b>

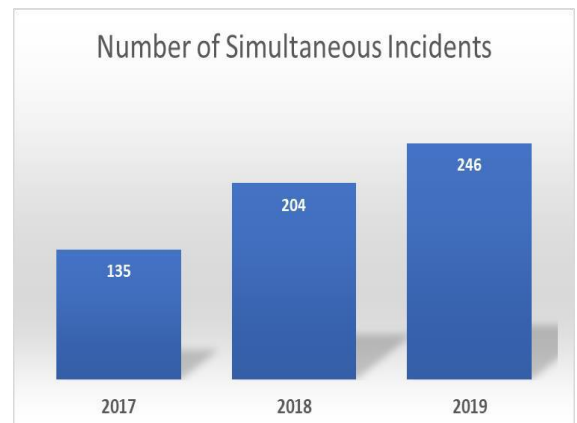
### Simultaneous Incidents

Emergency Incidents are usually not scheduled events. As such, as to call volume increases, it is reasonable to expect other incidents to occur concurrently before the initial incident concluding with units back in service.

Historically, for this study period, the following simultaneous incidents occurred after the first initial call. These would be in addition to that first incident (add +1 to each).

#### 2017-2019

- 21.47%** for 1 or more simultaneous incidents = 2+ concurrent calls
- 04.36%** for 2 or more simultaneous incidents = 3+ concurrent calls
- 01.83%** for 3 or more simultaneous incidents = 4+ concurrent calls
- 01.22% for 4 or more simultaneous incidents = 5+ concurrent calls
- 01.05% for 5 or more simultaneous incidents = 6+ concurrent calls
- 00.87% for 6 or more simultaneous incidents = 7+ concurrent calls





## WHERE – Incident Location



### Property Use

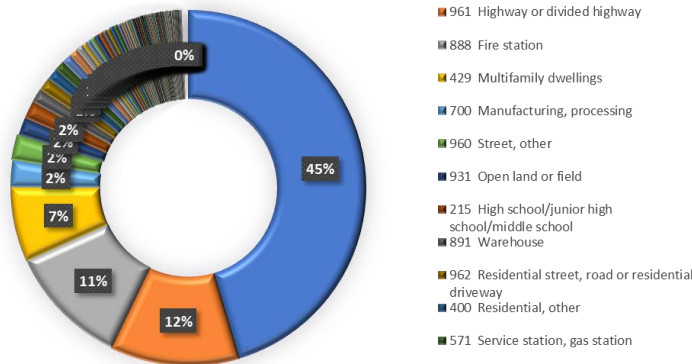
The location of an incident can be categorized by use type of structure or physical outside location.

# 1 location for all responses in District is in **Residential – 45%**.

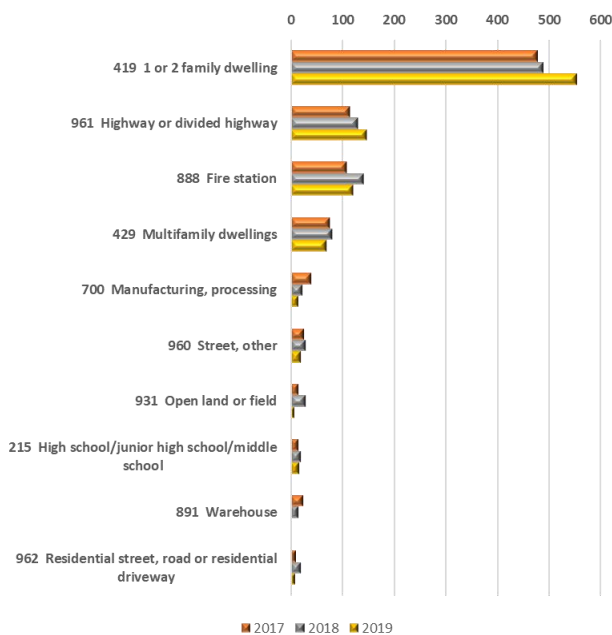
Followed by:  
 Highway **12%**  
**Fire Station 11%**  
 Multifamily **7%**  
 Manufacturing **2%**  
 Street **2%**  
 Open Field **2%**  
**= 77% of all Incidents**

### Top Ten Incident Locations

2017-2019



### Incidents by Location Type



### High Frequency Incident Locations

Common Addresses	Description	# Incidents
7550 W JOLIET RD	Fire Station 14	101
5500 W MAIN ST	Monee Station 44	69
711 PENFIELD ST	Beecher Station 44	66
13 S WALNUT ST	Manteno Station 1	64
1 BLUE DEVIL DR	Peotone Jr High School	32
605 W NORTH ST	Peotone High School	27
700 ORIOLE DR	Circle K Gas Station (57/Wilmington Rd)	22
450 CENTRAL AVE	Lineage Logistics (U.P.)	18
208 E MAIN ST	Peotone Police Department	18
701 S GOVERNORS HWY	Pearl Dodge	17
422 S GOVERNORS HWY	Sunset Plaza	15
710 S WEST ST	Will County Fair Grounds	14
900 W WILMINGTON	Casey's General Store	10
426 N CONRAD ST	Peotone Elementary School	9
2101 W DRALLE RD	Blue Linx Warehouse (U.P.)	9
12151 W WILMINGTON RD	Christansen Farms	9
930 COUNTRY CREEK DR	New Lenox Station 61	8
261 E MAPLE ST	New Lenox Station 63	7
2601 BOND ST	Wilkens Food Service (U.P.)	7
701 ORIOLE DR	McDonalds	6
26730 S STONEY ISLAND AVE	Crete Twp Station 41	6
1201 TEAL AVE	Swansons Warehouse	6



Year	2017	2018	2019	Totals	
1 419 1 or 2 family dwelling	477	488	553	<b>1,518</b>	45%
2 961 Highway or divided highway	115	130	148	<b>393</b>	12%
3 888 Fire station	109	141	122	<b>372</b>	11%
4 429 Multifamily dwellings	76	81	70	<b>227</b>	7%
5 700 Manufacturing, processing	41	24	16	<b>81</b>	2%
6 960 Street, other	26	30	21	<b>77</b>	2%
7 931 Open land or field	16	30	8	<b>54</b>	2%
8 215 High school/junior high school/middle school	16	21	17	<b>54</b>	2%
9 891 Warehouse	25	15	3	<b>43</b>	1%
10 962 Residential street, road or residential driveway	11	21	9	<b>41</b>	1%
11 400 Residential, other		1	34	<b>35</b>	1%
12 571 Service station, gas station	10	10	12	<b>32</b>	1%
13 579 Motor vehicle or boat sales, services, repair	15	9	5	<b>29</b>	1%
14 161 Restaurant or cafeteria	8	12	6	<b>26</b>	1%
15 UUU Undetermined	5	10	5	<b>20</b>	1%
16 599 Business office	9	3	3	<b>15</b>	0%
17 150 Public or government, other	7	2	6	<b>15</b>	0%
18 963 Street or road in commercial area	5	1	8	<b>14</b>	0%
19 808 Outbuilding or shed	2	7	5	<b>14</b>	0%
20 131 Church, mosque, synagogue, temple, chapel	6	1	7	<b>14</b>	0%
	3		11	<b>14</b>	0%
519 Food and beverage sales, grocery store	4	5	3	<b>12</b>	0%
365 Police station	7	4	1	<b>12</b>	0%
162 Bar or nightclub	3	4	5	<b>12</b>	0%
951 Railroad right of way	3	4	3	<b>10</b>	0%
311 24-hour care Nursing homes, 4 or more persons	6	3		<b>9</b>	0%
213 Elementary school, including kindergarten	4	3	2	<b>9</b>	0%
669 Forest, timberland, woodland	1	4	3	<b>8</b>	0%
935 Campsite with utilities	4	2	1	<b>7</b>	0%
900 Outside or special property, other	1	3	3	<b>7</b>	0%
580 General retail, other	5	2		<b>7</b>	0%
120 Variable use amusement, recreation places		5	2	<b>7</b>	0%
965 Vehicle parking area	1	4	1	<b>6</b>	0%
819 Livestock, poultry storage	2		4	<b>6</b>	0%
655 Crops or orchard	1	2	3	<b>6</b>	0%
NNN None	1	2	2	<b>5</b>	0%
936 Vacant lot		3	2	<b>5</b>	0%
839 Refrigerated storage	2	3		<b>5</b>	0%
816 Grain elevator, silo	1		4	<b>5</b>	0%
642 Electrical distribution	1	1	3	<b>5</b>	0%
549 Specialty shop	1		4	<b>5</b>	0%
500 Mercantile, business, other	2	2	1	<b>5</b>	0%
361 Jail, prison (not juvenile)		3	2	<b>5</b>	0%
124 Playground	4		1	<b>5</b>	0%





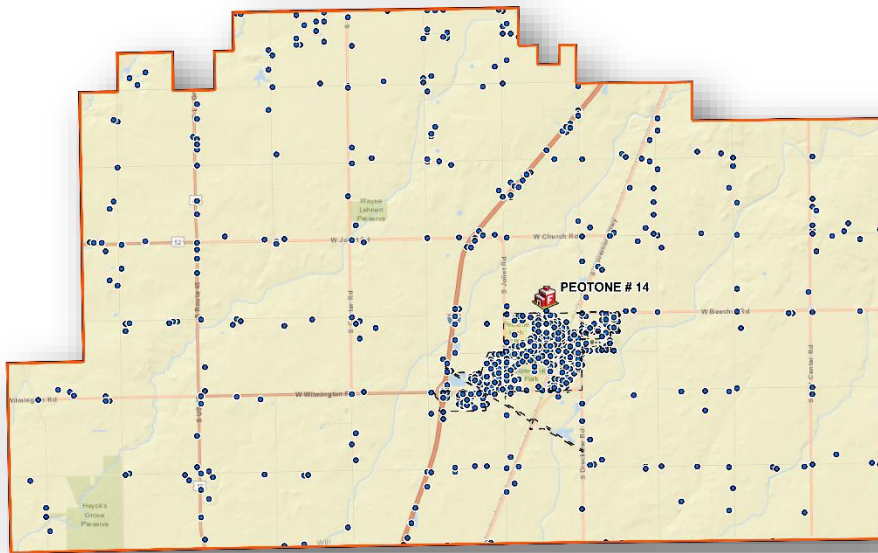
### Geolocation - On Map

The following maps indicate incident locations (as a dot) and frequency (on heat map) for the period listed.

**NOTE: The following maps were produced for the 3-year GIS study period from August 2016 – August 2019.**

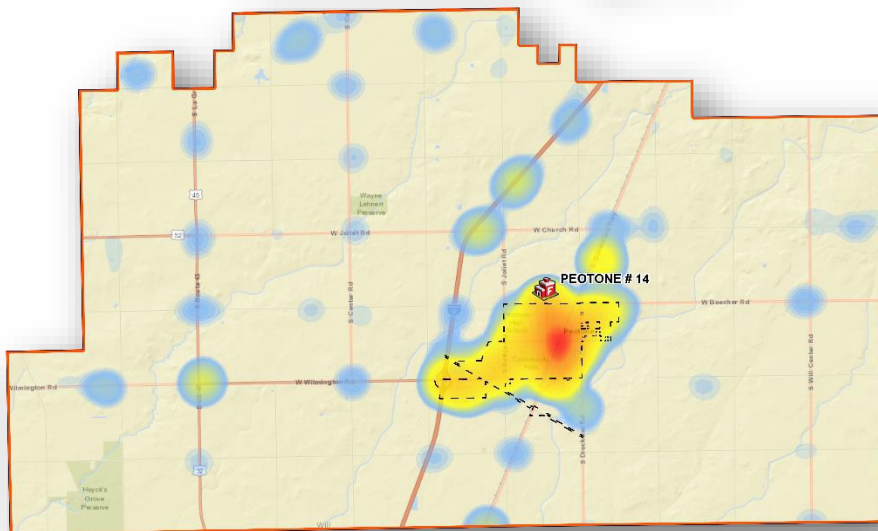
**The data elsewhere in this study was chosen to be for the full calendar years 2017-2019.**

**All Incidents: Aug. 2016 - Aug. 2019  
Incident Count: 2,403**



**All Incidents: Aug. 2016 - Aug. 2019  
Incident Count: 2,403**

NFIRS Incident Density  
Lower Frequency  
Higher Frequency





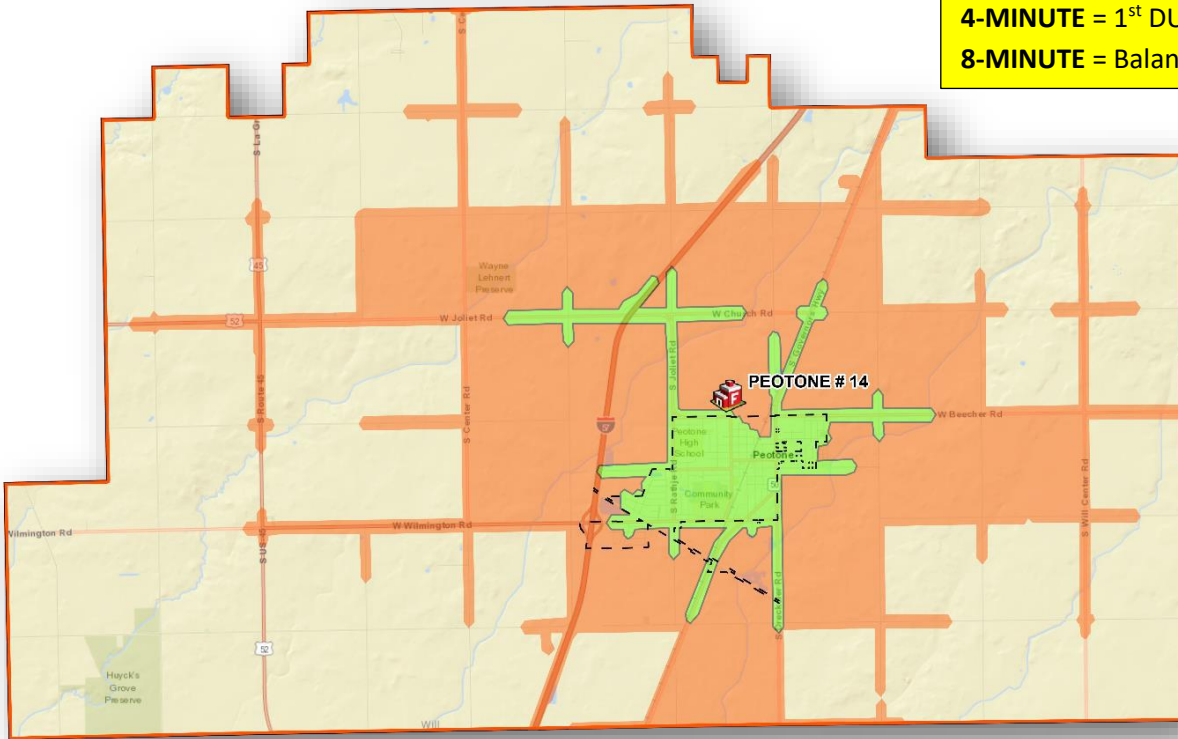
### Travel Times

These maps indicate the estimated travel time from the fire station minute by minute and the highlighted benchmark map indicating the 4-minute and 8-minute service area capabilities.

#### Fire Station Drive Times

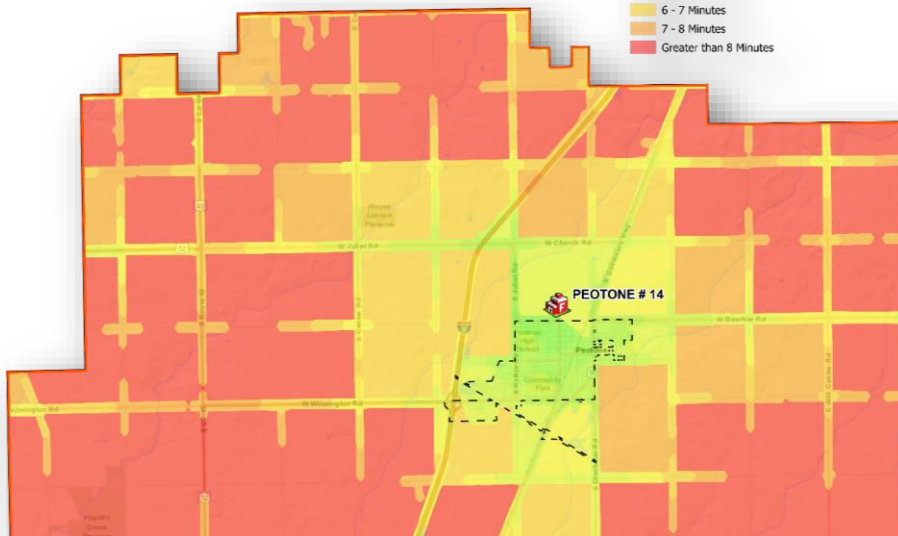
- Less than 4 Minutes
- 4 - 8 Minutes

**BENCHMARK TRAVEL TIME**  
**4-MINUTE = 1<sup>ST</sup> DUE**  
**8-MINUTE = Balance of Alarm**



#### Fire Station Drive Times

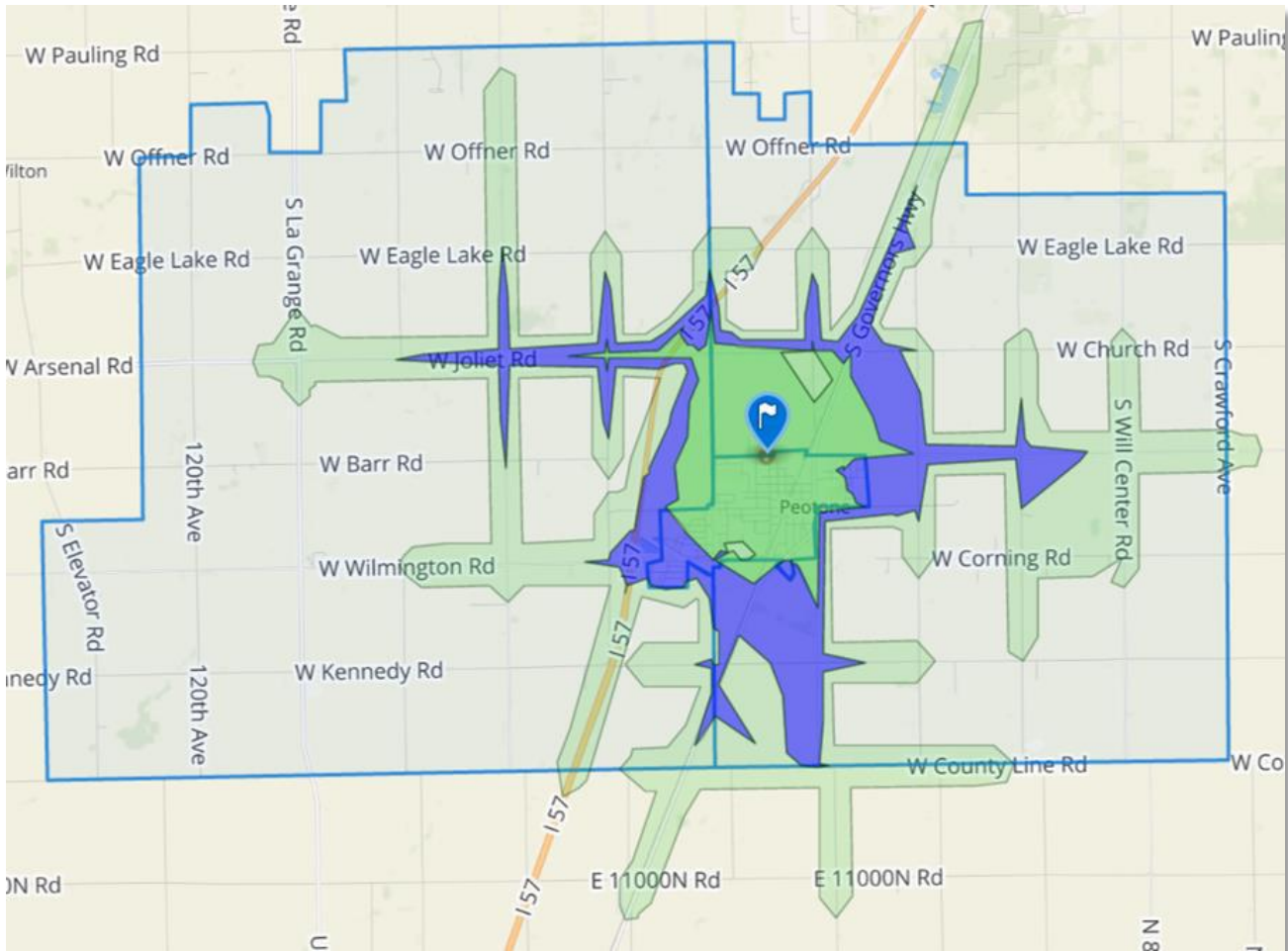
- Less than 1 Minute
  - 1 - 2 Minutes
  - 2 - 3 Minutes
  - 3 - 4 Minutes
  - 4 - 5 Minutes
  - 5 - 6 Minutes
  - 6 - 7 Minutes
  - 7 - 8 Minutes
  - Greater than 8 Minutes
- Municipal Boundaries





### FireCares.org Map

The GIS (Geographical Information System) data and mapping were verified by a second source from [www.FireCares.org](http://www.FireCares.org). Once the staff corrected and updated the information and data on this site, it provides validation to this study's efforts. It is available on-line for future reference as an excellent source.



"Travel" Service area from Fire Station [ < 4 – 6 – 8 minute]

0-4 minute – Green

4-6 minute – Purple

6-8 minute – Light Green

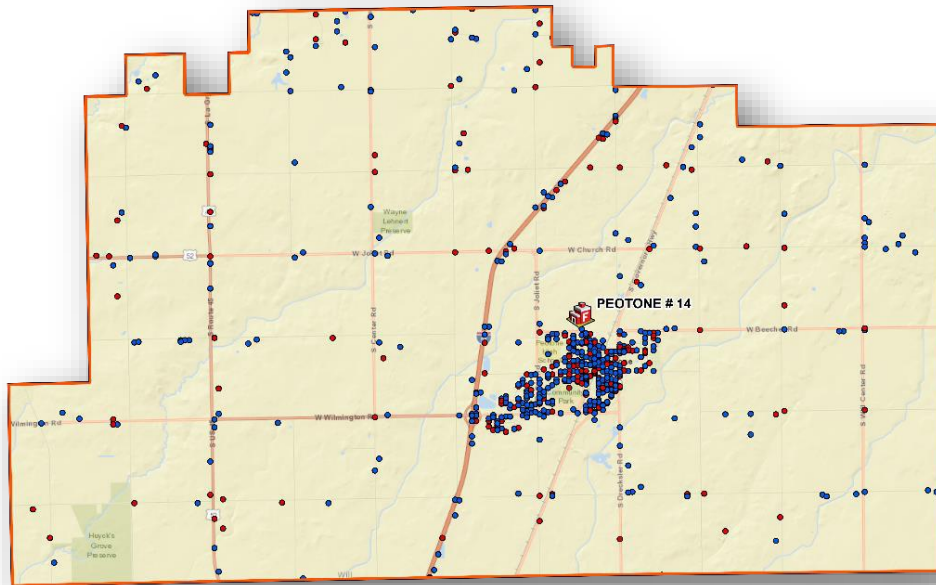


## Location & Frequency: Daytime Hours

**AM Incidents: Aug. 2016 - Aug. 2019**  
**Incident Count: 1,528**

AM Incidents (0700 - 1900 hours)

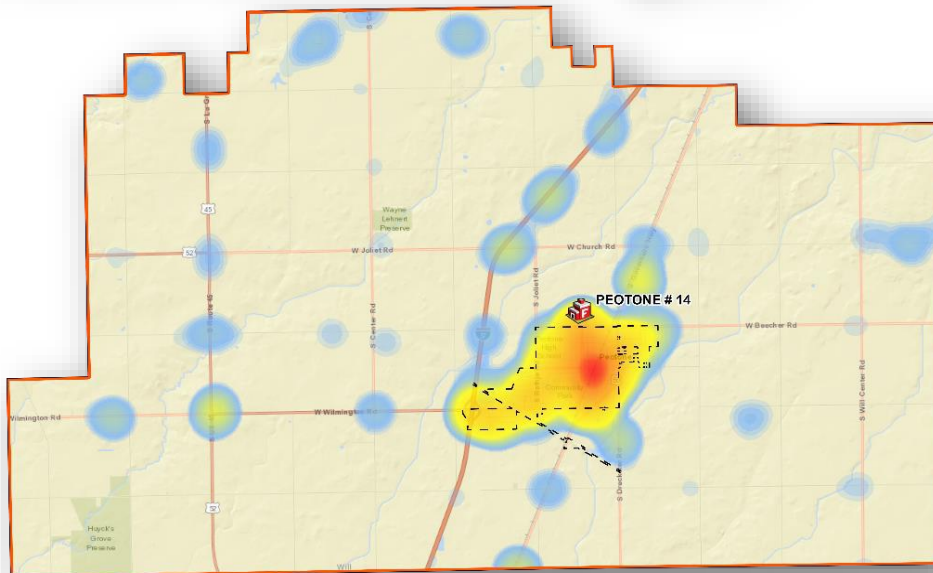
- All other NFIRS Codes
- NFIRS 300 (EMS)



**AM Incidents (0700 - 1900 hours)**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 1,528**

NFIRS Incident Density

- Lower Frequency
- Higher Frequency



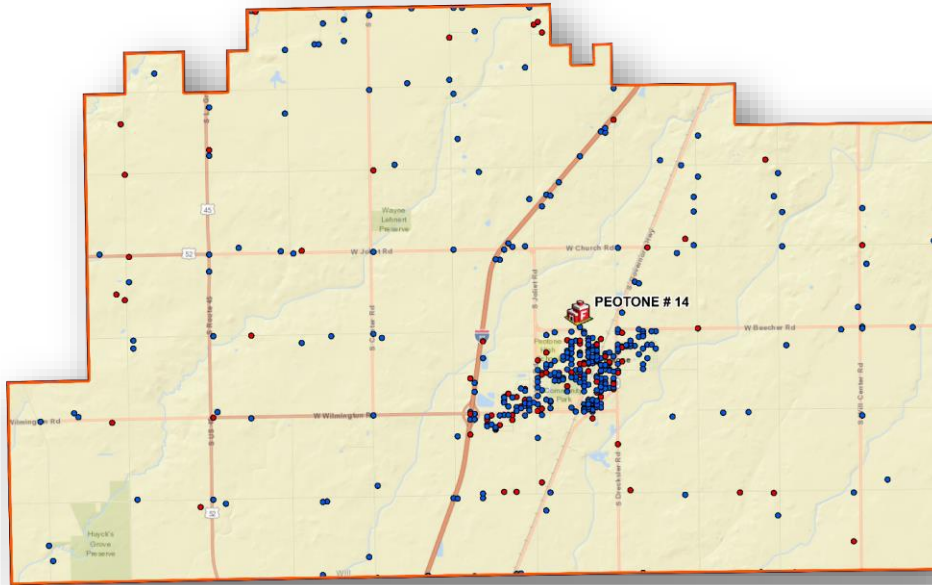


### Location & Frequency: Night-time Hours

**PM Incidents: Aug. 2016 - Aug. 2019**  
**Incident Count: 875**

PM Incidents (2000 - 0600 hours)

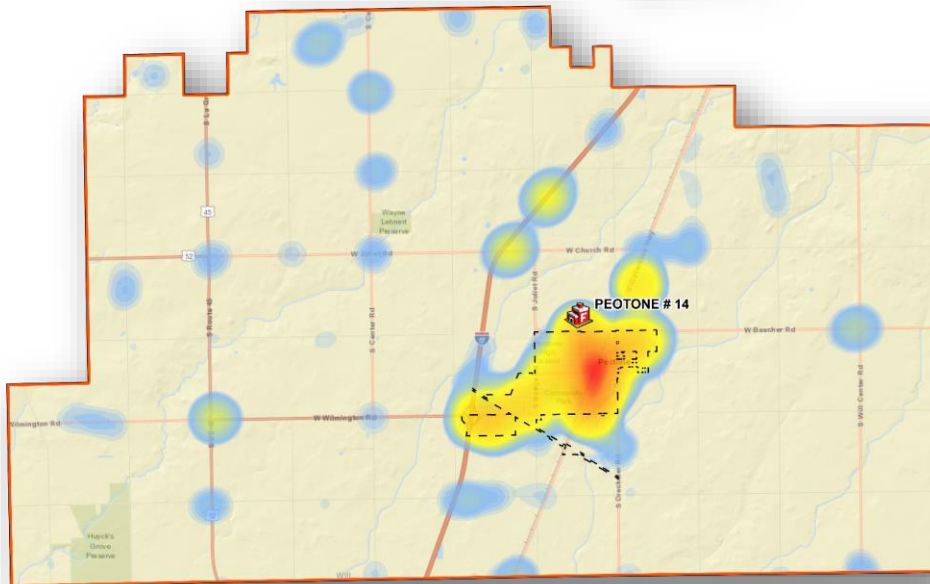
- All other NFIRS Codes
- NFIRS 300 (EMS)



**PM Incidents: Aug. 2016 - Aug. 2019**  
**Incident Count: 875**

NFIRS Incident Density

- Lower Frequency
- Higher Frequency

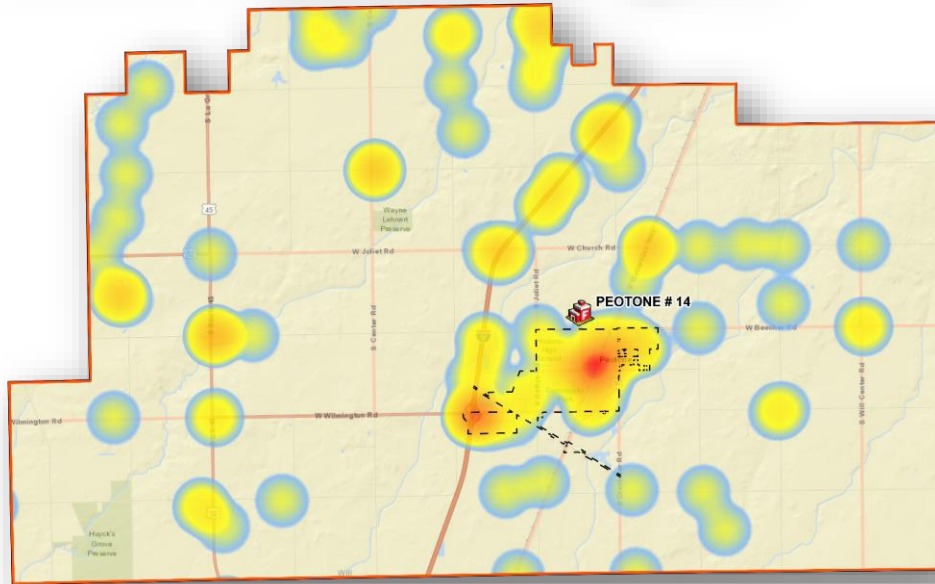


### NFIRS Type Coded – Incident Frequency (Heat Maps)



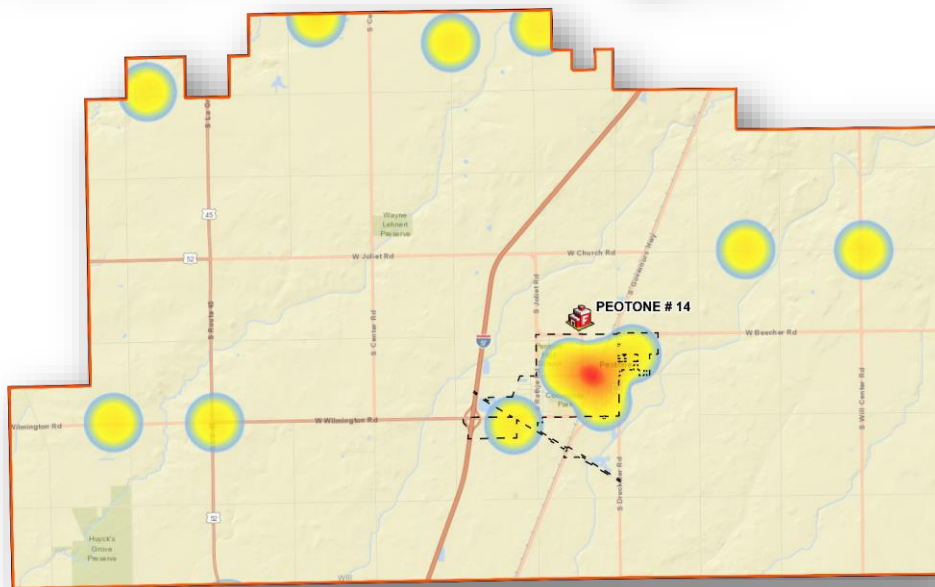
**NFIRS 100 (Fire) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 115**

**NFIRS Incident Density**



**NFIRS 111 (Structure Fire) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 17**

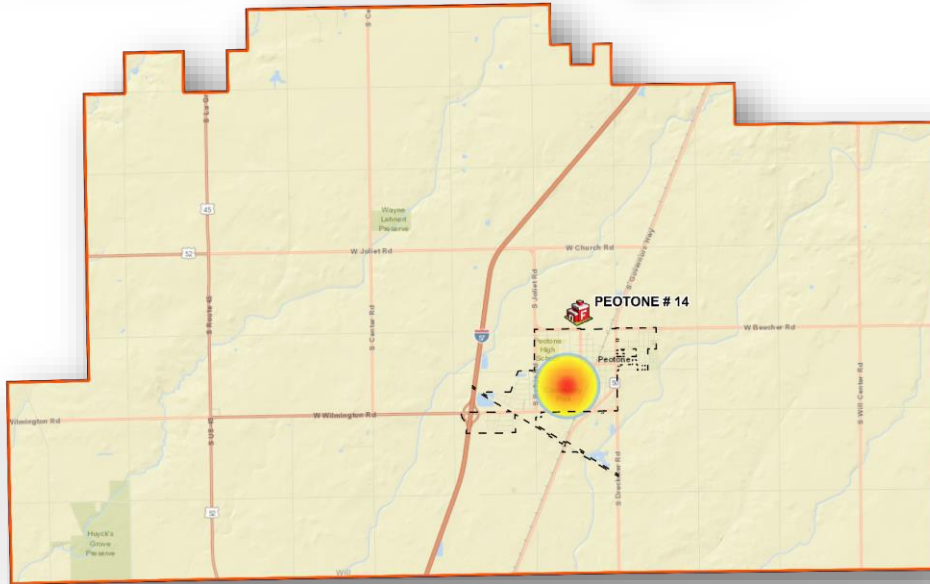
**NFIRS Incident Density**





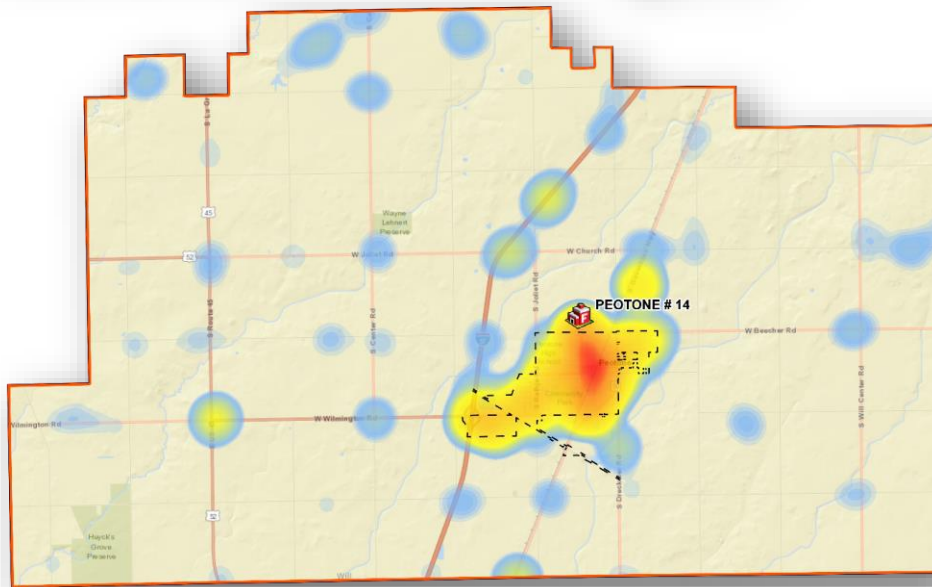
**NFIRS 200 (Overpressure) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 1**

**NFIRS Incident Density**



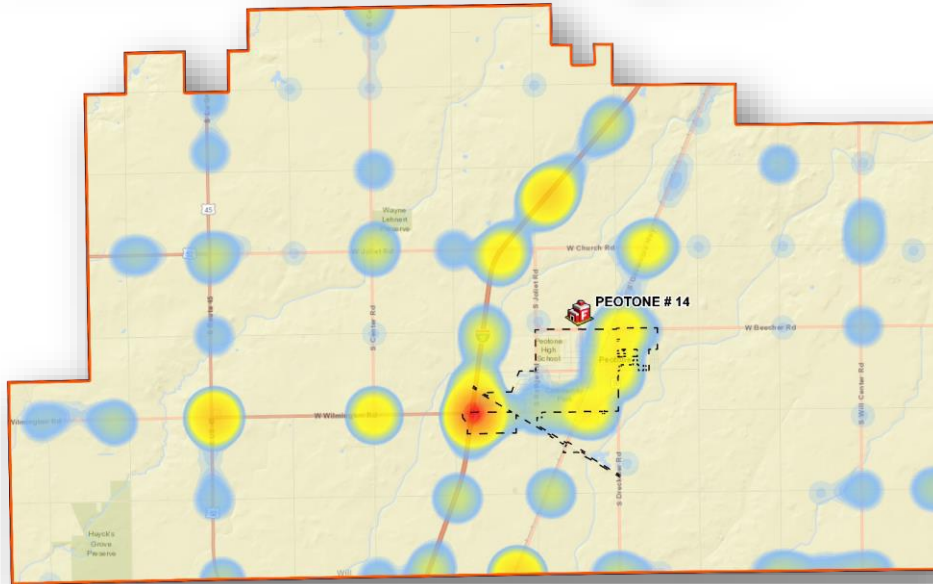
**NFIRS 300 (EMS) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 1,810**

**NFIRS Incident Density**

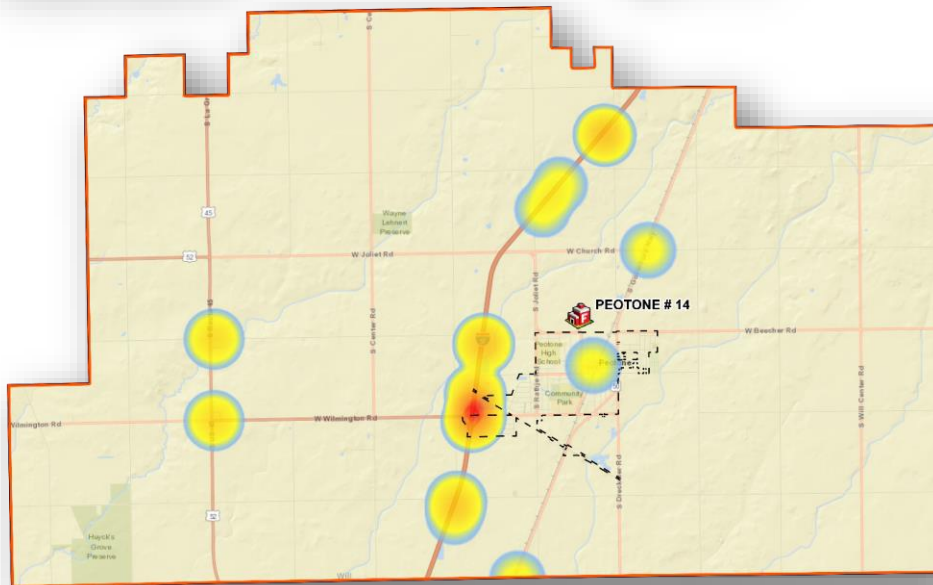
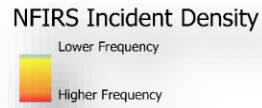




**NFIRS 322 (EMS Accidents with Injury) Incidents**    NFIRS Incident Density  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 269**



**NFIRS 324 (EMS Accidents - No Injuries) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 25**

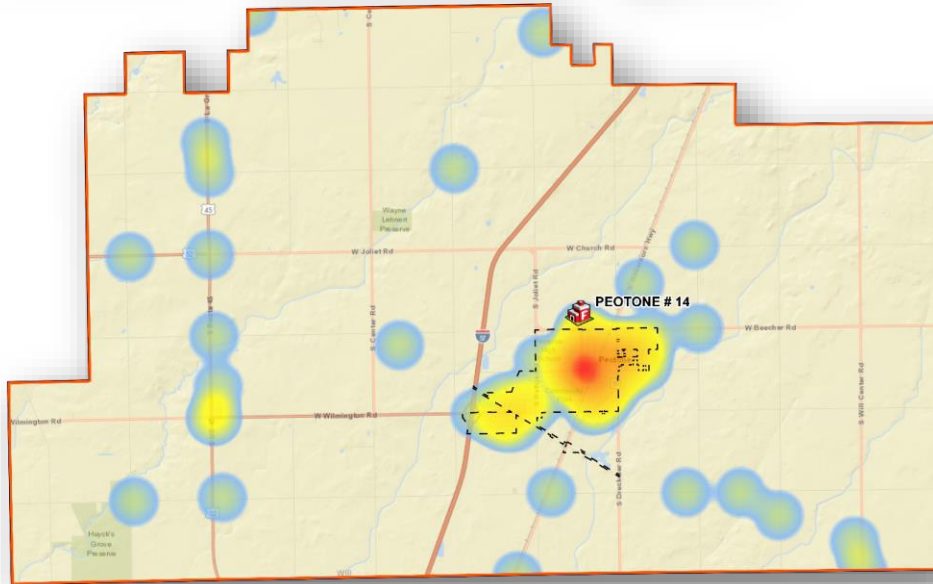






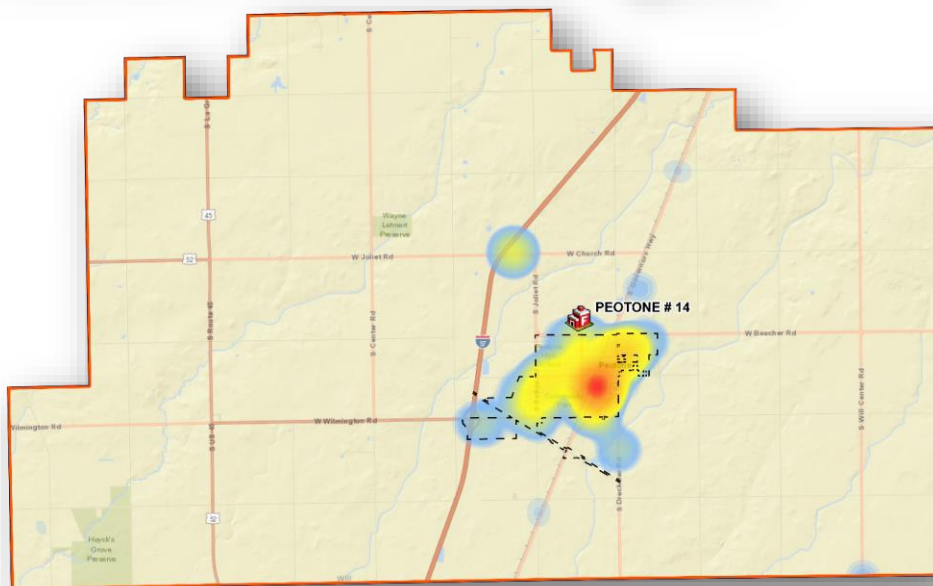
**NFIRS 400 (Hazardous/Hazmat) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 73**

**NFIRS Incident Density**



**NFIRS 500 (Service) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 211**

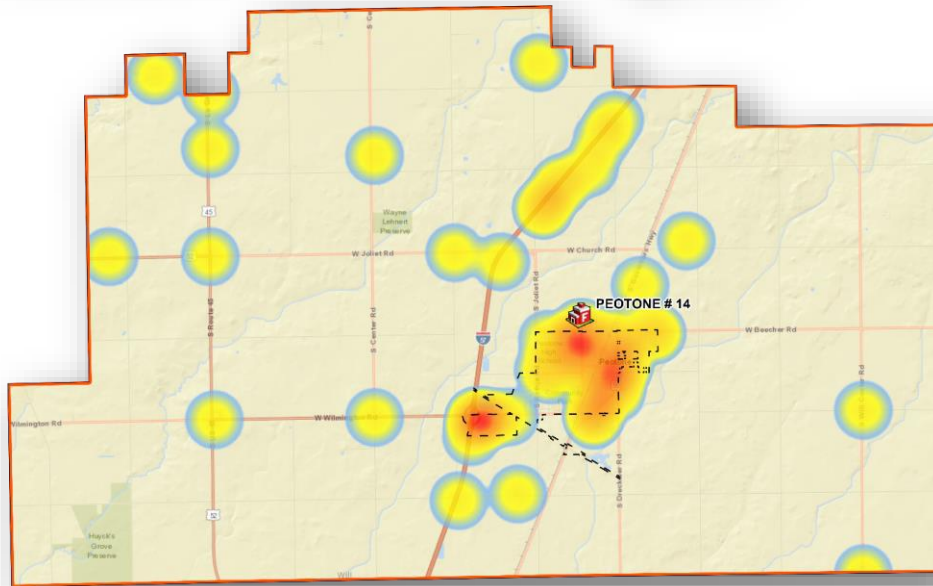
**NFIRS Incident Density**





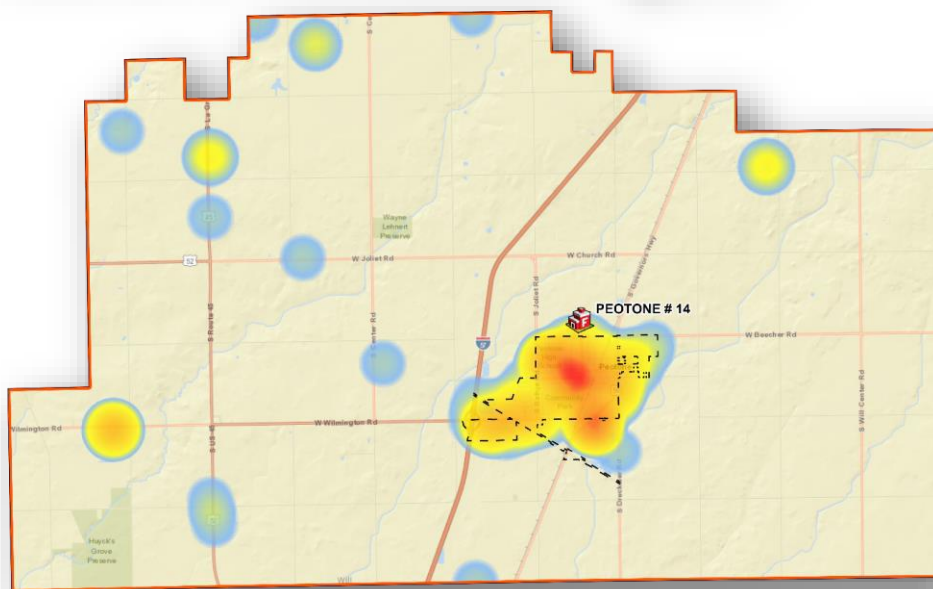
**NFIRS 600 (Canceled/Good Intent) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 55**

**NFIRS Incident Density**



**NFIRS 700 (False Call) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 135**

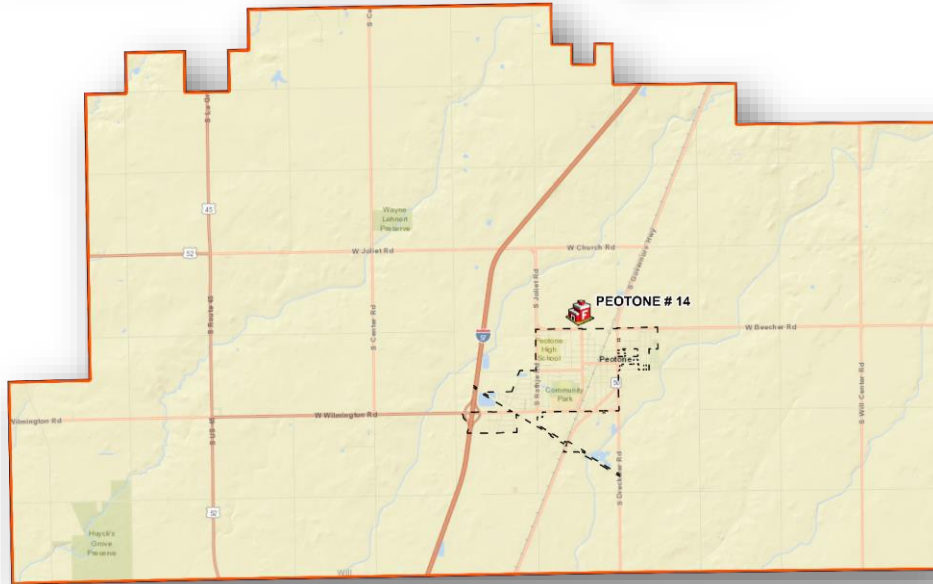
**NFIRS Incident Density**





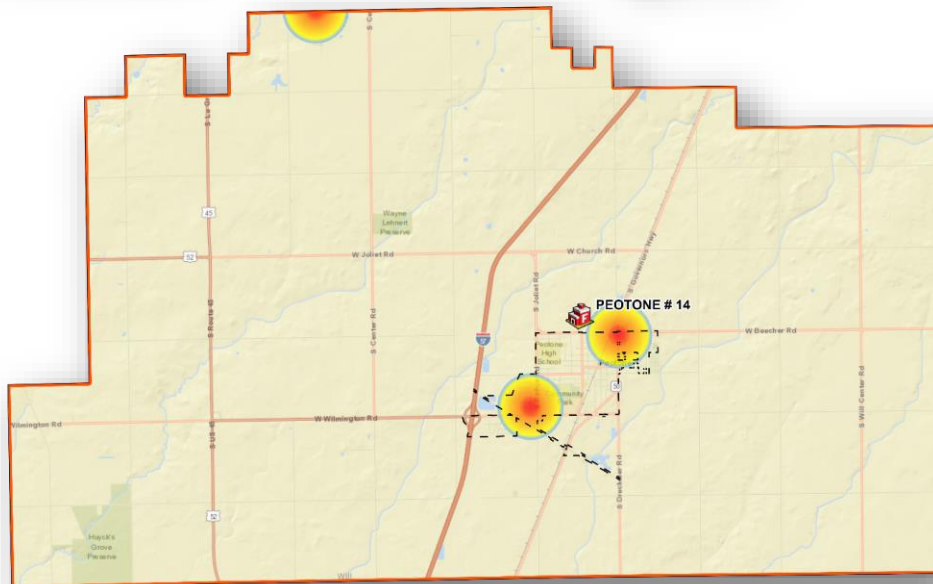
**NFIRS 800 (Weather) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 0**

**NFIRS Incident Density**



**NFIRS 900 (Special) Incidents**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 3**

**NFIRS Incident Density**

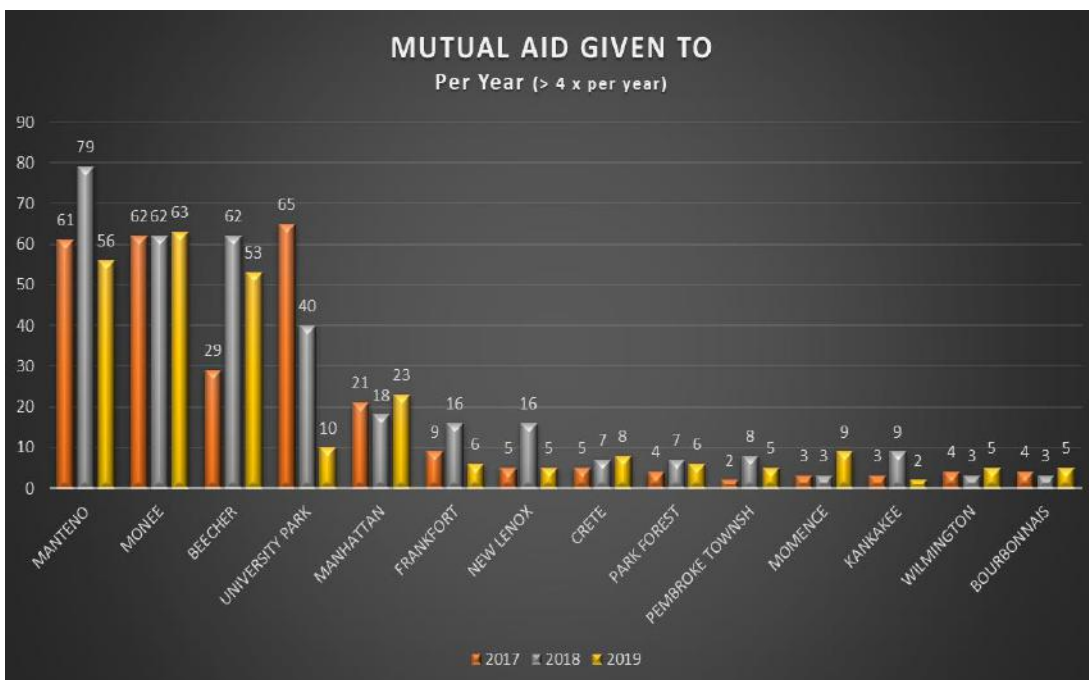
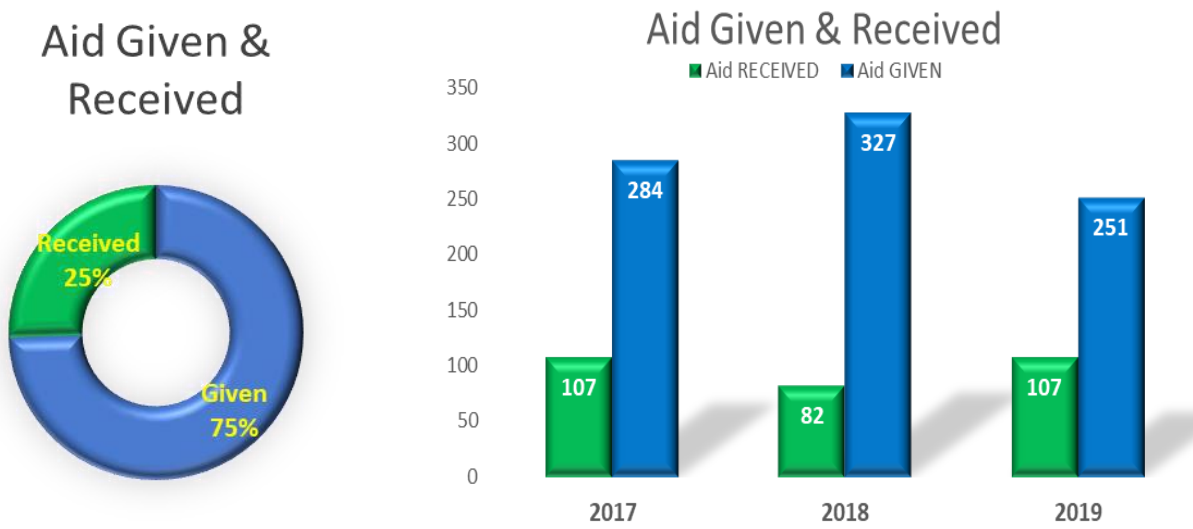




## WHERE – Jurisdictions (Aid Agreements)

### MUTUAL AID GIVEN

The District is an active participant in Automatic and Mutual Aid, locally, regionally, and nationally. Illinois has been the national leader in resource sharing through the Mutual Aid Box Alarm System (MABAS) that has been established. The MABAS system provides a structure to share specialized resources throughout the state. Automatic aid is defined as a response agreement with another Fire District, where units are dispatched by the same dispatch center and dispatched on the initial alarm or dispatch, based on proximity to the emergency, without regard to District boundaries. Units are not on the initial alarm or dispatch. MABAS guidelines generally govern mutual aid. The District has a strong resource sharing agreement, as illustrated.

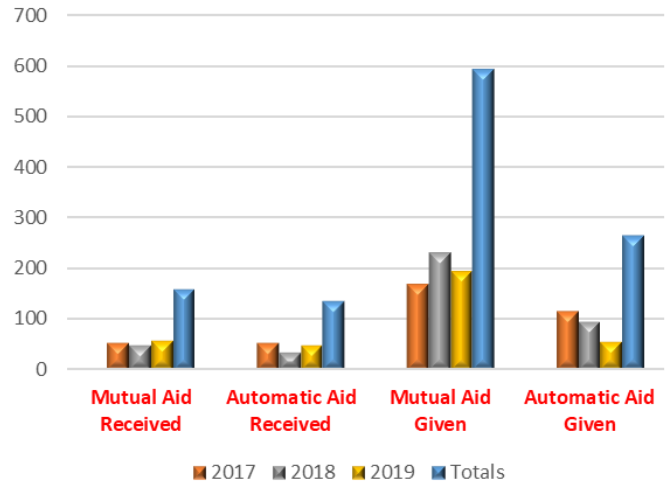




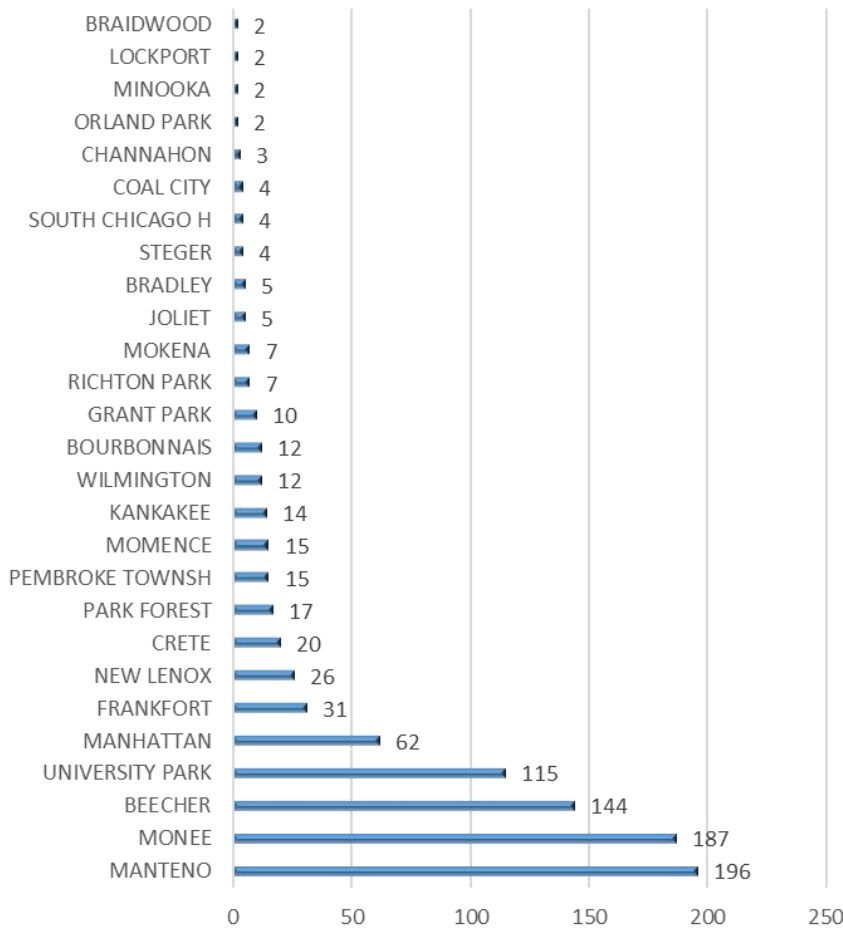
## MUTUAL AID RECEIVED

		Incidents Involving Aid			
2017-19					
<b>TOTAL INCIDENTS</b>	<b>3344</b>				
<b>AID INVOLVED</b>	<b>1162</b>	<b>35%</b>			
		% of Incidents Involving Aid			
	% of Aid Involved	Mutual Aid		Auto Aid	
<b>Given</b>	866	75%	599	52%	267
<b>Received</b>	296	25%	160	14%	136
	<b>1162</b>				<b>23%</b>
		% of Aid Type			
Fires	264	23%			
EMS	320	28%			
Other	578	50%			
	<b>1162</b>				

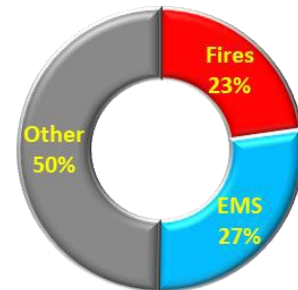
## Automatic / Mutual Aid Given & Received



## MUTUAL AID GIVEN TO 2017-2019



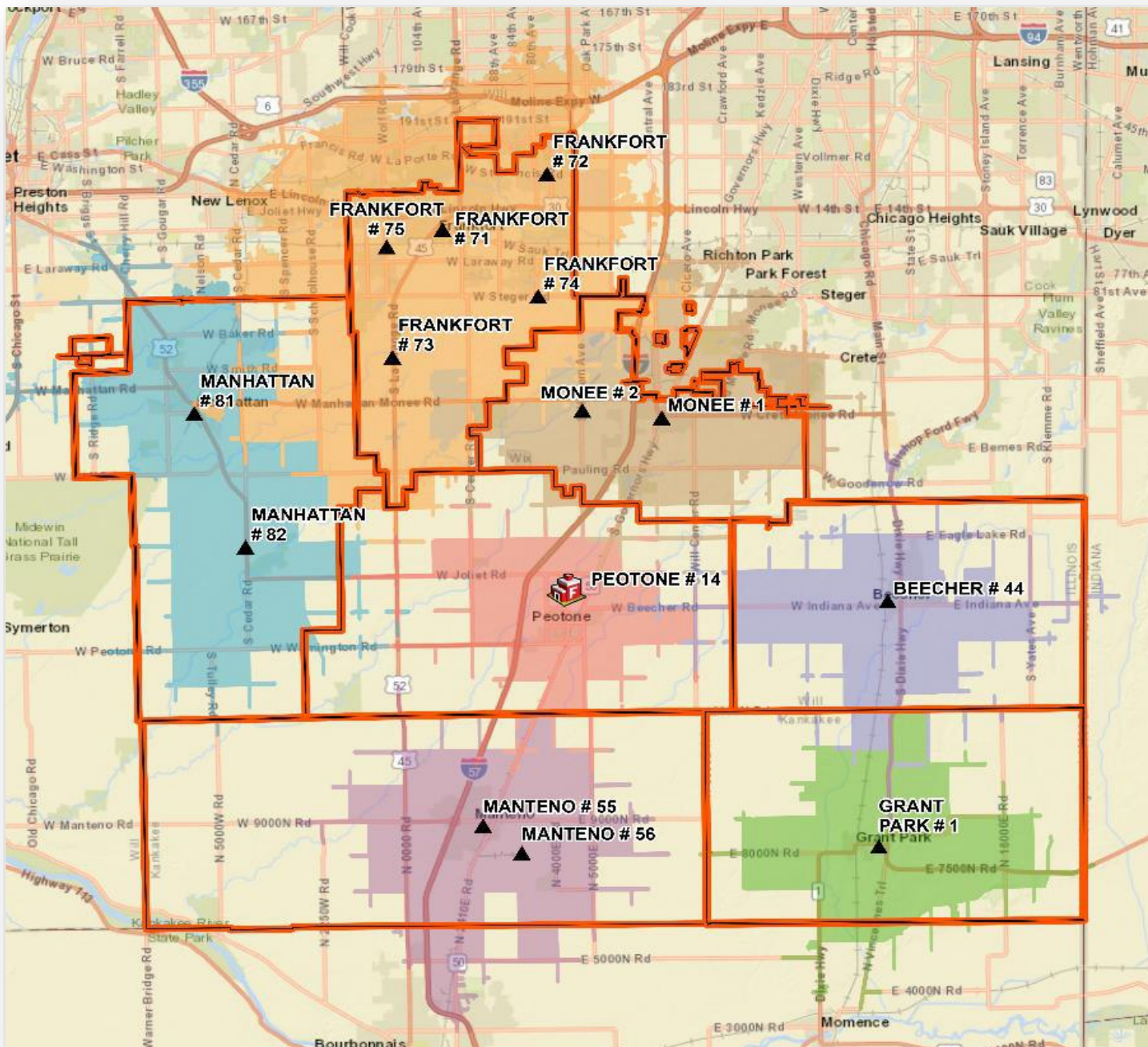
## Aid by Type





### Surrounding Fire Districts

Below is a representation of the surrounding town's Fire District 8-minute travel time response capabilities. This is a significant factor in helping establish timely Effective Response Force (ERF) capabilities that rely heavily on mutual aid company support.



SURROUNDING DISTRICTS 8-MINUTE RESPONSE CAPABILITIES



## WHO – Response Resources



### Unit Workload

An essential workload indicator is not only the number of responses per unit, but the time spent on those responses. The amount of time a unit is unavailable is a crucial factor in analyzing concentration and reliability. One workload issue is the number of calls that a unit services within its first due area versus the number it responds to outside of its first due area known as reliability.

There are, generally, three (3) reasons for **responses** outside of the first due area:

- Concurrent calls outside a units Area of Responsibility
- Calls requiring multiple units
- Specialty unit capabilities that take the unit out of its primary first due to provide services to the larger area.

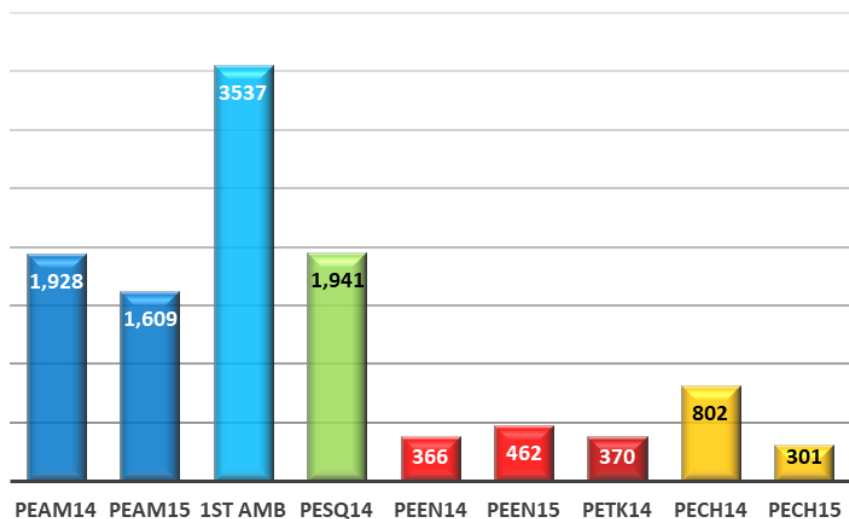
Fire, rescue, and EMS calls routinely require adjacent units and will be discussed further in this section. This section analyzes the Station, the Shifts, and the Units who responded to the Incidents.

### Incidents by Unit

The number of incidents per unit from 2017-2019 is indicated below.

**\*1<sup>st</sup> Ambulance is representative of the combined total responses of Ambulance 14 and Ambulance 15 as District practice is to rotate these units to front line status each month to reduce wear and tear.**

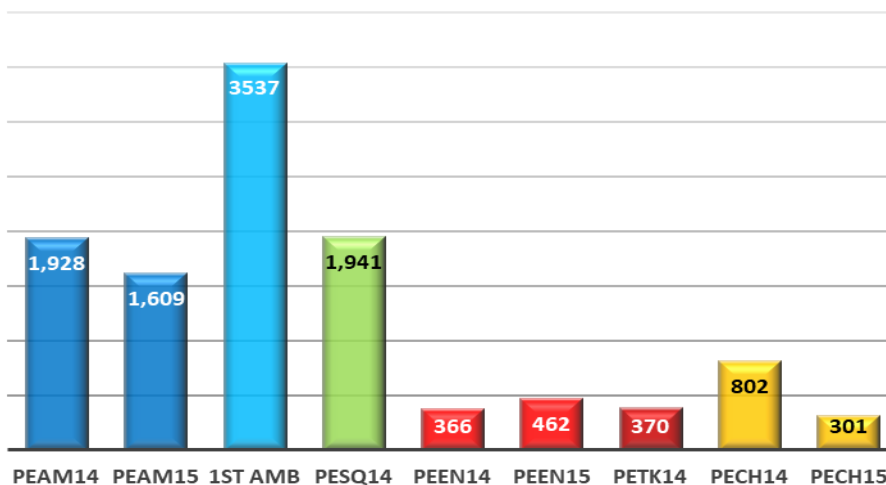
**INCIDENT RESPONSES PER UNIT**  
2017-2019



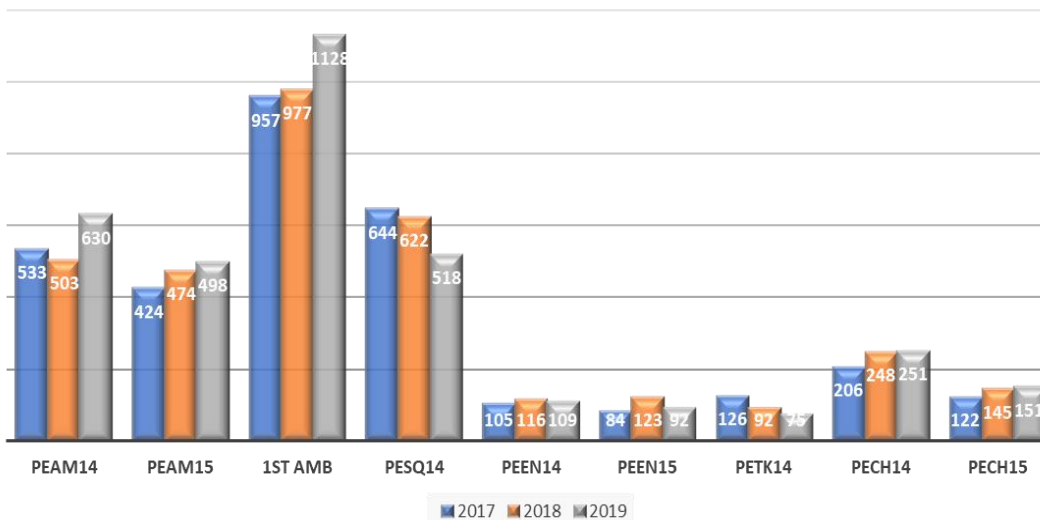


	2017	2018	2019	2017-19	Average
PEAM14	533	503	630	<b>1,928</b>	555
PEAM15	424	474	498	<b>1,609</b>	465
1st AMB	957	977	1128	<b>3537</b>	1021
PESQ14	644	622	518	<b>1,941</b>	595
PEEN14	105	116	109	<b>366</b>	110
PEEN15	84	123	92	<b>462</b>	100
PETK14	126	92	75	<b>370</b>	98
PECH14	206	248	251	<b>802</b>	235
PECH15	122	145	151	<b>301</b>	139

Incident Responses per Unit  
2017-2019



Incident Responses per Unit per Year  
2017-2019







## Unit Hour Utilization / UHU

Unit workload is an essential measure in the analysis. Unit Hour Utilization (UHU) is an accepted measurement tool to evaluate response workloads. UHU considers the number of incidents, time committed against the total potential time available. The following formula is utilized:

$$\frac{(\text{number of incidents}) * (\text{time committed per incident})}{\text{Period}}$$

UHU is limited in that only emergency response incidents are considered in the calculation.

**Other activities such as training, inspections, etc. are not considered in calculations.**

UHU can be calculated on a variety of periods per day, month, or year. Calculations provided below are based in a year to avoid short term fluctuations. UHU is a technical measure of commitment time. UHU calculations result in a number that is percentages and is expressed as a decimal. A UHU of .25 would represent that 25% of the period is committed to incidents. It is generally accepted that a UHU over .35 illustrates a unit that is overcommitted.

Resource types may experience differing levels of workload based on commitment time. Suppression units may see a shorter commitment time, while ambulances may see more time due to transport and turnaround time. IDPH regulations require a written EMS report completed and submitted before an ambulance can return in service. This process is now completed digitally and can take 20-40 minutes for an elaborate report. Hospital location is another factor in commitment time. Transport hospitals are in nearby communities and not within the District, which prolongs time commitment as units may not be available due to transport requirements.

Shift operations and activities such as mandatory training, physical fitness, inspections, etc. should be calculated as well to provide an estimation of total work time. Total Committed Time could add an aggregate of four to six hours daily of non-emergency UHU required actions; vehicle checks/maintenance, meals/shopping, training & fire prevention activities, fitness, and return time from incidents as per this example list.

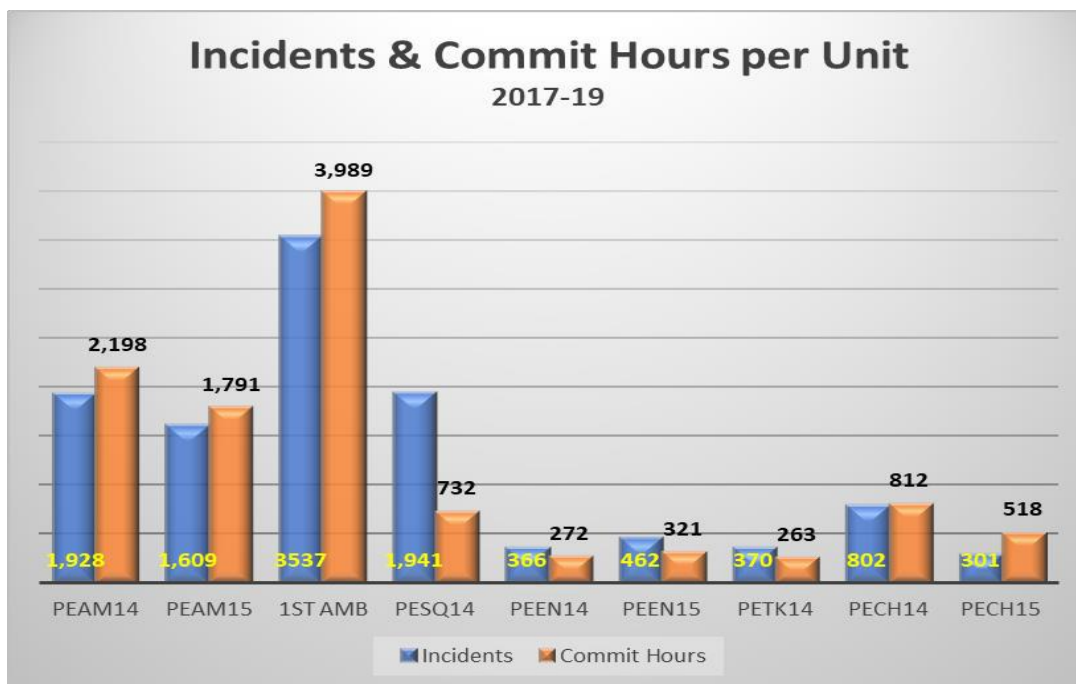
APPARATUS - INCIDENTS / HOURS COMMITTED / UNIT HOUR UTILIZATION (UHU)														
There are 11,783 Apparatus records being analyzed.														
Sample - DAILY ACTIVITY	Average Time	Year Desc	2017			2018			2019			2017-19		2017-19
			Incidents	Hours	UHU	Incidents	Hours	UHU	Incidents	Hours	UHU	Incidents	Hours	
<b>Roll Call</b>														
Operations Review	0.25													
DQD - Daily Quick Drill		PEAM14	533	506.9	0.06	503	463.4	0.05	630	1227.6	0.14	1,928	2419.1	0.09
		PEAM15	424	359.7	0.04	474	440.7	0.05	498	990.8	0.11	1,609	1970.8	0.07
EMS & Fire Topics	0.5													
<b>Apparatus &amp; Small Tools</b>		1st AMB		866.6	0.10		904.1	0.10		2218.4	0.25		4390.0	0.17
Operations/Functions/Review	1													
Meal Shopping	0.5	PEEN14	105	81.5	0.01	116	79.2	0.01	109	111.3	0.01	366	382.8	0.01
<b>Department Directed Training</b>		PEEN15	84	45.8	0.01	123	92.5	0.01	92	183.0	0.02	462	492.6	0.02
Daily Scheduled Drill	1													
	[1,2,4, or 8 hrs - class dependent]	PETK14	126	41.3	0.00	92	67.5	0.01	75	154.1	0.02	370	328.4	0.01
<b>LUNCH</b>	1													
Preplan/Building Familiarization	1	PESQ14	644	313.4	0.04	622	298.7	0.03	518	119.7	0.01	1,941	1709.2	0.07
Physical Fitness	1													
Public Education/Relations	0.5													
<b>Company Directed Training</b>		PECH14	206	142.8	0.02	248	187.0	0.02	251	482.0	0.06	802	873.7	0.03
Per Company Officer	varies	PECH15	122	68.2	0.01	145	102.6	0.01	151	347.5	0.04	301	452.4	0.02
<b>Average Daily Hours</b>	<b>6.75</b>	<b>Totals</b>	<b>3,226</b>	<b>1646.6</b>	<b>0.19</b>	<b>3,440</b>	<b>1827.2</b>	<b>0.21</b>	<b>3,548</b>	<b>86.9</b>	<b>0.01</b>	<b>11,783</b>	<b>9324.2</b>	<b>0.35</b>



### Unit-Hour Utilization Spreadsheet

Report based on 11,783 apparatus response records from 1/1/2017 to 12/31/2019

Vehicle	PEAM14	PEAM15	PESQ14	PECH14	PEEN15	PECH15	PEEN14	PEUT15	PETK14
0:00	5.06%	2.82%	3.54%	1.75%	1.21%	0.47%	0.72%	1.40%	1.34%
1:00	5.49%	5.60%	7.01%	3.56%	1.43%	1.98%	0.92%	2.33%	0.84%
2:00	5.32%	5.80%	7.48%	3.03%	1.14%	2.23%	1.76%	1.00%	2.60%
3:00	11.96%	10.13%	9.70%	3.93%	4.63%	4.23%	0.91%	3.01%	1.52%
4:00	8.58%	6.72%	5.62%	3.62%	1.51%	2.26%	1.94%	5.07%	0.34%
5:00	7.08%	8.03%	5.62%	3.63%	1.57%	3.18%	0.52%	2.08%	1.19%
6:00	7.40%	7.67%	7.79%	2.75%	2.75%	1.65%	1.15%	2.16%	2.02%
7:00	8.91%	10.99%	12.61%	6.68%	2.65%	4.80%	2.57%	1.40%	1.38%
8:00	12.31%	7.09%	7.56%	2.29%	1.93%	1.87%	0.46%	2.50%	0.24%
9:00	11.20%	12.47%	9.58%	3.12%	2.89%	0.70%	1.39%	0.64%	1.94%
10:00	11.42%	10.37%	8.26%	5.22%	3.38%	2.02%	1.73%	0.46%	0.40%
11:00	10.85%	5.63%	5.48%	3.78%	2.99%	2.12%	2.25%	0.42%	1.45%
12:00	14.03%	8.06%	4.10%	4.01%	1.30%	1.31%	2.28%	2.02%	1.26%
13:00	10.84%	6.76%	6.63%	4.13%	1.16%	1.67%	2.20%	0.60%	0.73%
14:00	5.96%	6.08%	4.04%	3.46%	0.80%	0.52%	1.47%	0.35%	1.36%
15:00	8.10%	6.02%	5.64%	3.91%	1.35%	0.44%	2.03%	0.16%	1.71%
16:00	6.55%	5.54%	3.97%	4.16%	1.21%	1.00%	2.04%	0.81%	0.50%
17:00	9.43%	5.15%	4.31%	3.89%	1.14%	0.51%	1.34%	0.29%	0.72%
18:00	7.09%	5.71%	3.45%	2.64%	1.51%	0.35%	0.93%	0.25%	0.61%
19:00	5.44%	4.18%	2.91%	1.86%	0.56%	1.48%	0.55%	0.41%	1.39%
20:00	7.19%	5.24%	3.08%	1.58%	0.83%	0.49%	0.45%	0.24%	0.39%
21:00	4.72%	4.39%	2.95%	2.51%	0.87%	0.40%	0.46%	0.35%	1.52%
22:00	5.19%	3.55%	2.25%	1.07%	0.28%	0.26%	0.28%	0.12%	0.22%
23:00	3.71%	3.92%	3.36%	1.86%	0.39%	0.30%	0.32%	0.31%	0.65%
<b>Overall</b>	<b>8.08%</b>	<b>6.58%</b>	<b>5.71%</b>	<b>3.27%</b>	<b>1.64%</b>	<b>1.51%</b>	<b>1.28%</b>	<b>1.18%</b>	<b>1.10%</b>
<b>Runs</b>	<b>1,928</b>	<b>1,609</b>	<b>1,941</b>	<b>987</b>	<b>462</b>	<b>301</b>	<b>366</b>	<b>228</b>	<b>370</b>



\*Note the difference per unit in Incidents responded to and Committed Hour time.



## HOW – PERFORMANCE

There are several ways to measure performance. One of the more critical ways is to measure activities vs. outputs vs. outcomes.



**Outcomes** are the things that matter most to the community.

**Activities** show what we have done.

**Outputs** show how much did we accomplish with our activities.

- Training, Inspections, Responding to emergencies
- Completed xx hours of Training, xx % of inspections
- Responded to fires within X minutes, X % of the time

**Outcomes** show what’s in it for the community.

- How likely is their life (or their family) going to be saved?
- How much of their property will be saved (value, capabilities, business operations, etc.)?
- What will be their quality of life?
- How much is this going to cost them if they support (or don’t) support my local FD (out of pocket)?

Two outcome performances that can be directly measured include fires contained to the room of origin and cardiac arrest survival rates.

### Fire Loss/Save Rate

An important measure in fireground performance is the ability to keep a fire in the room of origin and not spread. According to a recent NFPA study, the chances of Injury or Death in a home fire that is:

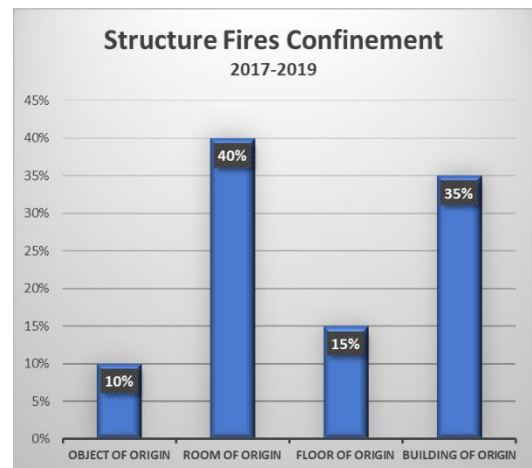
**Contained to room of origin = 3%, Past Room of Origin = 81%!**

Furthermore, the **cost of burn injuries:**

- **One year in a Burn Center = \$ 2.6 Million**
- **Average stay = 14 weeks (\$700.000)**
- **Loss of income at work?**
- **What is the cost of Pain and Suffering?**

The cost of being displaced by a fire for a year:

- Original mortgage payments
- The insurance deductible & any under coverage costs
- The new cost of a rental and insurance
- Moving costs
- Work and school commutes
- Lost financial records, taxes, ownership documents, etc.



The baseline performance measure in the District for structure fire responses:

**50%** of the time – Fires were limited to object or room of origin

### EMS Cardiac Arrest Survival Rate

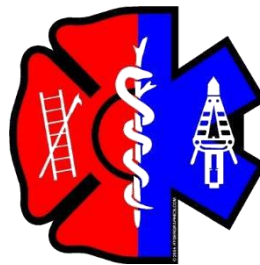


Cardiac arrest survival/saves are an excellent “outcome” measure of performance. For cardiac arrest patients since 2017 (10 total), the “save rate” for patients in cardiac arrest was 40% (2017-19) in which the patient had Return of Spontaneous Circulation (ROSC) at the time of arrival to the hospital.

This outcome is above the estimated **national data average of 12%**; however, it is a benchmark goal area for improvement as some local Districts and Departments are experiencing a much higher rate (40-65%).

The baseline performance measure in the District for cardiac arrest resuscitation:

**40%** of the time – Cardiac Arrest were “saved” with ROSC upon arrival at the hospital





## **Performance**

### **Performance Measures**

Performance measures should establish the following characteristics to be considered valid and verifiable:

- Meaningful
- Understandable to internal and external stakeholders
- Based on goals and objectives related to a strategic plan
- Controllable by organizational action
- Useful
- Reliable
- Accurate to assess the performance
- Comparable
- Sustainable
- Value to obtain should not exceed the effort to collect

Performance objectives have been developed based on the community and the District's expectations, risk assessment, critical task functions, and planning zones. Each category of emergency service type was reviewed, and performance times established. Current performance and goals should be viewed in the context of what is demonstrated currently and what would like to be demonstrated in the future. A baseline is a term used to describe the current performance. Benchmark is used to describe a future performance level objective.

### **Community Expectations**

This section compares performance to objectives. Community expectations influence performance. During Strategic Planning, input on service delivery objectives was sought by internal and external participants.

Conclusions were summarized in the identification of four Strategic Priority areas:

- Financial Sustainability – Cost Effectiveness
- Community Involvement
- Operational Effectiveness/Efficiency
- Workforce Development

Each of these areas dovetails into the focus of a continual process and establishing measures of performance.

### **Deployment Performance**

Deployment performance can be measured using three concepts: Distribution (what and where), Concentration (how much), and Reliability (how well). These concepts will be used in the creation of performance objectives, performance measures for response times, and the determination of the District's ability to provide an effective response force for each risk category for each service provided.

### ***Distribution (First Due) Performance***

Distribution is defined as the systematic locating of geographically distributed first due resources (stations, apparatus, and personnel) for all-risk initial intervention. Distribution locations, also known as "points of service delivery," are established to ensure the rapid deployment of resources to intervene in routine emergencies and bring them to a successful conclusion. For the most part, this is **time and distance analysis**. The distribution system is set up to provide the appropriate emergency response to the variety of risks identified in the previous section.



The District uses an “all-risk” concept in that the station is equipped and staffed to provide an effective baseline response. The effectiveness of a distribution system is generally measured by the percentage of the jurisdiction covered by the first due units within adopted public policy response times. Specific performance objectives have been established for each service provided. A distribution network is considered successful when it can provide a resource to the scene of an emergency with the correct apparatus, equipment, and staffing to complete the following:

- Assessment of the situation and take Command
- Establishment of a plan of action capable of mitigating the emergency
- Request for appropriate resources if necessary
- Intervention to stop/impede the escalation of the emergency

The current distribution of resources for the District can be traced to several events throughout its history. The location of the station has been dependent on funding, land availability, infrastructure, and expected growth. Distribution implies that certain risks will require resources beyond that available on initial attack. The depth of coverage includes an analysis of whether enough resources are available within acceptable time frames to amass staffing, equipment, and apparatus to deal with identified risk levels. Distribution performance measurement emergencies are those incidents that have a direct impact on the placement of fire stations and the resources in the stations. EMS, Rescue incidents, and structure fires are the key measured emergencies or Priority 1 calls. Incidents outside the District areas are tracked, but not used for analysis. Measurement of incidents are from the Records Management Systems (RMS), GIS, and StatsFD database and are reviewed based on incident type codes with outliers are removed.

Measuring the distribution system is usually accomplished using Travel Time or Total Response Time of first due company resources. Travel Time is the interval of time from the point the emergency unit begins responding to its arrival at the scene of the emergency. Total Response Time begins when the request for emergency services is received at the dispatch center and extends to the arrival of the first emergency unit at the scene of the emergency, including turnout from unit notification to the response. It is also known as “Call to Arrival.”

### **Concentration**

Concentration is defined as the number and spacing of resources needed to achieve an “effective response force” that can be assembled at the scene of an emergency within a defined time frame for each given risk and level of service. An effective response force is the accumulation of resources necessary to stop the escalation of the emergency and bring it to a conclusion. In other words, concentration is the ability to place enough resources on a specific call to keep the event from becoming a significant emergency. Concentration considers risk versus cost.

Both factors are variables, thus: **Increased Risk = Increased Concentration**

Concentration can be measured in several ways. The most common approach is to measure the percentage of the community covered by an effective response force within adopted time frames. A first-alarm assignment is considered an effective response force for fire incidents. In arriving at a concentration level for the District, the challenge is to strike a balance on how much overlap there should be between station response areas. Some overlap is necessary to maintain response times and to provide back up for distribution when first-due units



are committed. A successful concentration network means that the system can provide the correct equipment, apparatus, and staffing to the scene of an emergency to complete the following:

- Stop the emergency from continuing to escalate
- Provide for the safety and security of citizens and emergency workers
- Complete all critical tasks promptly
- Provide for incident management and Command

Most of the areas now served started with limited development and minimal risk. As time passed and development continued, both the population base and risk increased. The location and spacing of resources have been dependent on funding, land availability, and infrastructure. Measuring the current concentration is accomplished using calls for service and the system performance of the company resources.

### **Resiliency**

The dictionary definition of resilience is “the capacity to recover quickly from difficulties.” In the fire service, that translates to how well we bounce back from adversity regardless of the cause could be wide-scale, and far-reaching events such as severe weather extremes, massive prolonged power outages, floods, mass casualty events, or multiple concurrent incidents require a response and resilient. Even our Firefighter individually learn to “respond, handle the emotionally challenging scene, then return” to some normalcy.

Fire District response system is built on reliability, consistency, redundancy, and performance (including speed). There may be times that the system is pushed and stressed. Severe weather incidents such as thunderstorms (or worse – tornado, etc.) spread resources thin, as in situations as that altered levels of response are instituted. “Storm Mode” response procedures are dispatching the closest fire company to investigation and alarm activations (without tone alerts – just radio notification).

The ability to recover to “normalcy” can include multiple considerations, such as:

- **Capability** – developed early through trained KSA (knowledge, skills, abilities)
- **Capacity** – resources ready state (mechanically sound and properly equipped)
- **Reliability** – the number of times a unit can respond to incidents in district area as the first due
- **Availability** – use of resources and ability to add units to response or coverage.

### **Response Times**

The rapid deployment of resources to emergencies is another distribution factor to consider. The Fire District uses nationally recognized incident count to inform management better and determine resource allocation and deployment decisions. In the past, the use of "incident count" has been the basic reference numbers used by the District for deployment issues, and for collecting the data on response volumes. Incident count data is typically used and reported to describe service demand changes over time because the number and type of resources (i.e., Engines, Trucks, Ambulances, etc.) assigned or committed to each event is subject to operational policy. Thus, data that reflect the number of times a resource is "dispatched" to an event are not suitable for performing trend/historical or comparative analysis of incidents.

Response times are one of the most frequently used methods of measuring system performance as it relates to the overall response time. In a review of the CAD and RMS data, the Fire District tracks four elements of response—from call processing to turnout-time, and travel time (1<sup>st</sup> due and balance), and when companies are available. The District uses NFPA 1710 as the benchmark goal for all these measures.



## Response Time Performance

A chain of events is initiated when an emergency incident occurs or is discovered. Time elements are not controllable but can be enhanced by early recognition and notification. It can be especially critical in structure fires and cardiac arrest events. Also, due to technological limitations, initial call processing and dispatch may occur from two different locations due to cellular tower placement and configuration. The four main components of measuring “Total Response Time” or TRT is from the initial 911 pickup at a Dispatch center – “Processing the call” & notifying the stations/units, the units “turning out” from notification to enroute, “travel time” – how long it takes to get to the scene for both the initial responders and the rest/balance of the Effective Response Force. **The District utilizes a dual demand zone, Urban/Rural**, due to the characteristics of the community. It represents a population density of 2-3,000 per square mile, consisting of single-family, multi-family residential, mixed commercial and business occupancies as well as vast farmland. Response time performance is shown in the following tables. Performance is demonstrated in a structure fire, EMS, Rescue/Special Operations such as HazMat, TRT, and Water incidents. Components of the response continuum are broken down to reflect distinct segments. These include call processing time, turnout time, travel time, and total response time. The District benchmark response goals reflect the National Fire Protection Association (NFPA) – National Standard NFPA 1710, as reflected below.

NFPA 1710 RESPONSE BENCHMARKS – 90% of Emergency Incidents	
Task	Time (< or equal to)
Call Processing (Dispatch)	1 minute
Turnout Time (EMS)	1 minute
Turnout Time (FIRE)	1 minute 20 seconds
Travel Time - First Engine or Ambulance	4 minutes
Travel Time - Full Alarm Assignment (ERF)	8 minutes
<b>TOTAL RESPONSE TIME (1<sup>st</sup> EMS/FIRE Company)</b>	<b>6:00 / 6:20 minutes</b>
<b>TOTAL RESPONSE TIME (Effective Response Force - ERF)</b>	<b>10: 00 / 10:20 minutes</b>

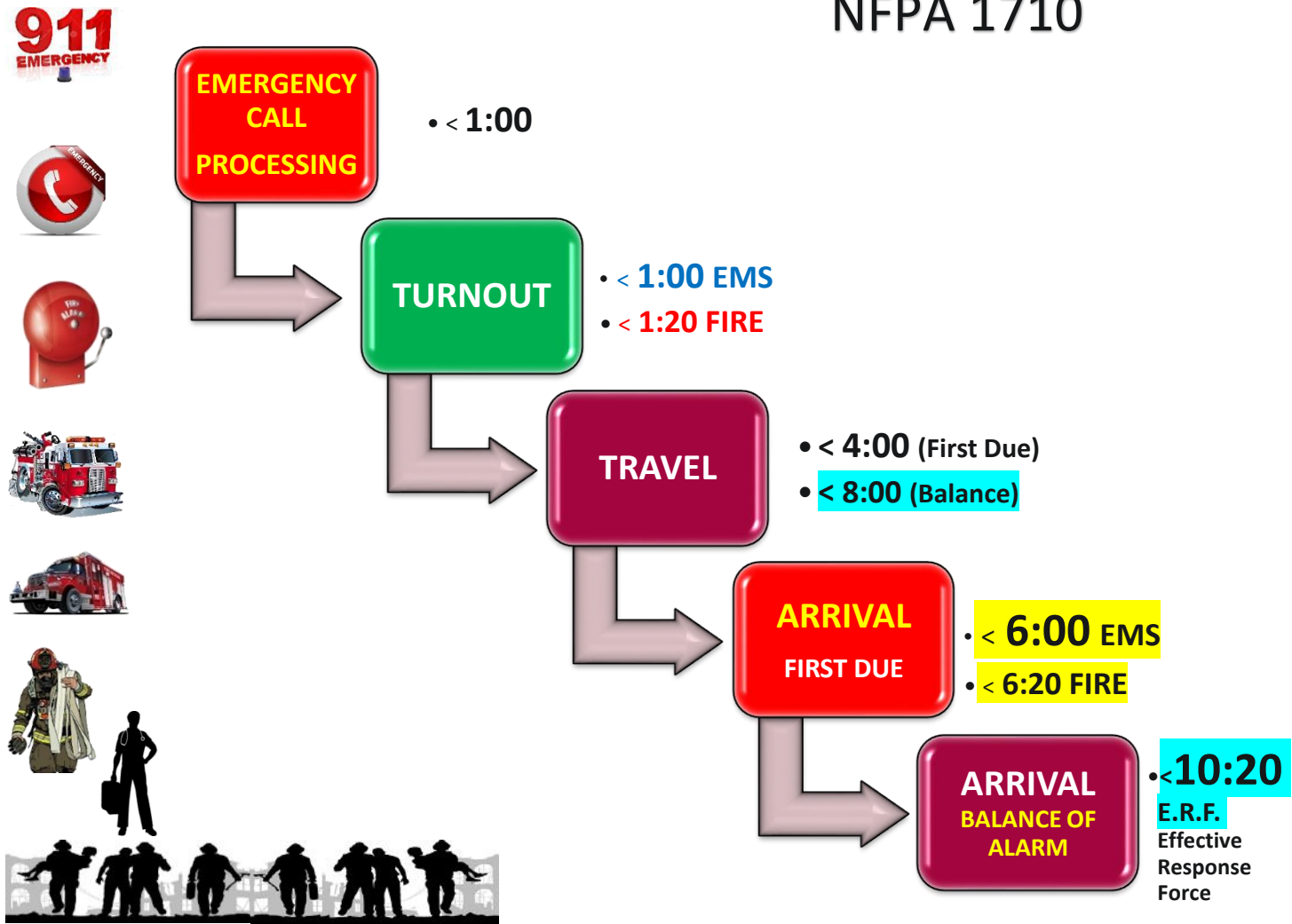




Total Response Time – “Hello to Hello time” – 911 pickup to Firefighter/Paramedic arrival

Benchmark Goal: 90% of all Emergency Incidents

# NFPA 1710



For the general public,  
**TOTAL RESPONSE TIME**  
 (aka CALL TO ARRIVAL)  
 is the measurement  
 that **matters most.**



## Benchmarks (Goals)

### Benchmark Statements

The District has developed objectives for each of the vital services provided: Fire suppression, Emergency Medical Services (EMS), Rescue, Hazmat, and Special Operations. These performance objectives further define the quality & quantity of services.



The “Benchmark” performance goals are per risk type. It is where the District wants to be. “Baseline” performance is the actual current level. It is where the District is now.

### Fire Benchmark Statement

For **90 percent** of all fire incidents, the Fire District shall arrive with a “first due/distribution” total response time in less than **6 minutes 20 seconds with at least 3 personnel** with enough resources to stop the escalation of the fire and keep the fire to an area of involvement upon arrival. Initial response resources shall be capable of establishing Command; forcing entry if needed; containing the fire; rescuing at-risk victims; performing salvage operations, providing for the safety of the responders and general public. Apparatus shall have a minimum pump capacity of 1500 GPM and 750-gallon water tanks for Engines, 300+ gallons for Trucks. A positive water supply shall be established, and a hose line deployed attacking the fire flowing a minimum of 150 GPM within 5 minutes of arrival or less.

Additionally, the “balance of alarm/concentration” or Effective Response Force (ERF) shall arrive in less than **10 minutes 20 seconds total response time with a minimum of 15 personnel for Moderate risk** classified incidents which will transfer Command/Safety; deploy a backup line; completing forcible entry & searching and rescuing at-risk victims; ventilating the structure; controlling utilities; performing salvage and overhaul; assuming IRIC/RIT in on-deck positions complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; control utilities; other functions as ordered by Command as required and occupant need services. These operations shall be done following the District standard operating procedures. **High-Risk type classified incidents shall have a minimum of 29 personnel within 15 minutes total response time.** “General alarm” deployment of resources will allow Command to sector/divide/group the structure for a better span of control and accountability as well as to adjust Risk Management Plan & IAP as needed.



### **EMS Benchmark Statement**

For 90 percent of all emergency medical incidents, the Fire District shall arrive “first due/distribution” in less than **6 minutes with at least 2 personnel** ALS trained, and equipped, capable of assessing scene safety and establishing command; sizing-up the situation; conducting an initial patient assessment; obtaining vitals and documenting patient’s medical history; initiating mitigation efforts within one minute of arrival to provide medical services that will stabilize the situation; provide care and support to the victim and reduce; reverse or eliminate the conditions that have caused the emergency while providing for the safety of the responders; and provide transportation of patient(s) if necessary to appropriate medical facilities in an effective, efficient manner. For all **Low-risk** incidents or for **Moderate risk** incidents where resuscitation/rescue of victims is required, the Fire District ERF shall arrive in less than **10 minutes total response time with 5 personnel minimum (or 6 personnel for Moderate risks)** and resources to stabilize the situation, resuscitate/extricate the victim(s) from the emergency or location without causing further harm to the victim, responders, public and the environment while completing the patient assessment; providing appropriate treatment; performing defibrillation; initiating cardiopulmonary resuscitation (CPR); providing intravenous (IV) access-medication administration with positive airway control. If **High-Level** responses are necessary for ERF Concentration, they shall arrive in less than **15 minutes with 28 personnel** once dispatched, performing positions and functions as directed by Command, which may include Medical, Triage, and Transport sectors.

### **Rescue/Special Operations Benchmark Statement**

For 90 percent of all Rescue/Special Operations incidents such as Technical Rescue and Water Rescue, the Fire District shall arrive “first due/distribution” in less than **6 minutes 20 seconds total response time with at least 3 personnel** with resources to establish Command; stabilize the situation; stop the escalation of the incident; contain the hazard where applicable; initiate an action plan; proper size up to determine if a moderate or high-level technical rescue response is required; requesting additional resources if needed, and basic life support to any victim without endangering response personnel or the public.

ERF Concentration per **Moderate Type level** shall arrive in less than **10 minutes 20 seconds total response time with 9 personnel** necessary to the victim safely and efficiently. **High-Risk type-level ERF shall arrive in less than 15 minutes with minimum numbers of personnel ranging from 14-28** once dispatched depending on specialty/situation. A Technician/Team level response is necessary for ERF Concentration. The ERF shall be capable of appointing a site safety officer, establishing patient contact, staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder and ALS medical support.

### **Hazardous Materials Benchmark Statements**

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with **3 personnel minimum, shall be 6 minutes 20 seconds** for all risk levels. The first-due unit shall be capable of: establishing command; sizing up and assessing the situation to determine the presence of a potentially hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm, and cold zone. For **Moderate risk**, the ERF Concentration level shall arrive in less than **10 minutes 20 seconds with 9 personnel minimum** necessary to safely and efficiently isolate, identify, and mitigate the hazard.

For **High-risk** level incidents, the total response time for the arrival of the effective response force (ERF), including the hazardous materials response team, staffed with **15 personnel within 15 minutes** in all areas.



### Baselines (Actual)

Actual baseline times for the District historically are as follows with benchmark goals.

FIRE & EMS INCIDENTS 2016-2019				
	Call Processing @ 1:00	Turnout @ 1:20	@ Travel @ 4:00	@ Call to Arrival @ 6:20
Benchmark (goal)	@ 1:00	1:20	4:00	6:20
<<< TOTAL RESPONSE TIME >>>				
Baseline (actual)	<b>2:18</b>	<b>2:02</b>	<b>7:39</b>	<b>9:39</b>
Achieved Benchmark	<b>71.4%</b>	<b>71.5%</b>	<b>65.0%</b>	<b>69.9%</b>

FIRE & EMS Incidents only combined **Demand & Performance:** 8/2016-2019

**Demand & Performance:** 2016-2018

ALL Incidents combined

ALL INCIDENTS 8/16-2019			
Call Processing @ 1:00	Turnout @ 1:20	Travel @ 4:00	Call to Arrival @ 6:20
<b>71.0%</b>	<b>72.8%</b>	<b>57.9%</b>	<b>64.9%</b>
<i>for 90% compliance</i>			
<b>2:28</b>	<b>2:04</b>	<b>9:48</b>	<b>11:09</b>
<b>3,771</b> # of Incidents	<b>11,507</b> Apparatus Responses	<b>28,376</b> Hours	<b>\$1,971,221</b> Dollar Loss
<b>FIRES</b>	<b>EMS</b>	<b>OTHERS</b>	
<b>379</b>	<b>2,287</b>	<b>1,105</b>	
214 <b>Building</b>	1,898 <b>Medical</b>	98 <b>Hazmat</b>	
38 <b>Vehicle</b>	389 <b>MVA</b>	26 Cancelled Enroute	
74 <b>Brush</b>	7 <b>Technical Rescue</b>	399 False/Good Intent	

FIRE & EMS Incidents only combined

FIRE & EMS INCIDENTS 8/16-2019			
Call Processing @ 1:00	Turnout @ 1:20	Travel @ 4:00	@ Call to Arrival @ 6:20
<b>74.1%</b>	<b>71.5%</b>	<b>65.0%</b>	<b>69.9%</b>
<i>for 90% compliance</i>			
<b>2:18</b>	<b>2:02</b>	<b>7:39</b>	<b>9:38</b>
<b>2,227</b> # of Incidents	<b>7,587</b> Apparatus Responses	<b>18,012</b> Hours	<b>\$1,971,221</b> Dollar Loss
<b>FIRES</b>	<b>EMS</b>		
<b>127</b>	<b>2,100</b>		
20 <b>Building</b>	1,780 <b>Medical</b>		
33 <b>Vehicle</b>	320 <b>MVA</b>		
47 <b>Brush</b>	2 <b>Technical Rescue</b>		



[No Aid Given] – Excludes Mutual Aid

Analysis of Incidents from 8/1/2016 – 12/31/2019

**BASELINE TIMES ALL INCIDENTS**

**All Incidents - Department-Wide**

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:18 (2,118)</b>	02:35 (331)	01:50 (695)	02:41 (430)	02:20 (662)
Turnout	<b>02:08 (1,529)</b>	02:07 (252)	02:04 (532)	02:02 (287)	02:18 (458)
Travel-Distribution	<b>07:41 (1,698)</b>	06:55 (266)	06:44 (547)	08:18 (341)	08:13 (544)
Travel-2nd Arrival	<b>08:18 (1,461)</b>	07:54 (250)	07:28 (518)	08:41 (307)	08:32 (386)
Dispatch to Arrival	<b>09:12 (2,831)</b>	09:15 (376)	08:52 (781)	08:25 (792)	09:39 (882)
<b>Call to Arrival-Distribution</b>	<b>09:39 (2,829)</b>	<b>09:29 (375)</b>	<b>09:27 (781)</b>	<b>09:30 (793)</b>	<b>10:06 (880)</b>
Call to Arrival-2nd Arrival	<b>10:23 (2,514)</b>	10:21 (351)	10:00 (734)	10:31 (719)	10:39 (710)
Scene Duration	<b>64:31 (2,799)</b>	34:21 (376)	48:40 (779)	83:38 (792)	72:34 (852)
Total Duration	<b>107:22 (2,829)</b>	106:31 (378)	101:23 (787)	111:06 (799)	110:06 (865)

**BASELINE TIMES FIRE & EMS\***

**Fire & EMS - Department-Wide**

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:15 (1,713)</b>	02:27 (242)	01:56 (568)	02:36 (352)	02:18 (551)
Turnout	<b>02:04 (1,208)</b>	01:59 (177)	01:58 (423)	01:57 (231)	02:18 (377)
Travel-Distribution	<b>07:48 (1,338)</b>	07:31 (188)	06:48 (434)	08:08 (269)	08:13 (447)
Travel-2nd Arrival	<b>08:18 (1,146)</b>	07:58 (177)	07:38 (410)	08:28 (244)	08:31 (315)
Dispatch to Arrival	<b>09:13 (2,264)</b>	09:17 (277)	08:46 (631)	08:03 (628)	09:39 (728)
<b>Call to Arrival-Distribution</b>	<b>09:37 (2,262)</b>	<b>09:38 (275)</b>	<b>09:27 (630)</b>	<b>09:18 (629)</b>	<b>10:03 (728)</b>
Call to Arrival-2nd Arrival	<b>10:21 (2,035)</b>	10:23 (263)	10:00 (599)	10:19 (584)	10:39 (589)
Scene Duration	<b>73:20 (2,240)</b>	36:39 (276)	51:03 (631)	90:18 (628)	83:00 (705)
Total Duration	<b>110:27 (2,256)</b>	110:16 (276)	103:26 (633)	114:47 (632)	112:10 (715)

**BASELINE TIMES EMS**

**EMS - Department-Wide**

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:13 (1,622)</b>	02:27 (237)	01:59 (542)	02:29 (321)	02:16 (522)
Turnout	<b>01:59 (1,143)</b>	01:58 (173)	01:53 (400)	01:57 (211)	02:10 (359)
Travel-Distribution	<b>07:38 (1,261)</b>	07:19 (182)	06:36 (409)	08:05 (243)	08:13 (427)
Travel-2nd Arrival	<b>07:55 (1,078)</b>	07:31 (171)	06:56 (387)	08:18 (221)	08:31 (299)
Dispatch to Arrival	<b>08:57 (2,135)</b>	09:16 (268)	08:26 (599)	07:33 (580)	09:32 (688)
<b>Call to Arrival-Distribution</b>	<b>09:30 (2,132)</b>	<b>09:29 (266)</b>	<b>09:22 (597)</b>	<b>08:48 (581)</b>	<b>09:56 (688)</b>
Call to Arrival-2nd Arrival	<b>10:07 (1,920)</b>	10:08 (254)	09:51 (569)	10:06 (539)	10:22 (558)
Scene Duration	<b>70:38 (2,111)</b>	36:38 (267)	47:41 (598)	88:26 (580)	77:29 (666)
Total Duration	<b>110:21 (2,127)</b>	110:16 (267)	103:26 (600)	115:30 (584)	111:47 (676)



## BASELINE TIMES FIRES

All Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:58 (91)</b>	01:02 (5)	00:48 (26)	03:00 (31)	03:16 (29)
Turnout	<b>03:00 (65)</b>	04:28 (4)	02:50 (23)	01:45 (20)	03:00 (18)
Travel-Distribution	<b>09:10 (77)</b>	08:32 (6)	08:07 (25)	09:38 (26)	07:44 (20)
Travel-2nd Arrival	<b>09:21 (68)</b>	09:20 (6)	09:03 (23)	10:27 (23)	08:27 (16)
Dispatch to Arrival	<b>10:55 (129)</b>	11:09 (9)	10:23 (32)	09:38 (48)	12:08 (40)
<b>Call to Arrival-Distribution</b>	<b>11:09 (130)</b>	<b>11:09 (9)</b>	<b>10:55 (33)</b>	<b>10:16 (48)</b>	<b>12:20 (40)</b>
Call to Arrival-2nd Arrival	<b>12:30 (115)</b>	13:17 (9)	11:10 (30)	12:02 (45)	12:30 (31)
Scene Duration	<b>105:32 (129)</b>	76:51 (9)	53:52 (33)	101:27 (48)	148:16 (39)
Total Duration	<b>111:51 (129)</b>	85:27 (9)	62:35 (33)	110:02 (48)	157:57 (39)

Building Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>01:07 (17)</b>	01:02 (2)	00:44 (4)	03:00 (4)	00:45 (7)
Turnout	<b>03:11 (13)</b>	02:54 (1)	03:02 (4)	01:23 (2)	03:11 (6)
Travel-Distribution	<b>07:46 (13)</b>	04:40 (1)	07:21 (4)	07:46 (1)	07:44 (7)
Travel-2nd Arrival	<b>10:06 (11)</b>	10:06 (1)	09:00 (4)	07:46 (1)	13:37 (5)
Dispatch to Arrival	<b>10:55 (22)</b>	07:34 (2)	10:23 (5)	09:09 (5)	12:08 (10)
<b>Call to Arrival-Distribution</b>	<b>11:07 (23)</b>	<b>08:36 (2)</b>	<b>08:33 (6)</b>	<b>10:16 (5)</b>	<b>12:20 (10)</b>
Call to Arrival-2nd Arrival	<b>12:46 (21)</b>	14:02 (2)	12:46 (5)	10:16 (5)	12:20 (9)
Scene Duration	<b>183:30 (22)</b>	135:53 (2)	128:14 (6)	127:09 (5)	237:21 (9)
Total Duration	<b>191:48 (22)</b>	139:49 (2)	136:21 (6)	130:21 (5)	249:41 (9)

## BASELINE TIMES WILDLAND (BRUSH FIRES)

Wildland Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:16 (33)</b>		00:32 (11)	01:04 (14)	03:16 (8)
Turnout	<b>02:50 (21)</b>		02:22 (10)	03:00 (10)	02:08 (1)
Travel-Distribution	<b>09:38 (26)</b>		07:48 (10)	10:20 (14)	06:21 (2)
Travel-2nd Arrival	<b>09:38 (24)</b>		09:03 (10)	09:38 (12)	06:21 (2)
Dispatch to Arrival	<b>11:09 (47)</b>		09:29 (14)	10:23 (22)	14:11 (11)
<b>Call to Arrival-Distribution</b>	<b>11:27 (47)</b>		<b>09:39 (14)</b>	<b>10:23 (22)</b>	<b>14:11 (11)</b>
Call to Arrival-2nd Arrival	<b>12:02 (42)</b>		11:10 (14)	12:02 (20)	11:56 (8)
Scene Duration	<b>51:03 (47)</b>		51:03 (14)	78:30 (22)	40:13 (11)
Total Duration	<b>58:12 (47)</b>		57:51 (14)	89:57 (22)	46:18 (11)



## BASELINE TIMES HAZMAT

HazMat - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:20 (56)</b>	03:17 (4)	00:30 (21)	01:03 (14)	02:28 (17)
Turnout	<b>02:28 (41)</b>	02:12 (2)	02:19 (17)	02:44 (10)	01:40 (12)
Travel-Distribution	<b>09:15 (45)</b>	07:03 (3)	05:22 (16)	09:09 (11)	09:28 (15)
Travel-2nd Arrival	<b>09:20 (42)</b>	07:03 (3)	05:22 (16)	09:20 (11)	09:28 (12)
Dispatch to Arrival	<b>10:46 (80)</b>	09:15 (4)	11:03 (23)	11:38 (27)	08:20 (26)
<b>Call to Arrival-Distribution</b>	<b>11:23 (80)</b>	09:22 (4)	11:14 (23)	11:48 (27)	08:33 (26)
Call to Arrival-2nd Arrival	<b>11:23 (75)</b>	09:22 (4)	10:58 (22)	11:48 (26)	10:37 (23)
Scene Duration	<b>84:54 (81)</b>	49:55 (4)	107:01 (23)	53:59 (27)	57:43 (27)
Total Duration	<b>92:22 (83)</b>	59:17 (4)	109:35 (24)	71:12 (28)	63:48 (27)

## BASELINE TIMES RESCUE

Technical Rescue - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>01:30 (2)</b>			01:30 (1)	00:09 (1)
Turnout	<b>01:37 (2)</b>			00:52 (1)	01:37 (1)
Travel-Distribution	<b>03:02 (1)</b>			03:02 (1)	
Travel-2nd Arrival	<b>03:02 (1)</b>			03:02 (1)	
Dispatch to Arrival	<b>03:54 (1)</b>			03:54 (1)	
<b>Call to Arrival-Distribution</b>	<b>05:24 (1)</b>			<b>05:24 (1)</b>	
Call to Arrival-2nd Arrival	<b>05:24 (1)</b>			05:24 (1)	
Scene Duration	<b>22:44 (2)</b>			22:44 (1)	16:08 (1)
Total Duration	<b>36:19 (2)</b>			28:08 (1)	36:19 (1)



## All Incidents – Includes Mutual Aid

Analysis of Incidents from 8/1/2016 – 12/31/2019

### BASELINE TIMES ALL INCIDENTS

#### All Incidents - Department-Wide

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:27 (2,534)</b>	02:37 (384)	01:59 (826)	02:48 (546)	02:34 (778)
Turnout	<b>02:05 (1,870)</b>	02:00 (298)	02:01 (638)	01:59 (381)	02:18 (553)
Travel-Distribution	<b>09:48 (1,983)</b>	09:29 (299)	08:57 (638)	10:48 (423)	09:56 (623)
Travel-2nd Arrival	<b>09:46 (1,688)</b>	09:43 (281)	09:11 (601)	10:35 (368)	09:51 (438)
Dispatch to Arrival	<b>10:39 (3,681)</b>	10:30 (491)	10:14 (1,031)	10:28 (1,073)	11:15 (1,086)
Call to Arrival-Distribution	<b>11:13 (3,659)</b>	11:09 (490)	10:43 (1,028)	11:07 (1,071)	11:45 (1,070)
Call to Arrival-2nd Arrival	<b>11:54 (2,889)</b>	12:09 (399)	11:22 (855)	11:54 (836)	12:23 (799)
Scene Duration	<b>83:11 (3,682)</b>	55:44 (490)	70:24 (1,042)	95:49 (1,086)	88:39 (1,064)
Total Duration	<b>111:06 (3,796)</b>	107:46 (511)	103:03 (1,071)	115:55 (1,121)	114:45 (1,093)

### BASELINE TIMES FIRE & EMS COMBINED

#### Fire & EMS - Department-Wide

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:24 (1,918)</b>	02:37 (268)	01:57 (626)	02:43 (412)	02:25 (612)
Turnout	<b>02:03 (1,370)</b>	01:58 (201)	01:58 (466)	01:56 (277)	02:20 (426)
Travel-Distribution	<b>08:49 (1,470)</b>	08:35 (203)	07:48 (468)	09:46 (311)	09:03 (488)
Travel-2nd Arrival	<b>08:56 (1,246)</b>	09:00 (191)	08:30 (441)	09:38 (273)	09:03 (341)
Dispatch to Arrival	<b>09:43 (2,637)</b>	09:52 (317)	09:23 (725)	09:27 (764)	10:09 (831)
Call to Arrival-Distribution	<b>10:23 (2,624)</b>	10:39 (315)	09:56 (722)	10:13 (763)	10:52 (824)
Call to Arrival-2nd Arrival	<b>11:07 (2,221)</b>	11:36 (287)	10:40 (653)	11:01 (640)	11:35 (641)
Scene Duration	<b>84:28 (2,647)</b>	60:45 (323)	69:24 (734)	100:06 (769)	89:29 (821)
Total Duration	<b>114:00 (2,686)</b>	112:19 (327)	106:12 (744)	121:10 (781)	118:37 (834)

### BASELINE TIMES EMS

#### EMS - Department-Wide

90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:16 (1,739)</b>	02:35 (250)	01:59 (578)	02:34 (355)	02:17 (556)
Turnout	<b>01:59 (1,242)</b>	01:56 (184)	01:53 (429)	01:57 (242)	02:10 (387)
Travel-Distribution	<b>08:36 (1,353)</b>	08:15 (189)	07:38 (434)	09:07 (273)	08:53 (457)
Travel-2nd Arrival	<b>08:39 (1,147)</b>	08:20 (177)	08:14 (411)	09:04 (242)	08:49 (317)
Dispatch to Arrival	<b>09:24 (2,306)</b>	09:17 (282)	09:08 (639)	09:08 (639)	09:47 (746)
Call to Arrival-Distribution	<b>09:57 (2,299)</b>	09:54 (280)	09:32 (637)	09:43 (640)	10:27 (742)
Call to Arrival-2nd Arrival	<b>10:35 (2,031)</b>	10:35 (264)	10:06 (601)	10:41 (575)	10:56 (591)
Scene Duration	<b>74:11 (2,291)</b>	41:47 (284)	51:16 (642)	90:18 (642)	82:17 (723)
Total Duration	<b>110:39 (2,310)</b>	110:16 (284)	103:26 (646)	115:51 (646)	112:10 (734)





## BASELINE TIMES FIRES

All Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>03:11 (179)</b>	02:43 (18)	01:05 (48)	03:14 (57)	03:11 (56)
Turnout	<b>02:50 (128)</b>	02:21 (17)	02:25 (37)	01:45 (35)	03:00 (39)
Travel-Distribution	<b>11:30 (117)</b>	13:36 (14)	09:10 (34)	10:38 (38)	13:05 (31)
Travel-2nd Arrival	<b>11:40 (99)</b>	13:36 (14)	09:03 (30)	10:38 (31)	13:05 (24)
Dispatch to Arrival	<b>12:27 (331)</b>	13:00 (35)	11:19 (86)	11:26 (125)	14:55 (85)
Call to Arrival-Distribution	<b>12:55 (325)</b>	13:20 (35)	11:33 (85)	11:47 (123)	14:11 (82)
Call to Arrival-2nd Arrival	<b>14:15 (190)</b>	16:20 (23)	13:45 (52)	12:59 (65)	16:29 (50)
Scene Duration	<b>161:53 (356)</b>	139:43 (39)	122:28 (92)	143:06 (127)	177:39 (98)
Total Duration	<b>173:40 (376)</b>	152:54 (43)	131:31 (98)	153:06 (135)	200:04 (100)

Building Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>03:14 (81)</b>	03:04 (13)	01:49 (20)	03:36 (22)	02:32 (26)
Turnout	<b>02:54 (64)</b>	02:21 (13)	02:38 (15)	01:23 (14)	03:11 (22)
Travel-Distribution	<b>13:31 (41)</b>	13:36 (8)	08:52 (10)	11:30 (10)	13:34 (13)
Travel-2nd Arrival	<b>13:36 (34)</b>	13:36 (8)	09:00 (9)	10:55 (7)	13:37 (10)
Dispatch to Arrival	<b>13:55 (179)</b>	12:05 (27)	13:30 (47)	12:47 (63)	18:03 (42)
Call to Arrival-Distribution	<b>13:55 (173)</b>	13:20 (27)	11:33 (46)	13:20 (61)	17:38 (39)
Call to Arrival-2nd Arrival	<b>16:20 (79)</b>	19:00 (15)	14:21 (22)	14:00 (20)	19:19 (22)
Scene Duration	<b>175:27 (196)</b>	161:21 (30)	128:14 (51)	181:43 (62)	184:45 (53)
Total Duration	<b>191:48 (213)</b>	186:10 (34)	137:18 (57)	186:28 (69)	208:44 (53)

## BASELINE TIMES WILDLAND (BRUSH FIRES)

Wildland Fires - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>03:01 (50)</b>	00:24 (2)	01:00 (15)	03:01 (21)	03:16 (12)
Turnout	<b>02:22 (31)</b>	00:26 (1)	02:22 (12)	03:00 (13)	02:08 (5)
Travel-Distribution	<b>10:38 (32)</b>	09:52 (1)	07:48 (11)	10:20 (15)	13:57 (5)
Travel-2nd Arrival	<b>09:52 (28)</b>	09:52 (1)	09:03 (11)	09:38 (12)	12:46 (4)
Dispatch to Arrival	<b>11:47 (64)</b>	10:18 (1)	11:17 (16)	10:23 (31)	14:11 (16)
Call to Arrival-Distribution	<b>12:02 (64)</b>	10:42 (1)	11:28 (16)	10:23 (31)	14:11 (16)
Call to Arrival-2nd Arrival	<b>12:17 (47)</b>	10:42 (1)	12:17 (15)	12:02 (21)	12:46 (10)
Scene Duration	<b>134:34 (71)</b>	56:24 (2)	51:03 (18)	127:36 (33)	171:17 (18)
Total Duration	<b>153:06 (73)</b>	81:22 (2)	64:19 (18)	136:45 (34)	211:57 (19)



## BASELINE TIMES HAZMAT

Haz Mat - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>02:28 (62)</b>	03:17 (5)	01:11 (25)	01:03 (15)	02:28 (17)
Turnout	<b>02:19 (48)</b>	02:12 (3)	02:19 (22)	02:44 (11)	01:40 (12)
Travel-Distribution	<b>09:28 (51)</b>	14:44 (4)	09:15 (20)	09:20 (12)	09:28 (15)
Travel-2nd Arrival	<b>09:34 (48)</b>	14:44 (4)	09:15 (20)	09:34 (12)	09:28 (12)
Dispatch to Arrival	<b>11:38 (92)</b>	14:57 (5)	11:03 (27)	11:38 (33)	10:14 (27)
Call to Arrival-Distribution	<b>12:08 (92)</b>	15:23 (5)	11:30 (27)	11:53 (33)	10:37 (27)
Call to Arrival-2nd Arrival	<b>12:50 (83)</b>	15:23 (5)	11:14 (26)	12:08 (28)	15:40 (24)
Scene Duration	<b>107:01 (96)</b>	57:41 (5)	151:07 (29)	87:09 (34)	157:36 (28)
Total Duration	<b>109:35 (99)</b>	73:04 (5)	171:54 (30)	87:09 (36)	163:15 (28)

## BASELINE TIMES RESCUE

Technical Rescue - Department-Wide 90% Baseline Performance	Overall	2016	2017	2018	2019
Call Processing	<b>01:30 (2)</b>			01:30 (1)	00:09 (1)
Turnout	<b>01:37 (3)</b>			00:52 (2)	01:37 (1)
Travel-Distribution	<b>03:02 (1)</b>			03:02 (1)	
Travel-2nd Arrival	<b>03:02 (1)</b>			03:02 (1)	
Dispatch to Arrival	<b>03:54 (4)</b>		02:08 (1)	03:54 (2)	01:29 (1)
Call to Arrival-Distribution	<b>05:24 (4)</b>		02:08 (1)	05:24 (2)	01:29 (1)
Call to Arrival-2nd Arrival	<b>05:24 (1)</b>			05:24 (1)	
Scene Duration	<b>45:51 (7)</b>		00:52 (1)	45:51 (3)	385:35 (3)
Total Duration	<b>211:43 (7)</b>		03:00 (1)	211:43 (3)	387:04 (3)

## ERF – Effective Response Force

T.B.D. – Currently, insufficient data collection to determine ERF for moderate risk events and above that require the response of more than two units.



### Total Response Time Maps - Segmented

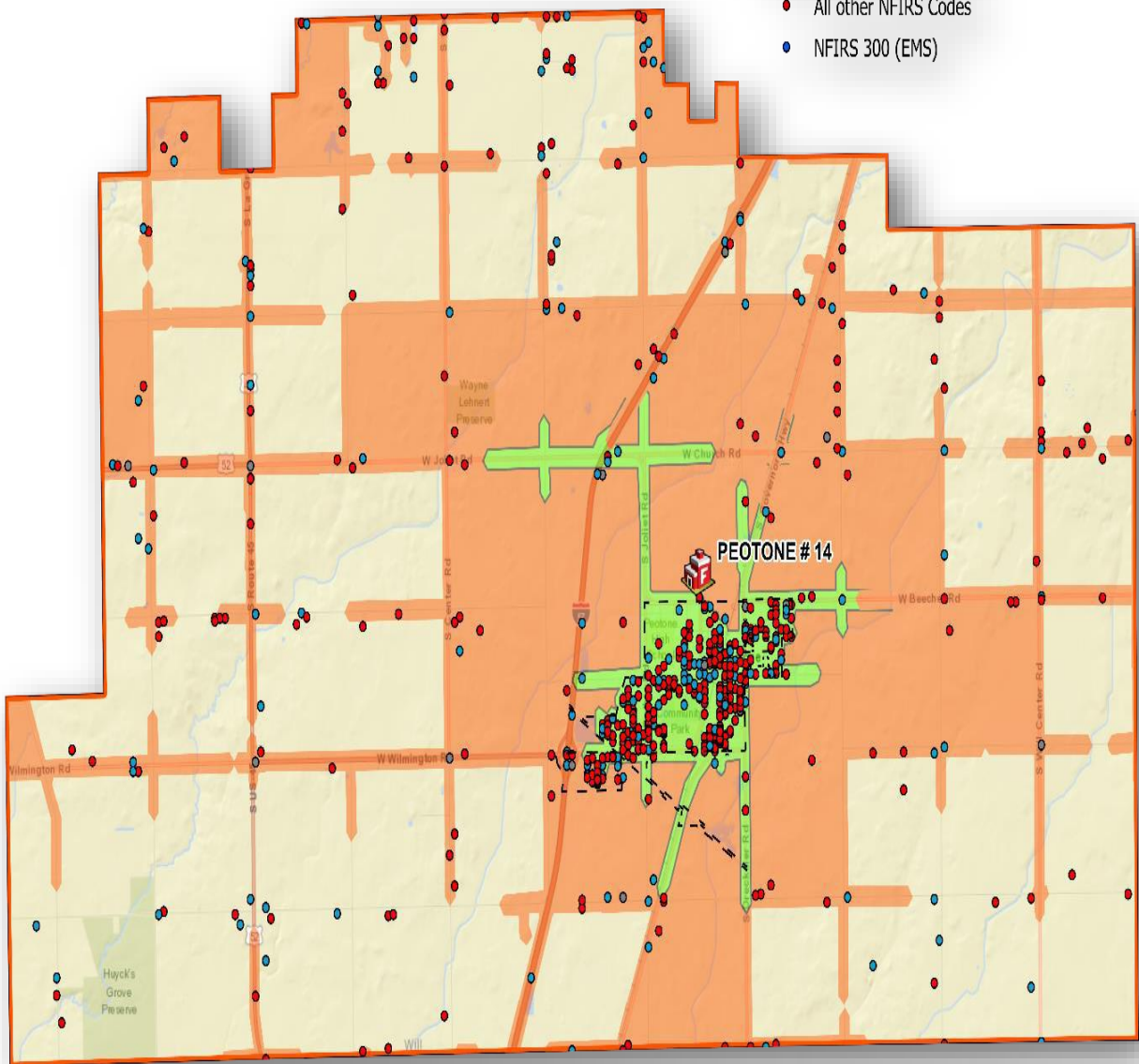
**Incident Response Time >4 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 1,414**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)





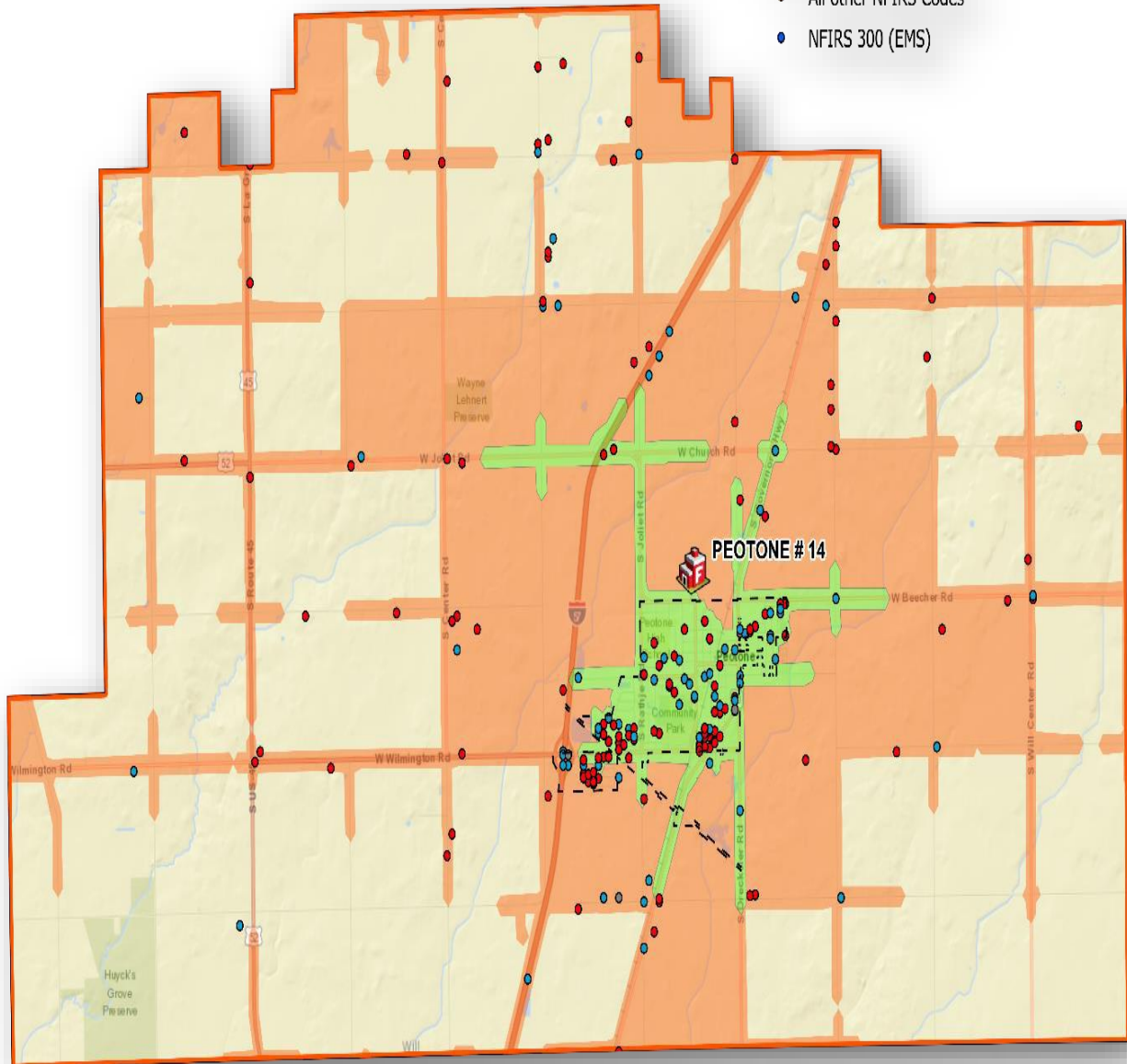
**Incident Response 6-8 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 321**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)





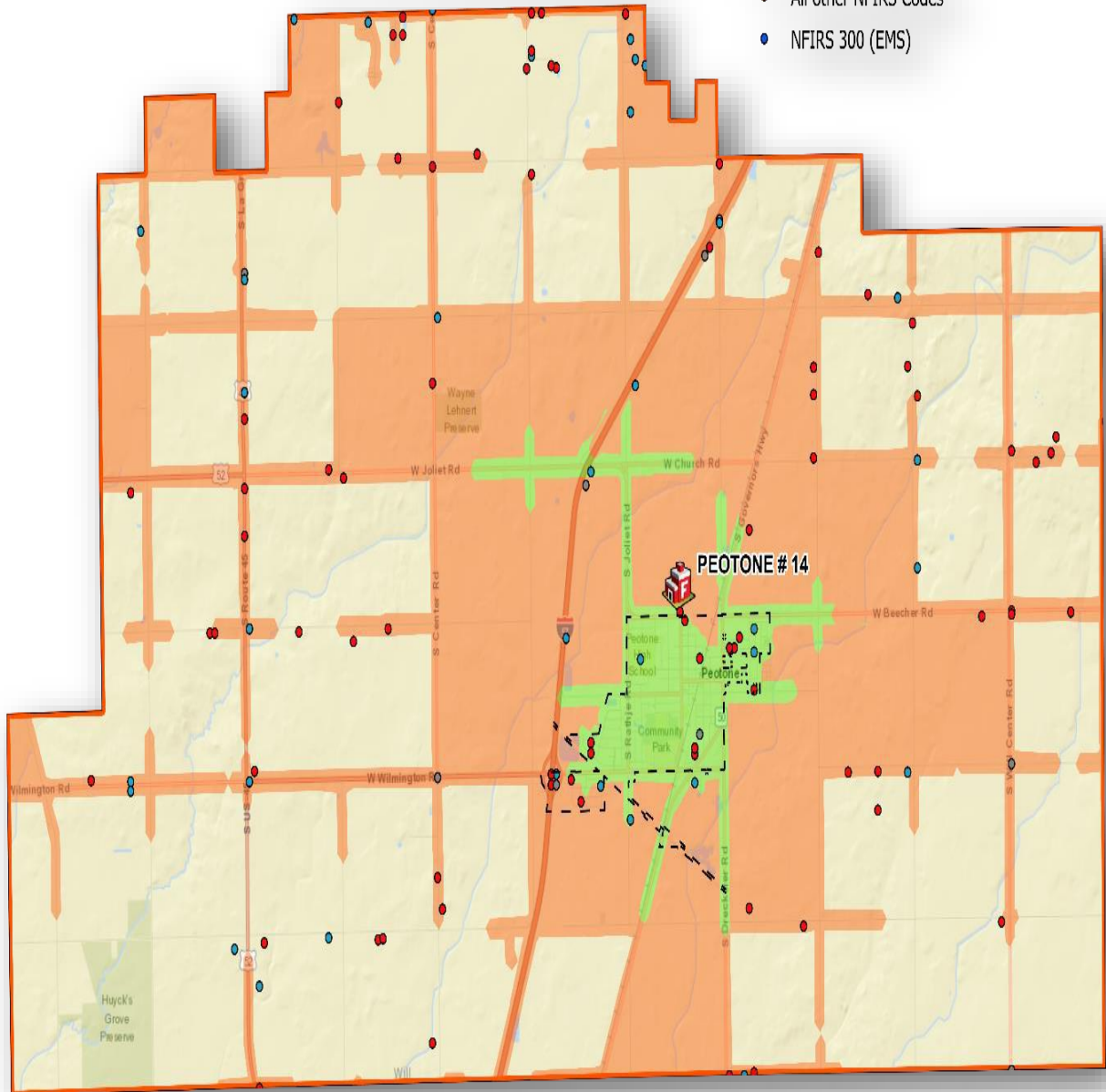
**Incident Response 8-10 min  
Aug. 2016 - Aug. 2019  
Incident Count: 158**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)





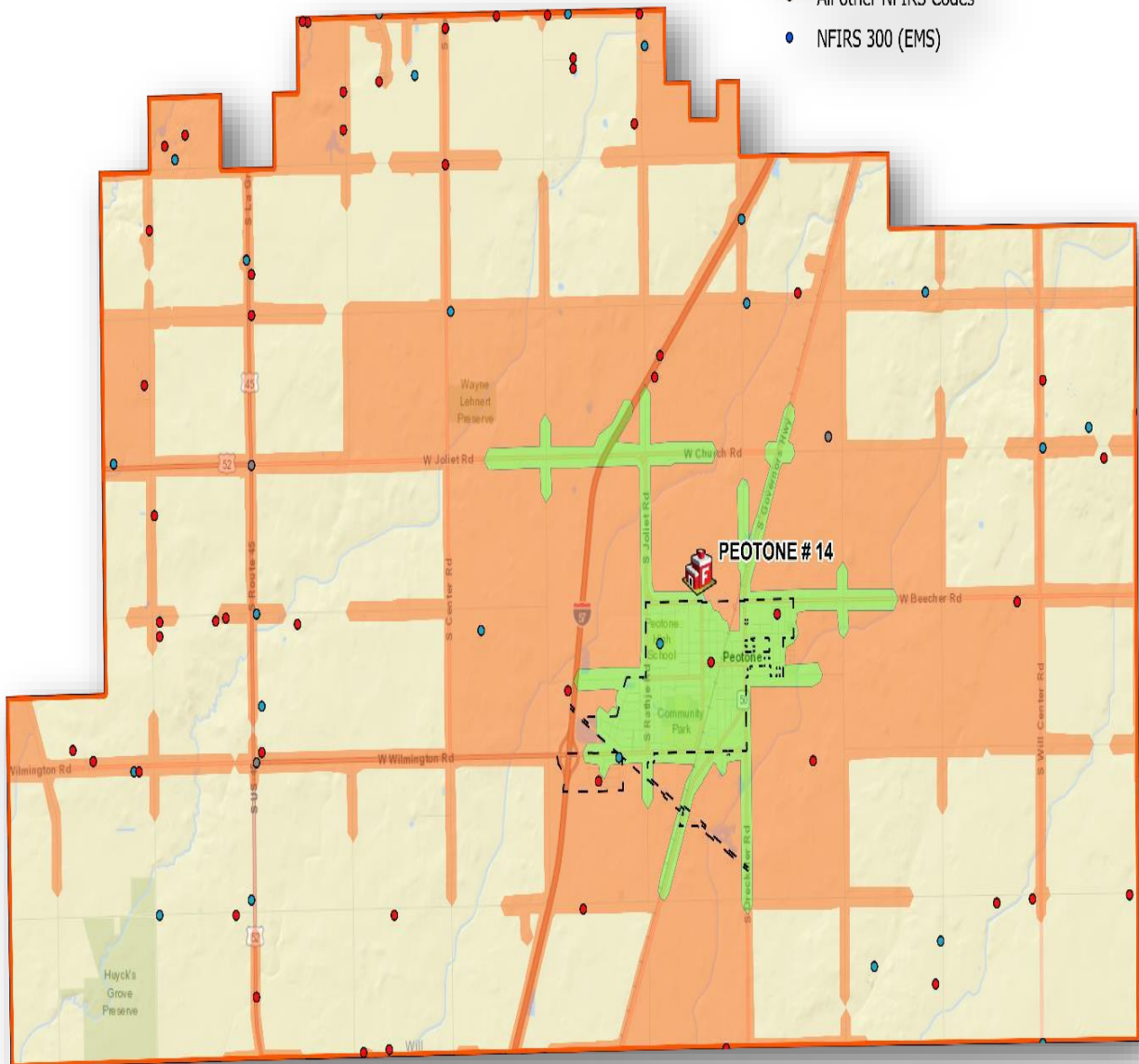
**Incident Response 10-12 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 101**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)





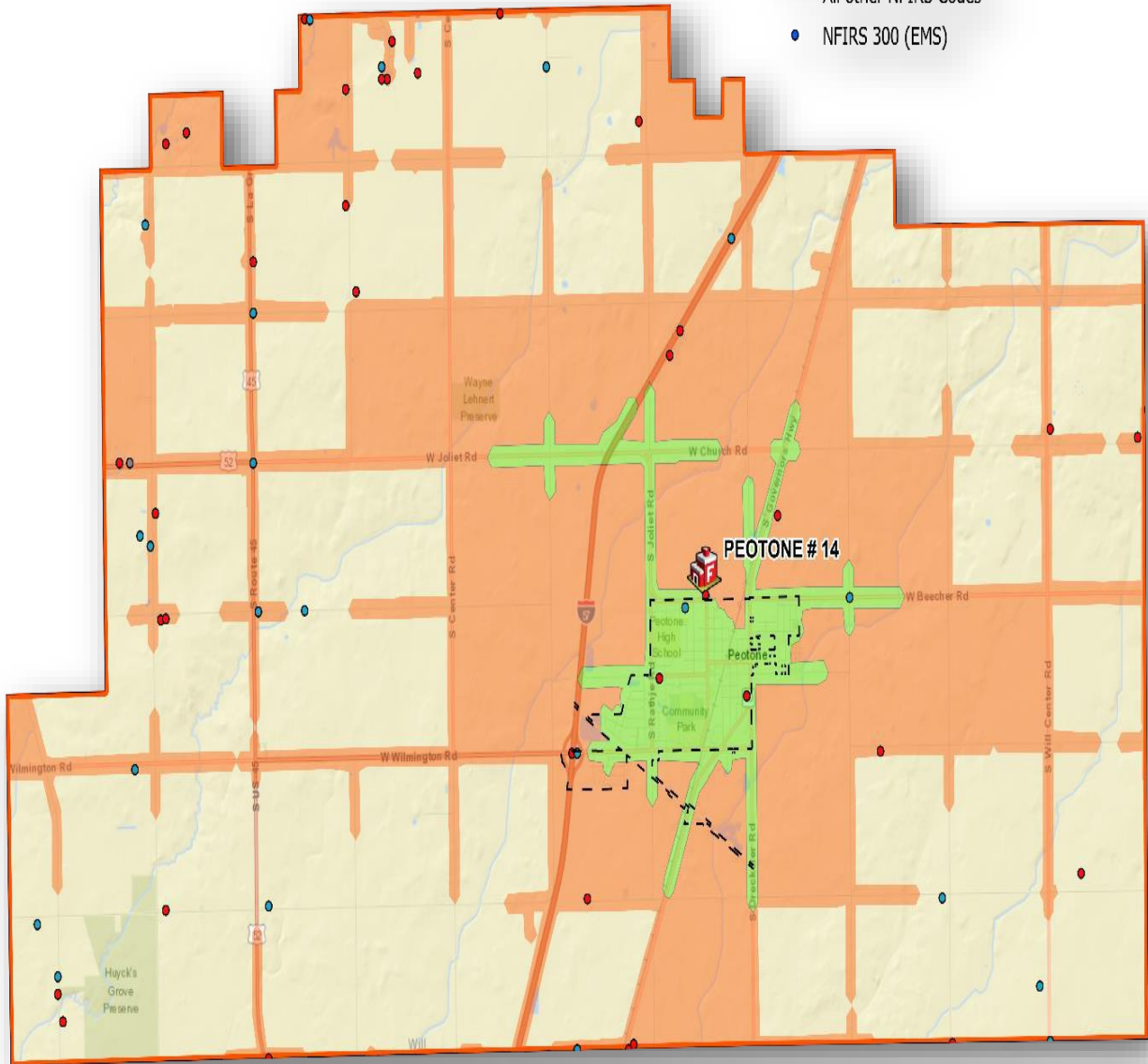
**Incident Response >12 min  
Aug. 2016 - Aug. 2019  
Incident Count: 68**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)





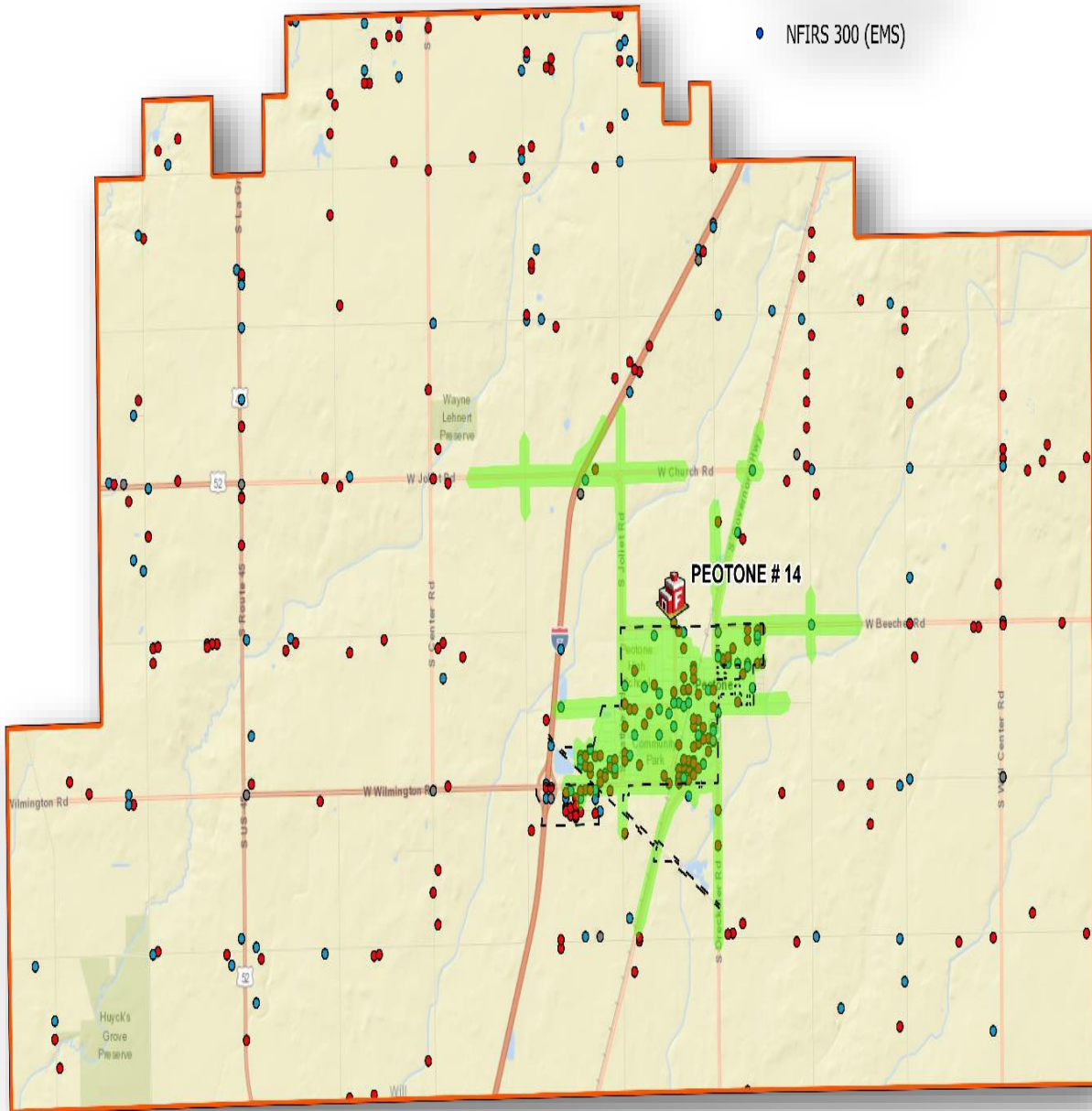
**Incident Travel Time >4 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 739**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)







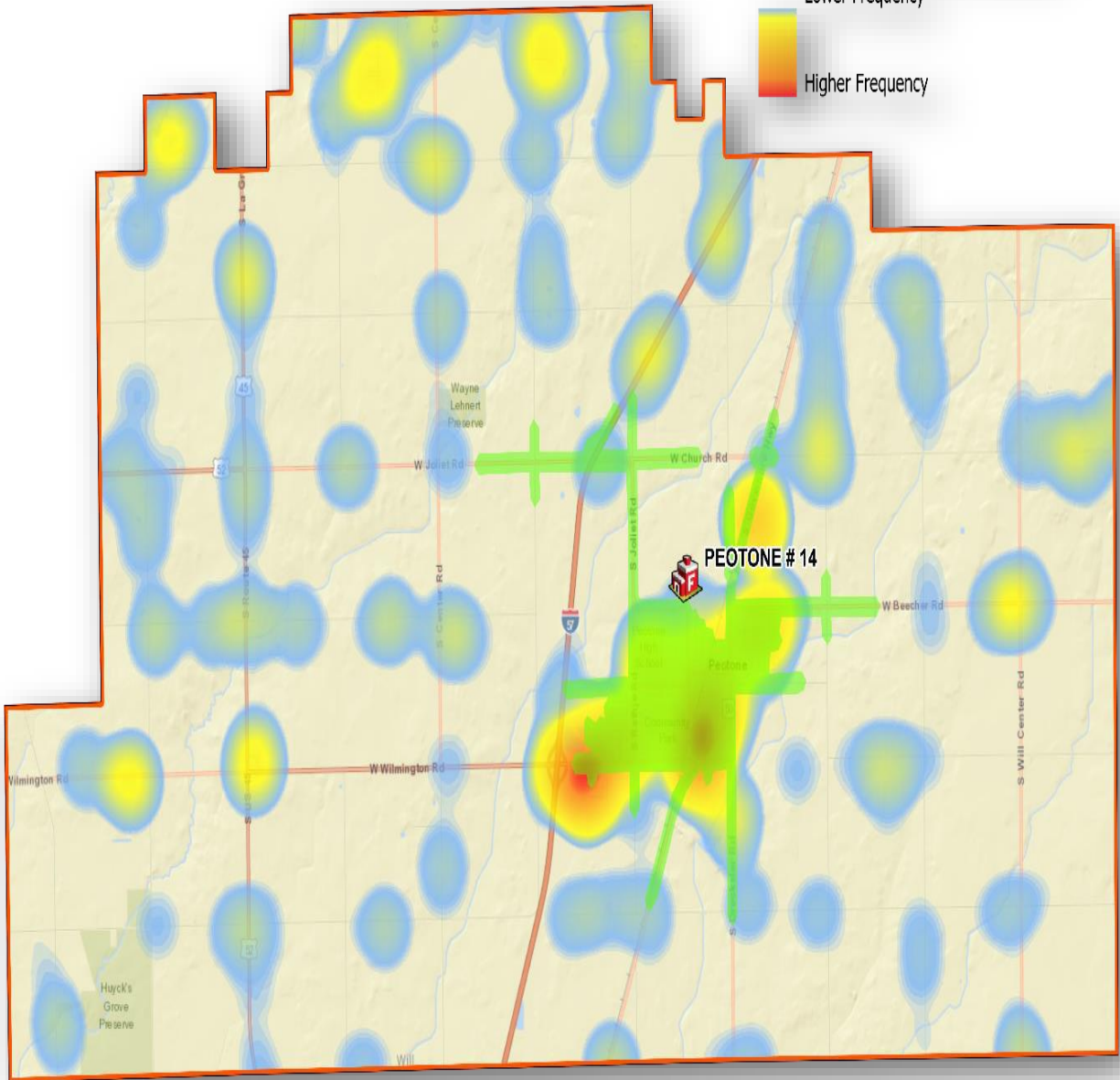
**Incident Travel Time >4 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 739**

**Fire Station Drive Times**

- Less than 4 Minutes
- 4 - 8 Minutes

**NFIRS Incident Density**

- Lower Frequency
- Higher Frequency





## TRAVEL TIME POTENTIAL - Current

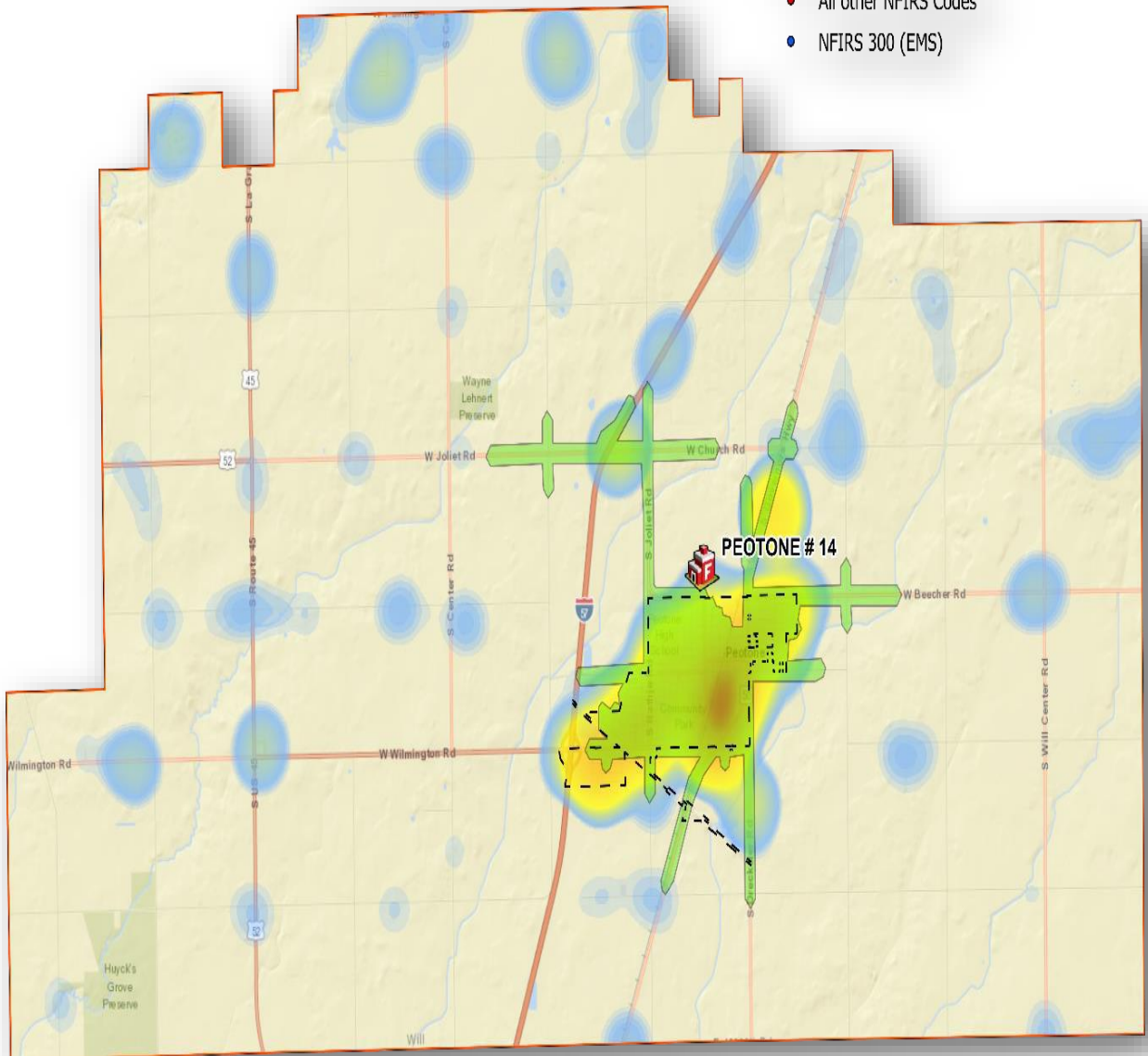
**Incident Response Time >4 min**  
**Aug. 2016 - Aug. 2019**  
**Incident Count: 1,414**

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes

### NFIRS Incidents

- All other NFIRS Codes
- NFIRS 300 (EMS)

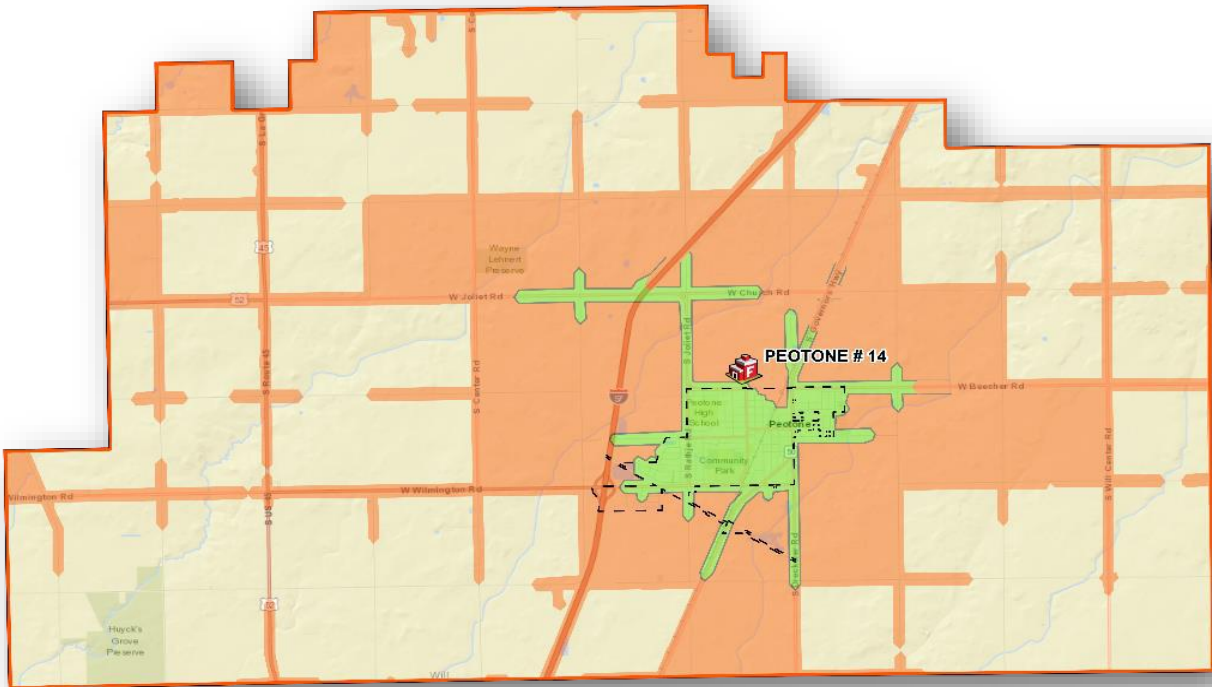




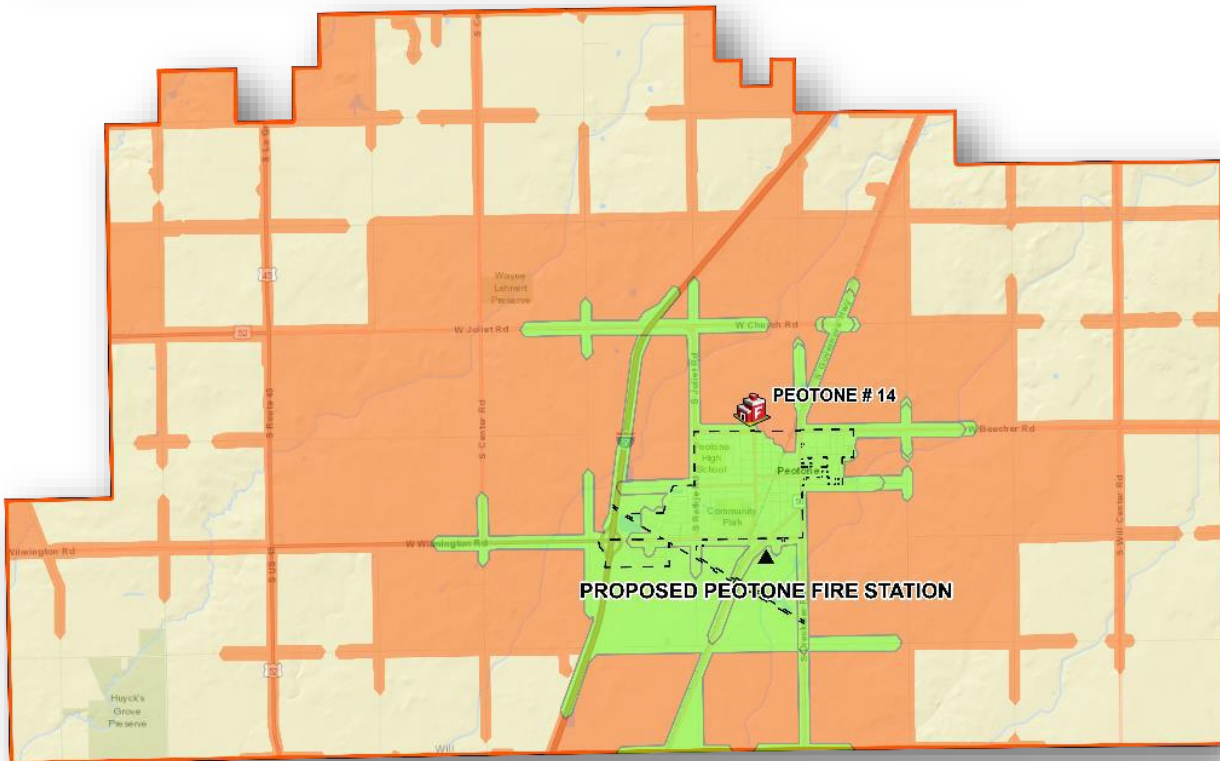
### TRAVEL TIME POTENTIAL - PROPOSED STATION 2

### Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes



CURRENT Service Area Coverage



Service Area Coverage with Additional Station



### Fire Station Drive Times

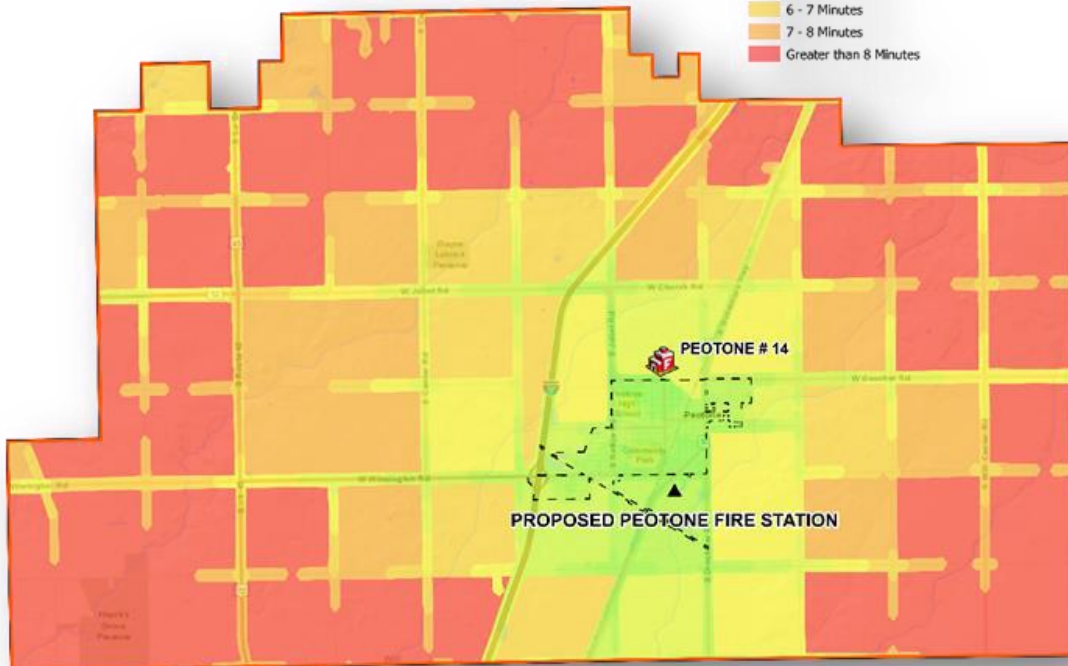
- Less than 1 Minute
  - 1 - 2 Minutes
  - 2 - 3 Minutes
  - 3 - 4 Minutes
  - 4 - 5 Minutes
  - 5 - 6 Minutes
  - 6 - 7 Minutes
  - 7 - 8 Minutes
  - Greater than 8 Minutes
- ▬ Municipal Boundaries



CURRENT Service Area Coverage

### Fire Station Drive Times

- Less than 1 Minute
  - 1 - 2 Minutes
  - 2 - 3 Minutes
  - 3 - 4 Minutes
  - 4 - 5 Minutes
  - 5 - 6 Minutes
  - 6 - 7 Minutes
  - 7 - 8 Minutes
  - Greater than 8 Minutes
- ▬ Municipal Boundaries



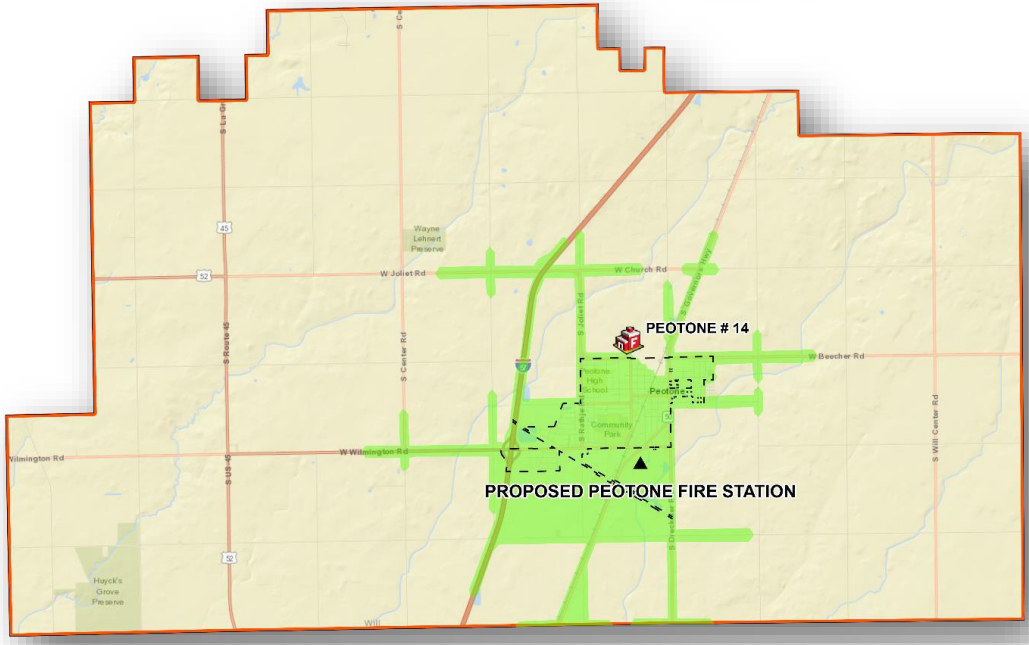
Service Area Coverage with Additional Station



### 4/8-MINUTE TRAVEL TIME POTENTIAL (WITH 2<sup>ND</sup> STATION OR RELOCATED NEW SINGLE STATION)

Fire Station Drive Times

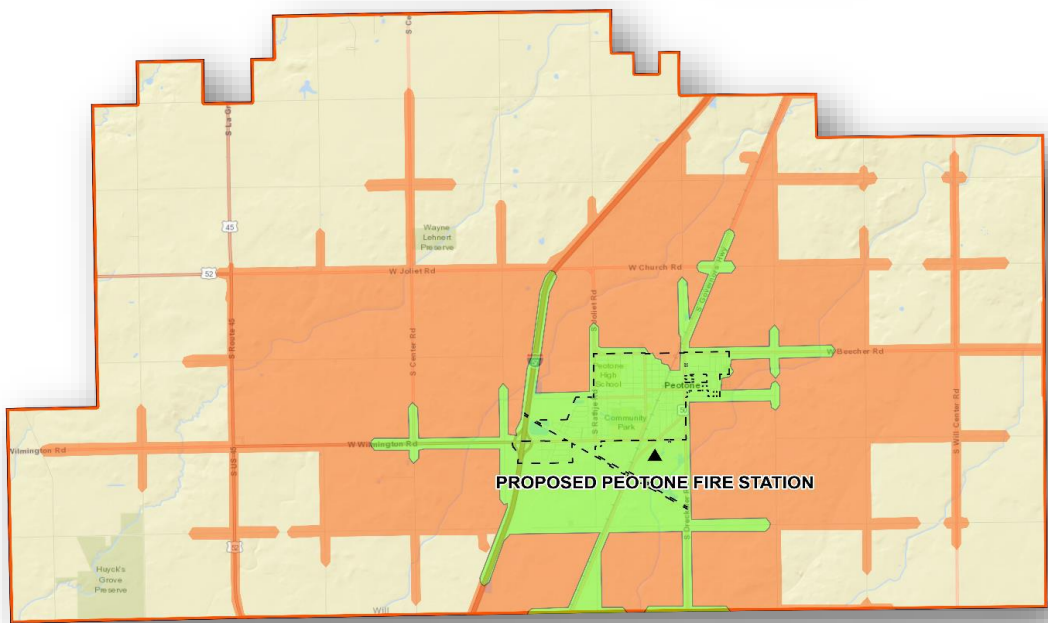
- Less than 4 Minutes
- 4 - 8 Minutes



CURRENT Service Area Coverage with Additional Station

Fire Station Drive Times

- Less than 4 Minutes
- 4 - 8 Minutes



Service Area Coverage with RELOCATED NEW STATION ONLY





**SECTION 6 - A Plan for Maintaining and Improving Response Capabilities**



**SECTION 6**

Plan for  
Maintaining &  
Improving  
Response  
Capabilities



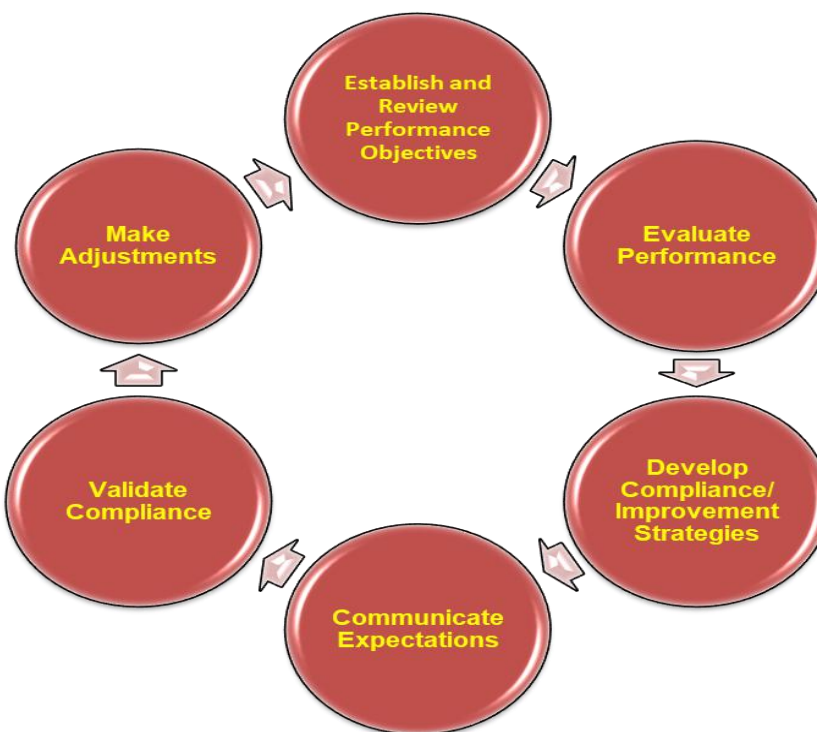


## Plan for Maintain and Improving Response Capabilities

The plan is to develop, maintain, and improve response capabilities. It is recommended that the District began with a proven model of Plan-Do-Check-Act similar to the outline below.

### Compliance / Review Methodology

Implementing a plan to guide improving and maintaining SOC response capabilities and performance has been a goal for the Fire Protection District. To achieve this goal, the District is committed to the SOC process being developed to continually analyze the data and use the analytics for continual improvement. With facilitation by the Chief, the team will be assigned the responsibility of managing the compliance outlined in the following steps.



#### Step 1 – Establish and Review Performance Objectives to establish performance objectives.

- Identify services provided.
- Defined level of service.
- Identify and categorize levels of risk.
- Developed performance distribution/concentration measures and associated objectives.

While much of this process may remain the same with each CRA-SOC process, it is essential to review the underlying organizational assumptions and ensure they are still accurate and relevant. This can be in the form of environmental scanning with an emphasis on community expectations, updating and establishing any new performance measures will occur when:

- There are changes in the type(s) services delivered by the District.
- New mandated laws or regulations that require a change in the method of service delivery.
- Significant changes occur within the District boundaries.
- Anytime the Board of Trustees or the Fire Chief feels there is a need to adjust performance service delivery and associated performance objectives.

#### Step 2 – Evaluate Performance Objectives at all levels.

Performance as a District-wide level





---

<b>DAILY</b>	<b>STATION/UNIT LEVEL</b>	(including CQI on EMS)
<b>MONTHLY</b>	<b>SHIFT/ BATTALION LEVEL</b>	(each/all 3 shifts)
<b>QUARTERLY</b>	<b>OPERATIONS/ADMIN LEVEL</b>	(review all shifts)
<b>YEARLY</b>	<b>OPS/ADMIN/BATTALIONS</b>	(SOC/Deployments)

### **Step 3 – Develop Compliance Strategies that will include, but not limited to:**

- Ensure the maximization of existing resources.
- Evaluation of partnering opportunities.
- Consideration of alternate means of service delivery.
- Create recommendations for allocating additional financial resources to improve service delivery.
- Individual or group actions that can improve service delivery.
- Recommend response performance reporting systems.

### **Step 4 – Communicate Expectations**

This edition of the CRA-SOC clearly outlines service level response performance objectives. These performance objectives need to be communicated to the operations personnel responsible for service delivery. The methods for communicating objective performance expectations may include, but are not limited to:

- Direct communication with crews by the Chiefs.
- Publish and post the CRA-SOC on the District internet and in-station.
- Exploring near real-time live delivery of response expectations via email alerts.

### **Step 5 – Validate Compliance**

Chiefs will monitor response performance data each shift for gross deviance from performance standards:

- Monthly performance reports that include performance data by unit, station, and shift will be developed, standardized, and distributed to all personnel through the chain of command.
- Quarterly performance reports will be developed and delivered at the quarterly meetings.

A comprehensive annual performance report will be developed. The annual report will include: all aspects of performance compliance for the previous calendar year, any significant trends that were identified because of analyzing performance, any new external influences or altered conditions, new growth and development trends, and new or changing risks. The annual report shall be submitted to the Chief and Board of Trustees for their review and comments.

### **Step 6 – Make Necessary Adjustments**



By reviewing the information developed for the validation of compliance, any performance “gaps” can be identified, and a plan formulated for improvement developed by the Command Staff.

### Annual Review of the CRA-SOC Document

In addition to developing an annual performance report as outlined, the SOC team will review yearly the entire CRA-SOC to make any necessary adjustments. Following the SOC team's annual review, the CRA-SOC will be reviewed and adopted by the Board of Trustees also on an annual basis.





## Accreditation Overview

It is recommended that the District achieve Accreditation status. This CRA/SOC is one of the three components needed. The other two are a STRATEGIC PLAN and SELF-ASSESSMENT MANUAL.

### What is Accreditation?

CFAI accreditation is a process of agency self-assessment.

The Commission on Fire Accreditation International (CFAI) will provide your agency the accreditation model, various accreditation publications and training, and access to experienced peer assessors.



Working towards, achieving, and maintaining accreditation will:

- Raise the profile of your agency with your community
- Emphasize your agency’s dedication to excellence to your stakeholders
- Establish an agency-wide culture of continuous improvement
- Assist with communicating your leadership’s philosophies
- Build positive relationships with your labor groups
- Offer independent verification and validation of your agency’s operations
- Provide tangible data and information for your elected officials

Accredited agencies are often described as being community-focused, data-driven, outcome-focused, strategic-minded, well organized, adequately equipped, and adequately staffed and trained.

Part of the reason for this is the holistic scope of the CFAI model. It includes **ten categories with 252 performance indicators** that cover the span of fire and emergency service operations:

- **Governance and Administration**
- **Assessment and Planning**
- **Goals and Objectives**
- **Financial Resources**
- **Programs**
- **Physical Resources**
- **Human Resources**
- **Training and Competency**
- **Essential Resources**
- **External Systems Relationship**



Category 5 (Programs) covers the whole gamut:



- **Community Risk Reduction**
- **Public Education**
- **Fire Investigations**
- **Domestic Preparedness**
- **Fire Suppression**
- **EMS**
- **Technical Rescue**
- **Hazmat**
- **Aviation Rescue and Firefighting**
- **Marine and Shipboard Rescue and Firefighting**
- **Wildland Firefighting**

Like many fire and emergency services agencies, you may find yourself living in a world between public service and private demand. Your agency's goals likely include reducing property and life loss and promoting employee safety. However, you often find yourself making choices. Before making choices, wouldn't you want to know your current status? That's where self-assessment is invaluable. Self-assessment is an excellent way of coping with the rise of performance-based budgeting. This type of budgeting requires measuring, benchmarking, and analysis, all of which are in the CFAI model. Government accountability has also been an emerging trend for the last few decades. Self-assessment provides a reliable response to increased oversight by managers and elected officials and potential criticism from the community.

### **Accreditation – Is it worth it?**

Agency accreditation is a voluntary process. Some agencies seek a dollar-for-dollar return on investment before pursuing accreditation. The real investment is agency staff time, and the actual yield is a better-run, higher-performing agency. Accreditation is recognition of achievement Internationally. It shows to your community that your agency is performing to industry best practices and is holding itself accountable through an external peer review. Document review and onsite assessment by CFAI peer assessors are comprehensive. Accreditation reports often include peer recommendations for improvement beyond those your agency may have considered.





**SECTION 7 – Key Findings and Recommendations**



**SECTION 7**

**Key Findings and  
Rcommendations**





## Key Findings & Recommendations

These findings & recommendations are a result of the Board of Trustees' oversight and efforts to examine, and continually improve the most **effective and efficient** level of emergency services to the entire Fire Protection District. An extensive review of data was conducted from multiple sources: including NFIRS, CAD, RMS, Budgets, Audits, Annual Reports, and more. Data analytics utilizing GIS, StatsFD, and other software were part of this process. Below are several recommendations and observations made during site visits and include discussions with Command Staff. These are *in no particular order*, but all will help the District continue to improve and meet its mission – advancing public safety by being “committed to providing quality EMS and professional fire protection to meet the needs of our community.”

### ADMIN

- ✚ Hire a professional CPA, or financial director, to assist with budgeting inconsistencies & fiscal oversight
- ✚ Improve budget & financial reporting (employ accounting company/personnel)
- ✚ Develop a Strategic Plan
- ✚ Update Record Management System (RMS) for better data collection/reporting
- ✚ Improve data collection and entry
  - (standardize data points to evaluate on a monthly/quarterly basis, number of refusals, back to back calls, UHU, etc.)
- ✚ Standardize reporting to utilize data for analysis on a monthly/quarterly basis
- ✚ Evaluate task math based on actual call load and risk
- ✚ Work toward meeting Response benchmarks – plan set & process to monitor
- ✚ Continue outcome-based goal setting example outcomes (patient surveys, cardiac arrest, etc.)
- ✚ Complete Self-Assessment Manual (262-point top-down Performance Indicators review)
- ✚ Update Organization Chart, Job descriptions, and standard program data collection and outputs.
- ✚ Complete annual, formal documented Program Appraisals (tied to the budget & strategic plan)
- ✚ Achieve CPSE Accreditation status (and a Credential Certification for Officers)
- ✚ Improve the ISO rating using better training documentation, capture points from CRR
  - Example - ISO says only need a truck if you have > five (5), three (3) story buildings
- ✚ Improve Community Risk Reduction (CRR) fire prevention (inspections & public education activities)
- ✚ Create and promote Website, and digital footprint (Twitter, Facebook, Instagram) (**shared services**)
- ✚ Utilize **mySidewalk**, **NFORS**, or other online resources, for state-of-the-art interactive performance monitoring (in addition to StatsFD internally)

mySidewalk  
FIRE



### STAFFING

- ✚ Evaluate ways to simplify deployment model to improve efficiency, benchmark times
- ✚ Add Shift Commander/Battalion Chief position (for 24-hour Command oversight & CRR/Admin function)
- ✚ Work toward 4-person fire companies (NIST manpower efficiency studies & NFPA 1710)
- ✚ Deployment model to fit workload and monitor for efficiency
- ✚ Improve staffing inconsistencies (**60 for 6 spots**) – (onboarding & maintenance costs of personnel)
- ✚ Develop regionalized or shared resources/services (staffing, manning, reserves, etc.)

### APPARATUS

- ✚ Reserve apparatus rotated to the front line should keep front line unit identifier
- ✚ Eliminate jump companies (for improving turnout times & reducing inconsistencies)
- ✚ Increase response to Car Accidents & Car Fires to include additional fire company for safety/blocking
- ✚ Sharing of reserve apparatus
- ✚ Review and rate current fleet with actual call volume, historical, and deployment capabilities need

### TRAINING

- ✚ Training Division & Documentation improvements programmatic approach/ program appraisals
- ✚ Evaluate Special Operations (Rescue – Extrication, Water, CART, Hazmat) training and increase delivery/certification

### DISPATCH

- ✚ Improve Dispatch call processing times

### STATIONS

- ✚ Consider joint facilities/personnel with other FD's to reduce cost and improve coverage improve response time, coverage, and efficiency. (Regional approach)
- ✚ Consider relocation of Station 1 (or addition of a substation)



**SECTION 8 – APPENDIX**



# SECTION 8

## Appendix





---

## References

- ISO Summary & Report
- Organizational Duties
- Critical Infrastructure – FEMA/
- EMS Trip County by Primary Impression and Gender
- Historical Tornado Events





ISO

I.S.O.		CREDIT AVAILABLE	2019
<b>EMERGENCY COMMUNICATIONS</b>			
414 Emergency Reporting		3	3
	<i>Previously: Telephone Service</i>		100.0%
422 Telecommunicators		4	3.98
	<i>Previously: Operators</i>		99.5%
432 Dispatch Circuits		3	2.4
			80.0%
<b>440 CREDIT for EMERGENCY COMMS:</b>		<b>10</b>	<b>9.38</b>
			93.8%
<b>FIRE DEPARTMENT</b>			
513 Engine Companies		6	5.99
			99.83%
523 Reserve Pumpers		0.5	0
			0.00%
532 Pumper Capacity		3	3
			100.00%
549 Ladder Service		4	4
			100.00%
553 Reserve Truck/ Service Trucks		0.5	0
			0.00%
561 Deployment Analysis		10	2.76
	<i>Previously: Distribution</i>		27.60%
571 Company Personnel		15	6.76
			45.07%
581 Training		9	3.27
			36.33%
730 Operational Considerations		2	2
			100.00%
<b>590 CREDIT for FIRE DEPARTMENT</b>		<b>50</b>	<b>27.78</b>
			55.56%
<b>WATER SUPPLY</b>			
616 Supply System		30	21.59
			71.97%
621 Hydrants		3	2.92
			97.33%
631 Inspection and Flow Testing		7	4.8
	<i>Previously: Inspection &amp; Condition</i>		68.57%
<b>590 CREDIT for WATER SUPPLY</b>		<b>40</b>	<b>29.31</b>
			73.28%
SUBTOTAL			<b>66.47</b>
<b>DIVERGENCE</b>			
<i>Relative Difference between FD &amp; WS</i>			
Divergence = -.5[ CWS -0.8(CFD)]			<b>-3.54</b>
<b>COMMUNITY RISK REDUCTION</b>			
1025 FPB		2.2	0.51
			23.18%
1033 Pub Ed		2.2	1.55
			70.45%
1044 Investigations		1.1	0.82
			74.55%
<b>CREDIT for COMMUNITY RISK RED.</b>		<b>5.5</b>	<b>2.88</b>
			52.36%
<b>2019</b>			
<b>TOTAL:</b>		<b>105.5</b>	<b>65.81</b>
		CREDIT AVAILABLE	<b>62.38%</b>
			PREVIOUS
			<b>81.12</b>
		PPC	Points
		1	90.00 +
		2	80.00 - 89.99
		3	70.00 - 79.99
		4	60.00 - 69.99
		5	50.00 - 49.99
		6	40.00 - 39.99
		7	30.00 - 29.99
		8	20.00 - 19.99
		9	10.00 - 9.99
		10	0.00 - 9.99



## Organizational Duties

### Chief Schreiber –

- Administration, Purchase, Finance, and Operations

### D.C. Boyle –

- Responsible for Records Management (Calls, NIFRS, EMS billing)
- Including Submitting Reports & bills
- Quality Control of NIFRS & Attendance Reports
- Fire Inspections, Preplans, Plan Reviews
- Technical Rescue Coordinator
- Chairperson IT, Technology Division
- Assists Chief with Insurance inquiries, Subpoenas
- Assists Chief with billing for fires, hazmat, tower use
- Department Coordinator/Liaison for Fire Academy
- Assist the Training Division with Getting Personnel Signed Up for Tests
- Maintains Schedule & Maintenance of Training Tower

### Personnel Division

#### Capt. Applegate -

- Scheduling Part-Time Personnel
- Assist with Maintaining Personnel Records
- Recruitment of Part-Time Personnel
- Assists with Interview Process

### Training Division

#### Capt. Hall – Chairperson

Lt. Honsik

Lt. Dircks

FF B. Applegate

- Organize Training
- Implementing Special Training Sessions
- Training Schedule For the year
- Implement Orientation Training
- Responsible for Driver and Pump Training
- Make Schedule Available to Shift Officers
- Maintain Training Records
- Training Compliance For ISO, IDOL, OSFM
- Works with Deputy Chief with Getting Personnel Signed Up for Tests
- Works with Chief in coordinating attendance to outside classes/schools

#### Lt. Dircks– Cadet Coordinator



### EMS Division

#### **Capt. Petersen – Chairperson**

Lt. Young - Assistant

FF Pierce – EMS Equipment, Supplies, Inventories, PCR's

FF Dubois – EMS Equipment, Supplies, Inventories

FF Robbins – Q & A, EMS Mentoring

FF Populorum - Q & A, EMS Mentoring

FF Steik – Q & A, EMS Mentoring

FF Christenberry - Q & A, EMS Mentoring

- QA EMS Reports
- Inventory on EMS Supplies
- Procures Orders for EMS Supplies through DC or Chief
- Works with Training Division on Continuing Education/EMS Drills
- Maintains EMS Personnel Records and Compliance
- Responsible for researching, evaluating, implementing, and updating current and future EMS operations and equipment
- Responsible for preparing and coordinating IDPH Inspection.
- Scheduling ambulance inventories
- Ordering and inventory of Oxygen and Nitrous supplies

### Special Operations Division

#### **Lt. Honsik – Chairperson HazMat**

FF B. Applegate

#### **D.C. Boyle – Technical Rescue**

Lt. Dircks

#### **Capt. Hall – Water Rescue**

FF Haun

- Responsible for the Special Operations Programs, personnel, records and equipment along with special operations inventories
- Responsible for researching, organizing, presenting information to the Chief on any purchases
- Responsible for evaluating, implementing, and updating current and future special operations
- Works with Training Division regarding the training, continuing education for all personnel
- Maintains all department and team owned special operations equipment which includes scheduled calibrations, repairs, maintenance
- Responsible for recruitment of department members to the special operations teams

### Apparatus, Equipment, Fleet Services

#### **Lt. Hoffner – Chairperson**

FF Buckley

FF Lumb

FF Gericke

FF Gray

- Responsible for minor maintenance and repair of vehicles and equipment
- Scheduling of repairing vehicles and equipment
- Records of repairs, costs, and maintenance on vehicles and equipment
- Working with the Chief on researching, evaluating, implementing, and updating current and future apparatus and equipment
- Works with Chief for testing of pumps, ladders, aerial devices, generators, and other equipment



- Equipment includes tools, saws, hose, appliances, nozzles
- Responsible for managing fire apparatus inventories

### PPE Division

#### **Lt. Ruckman – Chairperson**

FF Gericke – SCBA Coordinator

FF Willis – SCBA Coordinator

Lt. Dircks – Class A Uniforms

FF Ruhbeck – Station Wear

Lt. Pena – Class B Uniforms

- Responsible for Portable & Mobile Radios, Pagers records, repairs, replacement, and distribution
- Responsible for Personal Protective Gear records, repairs, replacement, and distribution
- Responsible for SCBA & Bottle records, repairs, replacement, and distribution
- Responsible for uniforms and station wear records, repairs, replacement, and distribution
- Works with Chief on researching, evaluating, implementing, updating, organizing, specifications, and purchasing PPE, SCBA, uniforms, station wear

### IT, Technology Division

#### **DC Boyle – Chairperson**

Lt. Ruckman

FF Pierce

Responsible for all computers including updating, maintenance, repair, and records

- Works with Chief on researching, specifications, evaluating, implementing, updating, and purchasing computers and technology.
- Responsible for the Departments Web Site and updating
- Working with Training Division responsible for computer and technology training for department members

### Support Services/Facilities Division

#### **Lt. Petersen – Chairperson**

FF Francis

FF Giblin

- Responsible for inventory and management of station supplies
- Works with Chief with building and grounds maintenance, repairs, and projects

FF Klotz –

- MABAS Coordinator, NIMS Compliance, Dispatch & Communications Liaison, Works with Chief in preparing for significant events

### Public Education Division

#### **FF Pierce – Pub Ed Coordinator**

FF Mundt – Pub Ed

FF Robbins– Pub Ed

FF Gertler – Pub Ed

FF Haun – Pub Ed

- Responsible for.....



## Health & Safety Committee

### **Capt. Applegate – Chairperson**

Lt. Ruckman

FF Dubois

FF Mundt

FF Dobesh

- Meet at least twice a year to address safety issues
- Review the effectiveness of safety activities
- Develop and implement safety procedures
- Conduct a safety inspection of the facility at least once a year
- Observe safety performance and provide feedback
- Collect and analyze accident, injury, and exposure incidents
- Formulate specific action plans to improve safety from those incidents
- Works with Training Division regarding safety training
- Monitor medical standards and physical examination programs
- Develop and monitor physical fitness programs
- Cases involving extensive damage or extensive bodily injury, group works with the fire chief
- Work with the fire chief on the record-keeping of accidents, injury, or exposure



## Critical Infrastructure - FEMA/DHS

**\*This entire section below was taken verbatim from the DHS website to define better any of the 16 Critical Infrastructure identified in the Fire District**

### Commercial Facilities Sector

The Commercial Facilities Sector includes a diverse range of sites that draw large crowds of people for shopping, business, entertainment, or lodging. Facilities within the sector operate on the principle of open public access, meaning that the public can move freely without the deterrent of highly visible security barriers. Most of these facilities are privately owned and operated, with minimal interaction with the federal government and other regulatory entities.

The Commercial Facilities Sector consists of eight subsectors:

- Entertainment and Media (e.g., motion picture studios, broadcast media).
- Gaming (e.g., casinos).
- Lodging (e.g., hotels, motels, conference centers).
- Outdoor Events (e.g., theme and amusement parks, fairs, campgrounds, parades).
- Public Assembly (e.g., arenas, stadiums, aquariums, zoos, museums, convention centers).
- Real Estate (e.g., office and apartment buildings, condominiums, mixed-use facilities, self-storage).
- Retail (e.g., retail centers and Districts, shopping malls).
- Sports Leagues (e.g., professional sports leagues and federations).



### Communications Sector

The Communications Sector is an integral component of the U.S. economy, underlying the operations of all businesses, public safety organizations, and government. [Presidential Policy Directive 21](#) identifies the Communications Sector as critical because it provides an “enabling function” across all critical infrastructure sectors. Over the last 25 years, the sector has evolved from predominantly a provider of voice services into a diverse, competitive, and interconnected industry using terrestrial, satellite, and wireless transmission systems. The transmission of these services has become interconnected; satellite, wireless, and wireline providers depend on each other to carry and terminate their traffic, and companies routinely share facilities and technology to ensure interoperability.



### Emergency Services Sector

The Emergency Services Sector (ESS) is a community of millions of highly skilled, trained personnel, along with the physical and cyber resources that provide a wide range of prevention, preparedness, response, and recovery services during both day-to-day operations and incident response. The ESS includes geographically distributed facilities and equipment in both paid and volunteer capacities organized primarily at the federal, state, local, tribal, and territorial levels of government, such as city police Districts and fire stations, county sheriff’s offices, District of Defense police and fire Districts, and town public works Districts. The ESS also includes private sector resources, such as industrial fire Districts, private security organizations, and private emergency medical services providers.



## Energy Sector

The U.S. energy infrastructure fuels the economy of the 21st century. Without a stable energy supply, health and welfare are threatened, and the U.S. economy cannot function. Presidential Policy Directive 21 identifies the Energy Sector as uniquely critical because it provides an “enabling function” across all critical infrastructure sectors. More than 80 percent of the country's energy infrastructure is owned by the private sector, supplying fuels to the transportation industry, electricity to households and businesses, and other sources of energy that are integral to growth and production across the nation.



The energy infrastructure is divided into three interrelated segments: electricity, oil, and natural gas. The reliance on virtually all industries on electric power and fuels means that all sectors have some dependence on the Energy Sector. The Energy Sector is aware of its vulnerabilities and is leading a significant voluntary effort to increase its planning and preparedness. Cooperation through industry groups has resulted in substantial information sharing of best practices across the sector. Many sector owners and operators have extensive experience abroad with infrastructure protection and have more recently focused their attention on cybersecurity.

## Financial Services Sector

The Financial Services Sector represents a vital component of our nation's critical infrastructure. Large-scale power outages, recent natural disasters, and an increase in the number and sophistication of cyberattacks demonstrate the full range of potential risks facing the sector.



The Financial Services Sector includes thousands of depository institutions, providers of investment products, insurance companies, other credit and financing organizations, and the providers of the critical financial utilities and services that support these functions.

Financial institutions vary widely in size and presence, ranging from some of the world's largest global companies with thousands of employees and many billions of dollars in assets to community banks and credit unions with a small number of employees serving individual communities. Whether an individual savings account, financial derivatives, credit extended to a large organization, or investments made to a foreign country, these products allow customers to:

- Deposit funds and make payments to other parties
- Provide credit and liquidity to customers
- Invest funds for both long and short periods
- Transfer financial risks between customers



### Government Facilities Sector

The Government Facilities Sector includes a wide variety of buildings, located in the United States and overseas, that are owned or leased by federal, state, local, and tribal governments. Many government facilities are open to the public for business activities, commercial transactions, or recreational activities. In contrast, others that are not open to the public contain highly sensitive information, materials, processes, and equipment. These facilities include general-use office buildings and special-use military installations, embassies, courthouses, national laboratories, and structures that may house critical equipment, systems, networks, and functions. In addition to physical structures, the sector includes cyber elements that contribute to the protection of sector assets (e.g., access control systems and closed-circuit television systems) as well as individuals who perform essential functions or possess tactical, operational, or strategic knowledge. The Education Facilities Subsector covers pre-kindergarten through 12th-grade schools, institutions of higher education, and business and trade schools. The subsector includes facilities that are owned by both government and private sector entities.



The National Monuments and Icons Subsector encompasses a diverse array of assets, networks, systems, and functions located throughout the United States. Many National Monuments and Icons assets are listed in either the National Register of Historic Places or the List of National Historic Landmarks.

The Election Infrastructure Subsector covers a wide range of physical and electronic assets such as storage facilities, polling places, and centralized vote tabulations locations used to support the election process and information and communications technology to include voter registration databases, voting machines, and other systems to manage the election process and report and display results on behalf of state and local governments.

### Healthcare and Public Health Sector

The Healthcare and Public Health Sector protect all sectors of the economy from hazards such as terrorism, infectious disease outbreaks, and natural disasters. Because many of the sector's assets are privately owned and operated, collaboration and information sharing between the public and private sectors is essential to increasing the resilience of the nation's Healthcare and Public Health critical infrastructure. Operating in all U.S.



states, territories, and tribal areas, the sector plays a significant role in response and recovery across all other sectors in the event of a natural or manmade disaster. While healthcare tends to be delivered and managed locally, the public health component of the sector, focused primarily on population health, is managed across all levels of government: national, state, regional, local, tribal, and territorial.

The Healthcare and Public Health Sector are highly dependent on fellow sectors for continuity of operations and service delivery, including [Communications](#), [Emergency Services](#), [Energy](#), [Food and Agriculture](#), [Information Technology](#), [Transportation Systems](#), and [Water and Wastewater Systems](#).





### Information Technology Sector

The Information Technology Sector is central to the nation's security, economy, and public health and safety as businesses, governments, academia, and private citizens are increasingly dependent upon Information Technology Sector functions. These virtual and distributed functions produce and provide hardware, software, and information technology systems and services, and—in collaboration with the [Communications Sector](#)—the Internet. The sector's complex and dynamic environment makes identifying threats and assessing vulnerabilities difficult and requires that these tasks be addressed collaboratively and creatively.



Information Technology Sector functions are operated by a combination of entities—often owners and operators and their respective associations—that maintain and reconstitute the network, including the Internet. Although information technology infrastructure has a certain level of inherent resilience, its interdependent and interconnected structure presents challenges as well as opportunities for coordinating public and private sector preparedness and protection activities.

### Transportation Systems Sector

The District of Homeland Security and the District of Transportation are designated as the Co-Sector-Specific Agencies for the Transportation Systems Sector. The nation's transportation system quickly, safely, and securely moves people and goods through the country and overseas.



The Transportation Systems Sector consists of seven key subsectors or modes:

- **Aviation** includes aircraft, air traffic control systems, and about 19,700 airports, heliports, and landing strips. Approximately 500 provide commercial aviation services at civil and joint-use military airports, heliports, and seaplane bases. Also, the aviation mode includes commercial and recreational aircraft (manned and unmanned) and a wide variety of support services, such as aircraft repair stations, fueling facilities, navigation aids, and flight schools.
- **Highway and Motor Carrier** encompasses more than 4 million miles of roadway, more than 600,000 bridges, and more than 350 tunnels. Vehicles include trucks, including those carrying hazardous materials; other commercial vehicles, including commercial motor coaches and school buses; vehicle and driver licensing systems; traffic management systems; and cyber systems used for operational management.
- **Maritime Transportation System** consists of about 95,000 miles of coastline, 361 ports, more than 25,000 miles of waterways, and intermodal landside connections that allow the various modes of transportation to move people and goods to, from, and on the water.
- **Mass Transit and Passenger Rail** includes terminals, operational systems, and supporting infrastructure for passenger services by transit buses, trolleybuses, monorail, heavy rail—also known as subways or metros—light rail, passenger rail, and vanpool/rideshare. Public transportation and passenger rail operations provided an estimated 10.8 billion passenger trips in 2014.
- **Pipeline Systems** consist of more than 2.5 million miles of pipelines spanning the country and carrying nearly all the nation's natural gas and about 65 percent of hazardous liquids, as well as various chemicals. Above-ground assets, such as compressor stations and pumping stations, are also included.



- **Freight Rail** consists of seven major carriers, hundreds of smaller railroads, over 138,000 miles of active railroad, over 1.33 million freight cars, and approximately 20,000 locomotives. An estimated 12,000 trains operate daily. The District of Defense has designated 30,000 miles of track and structure as critical to mobilization and resupply of U.S. forces.
- **Postal and Shipping** moves about 720 million letters and packages each day and includes large integrated carriers, regional and local courier services, mail services, mail management firms, and chartered and delivery services.

- **Water and Wastewater Systems Sector**

Safe drinking water is a prerequisite for protecting public health and all human activity. Adequately treated wastewater is vital for preventing disease and protecting the environment. Thus, ensuring the supply of drinking water and wastewater treatment and service is essential to modern life and the Nation's economy.



The Water and Wastewater Systems Sector is vulnerable to a variety of attacks, including contamination with deadly agents; physical attacks, such as the release of toxic gaseous chemicals; and cyberattacks. The result of any variety of attacks could be large numbers of illnesses or casualties and a denial of service that would also impact public health and economic vitality. The sector is also vulnerable to natural disasters. Critical services, such as firefighting and healthcare (hospitals), and other dependent and interdependent sectors, such as [Energy](#), [Food and Agriculture](#), and [Transportation Systems](#), would suffer negative impacts from a denial of service in the Water and Wastewater Systems Sector.



## EMS Trip Count by Primary Impression/Gender

### Trip Count by Primary Impression / Gender

Trip Date IS BETWEEN 01/01/2017 AND 12/31/2019

#### Peotone Fire Protection District

	Female	Male	Total
<b>Total</b>	<b>939</b>	<b>931</b>	<b>1,871</b>
No Complaint (Patient Contact-Adult)	99	129	228
Pain (Extremity)	89	104	193
Respiratory Distress/Breathing Difficulty	67	63	130
Weakness	63	47	110
Behavioral/Psychiatric Episode	61	48	109
Pain (Chest)	47	57	104
Abdominal Pain/Problem	69	33	102
No Apparent Injury	44	48	92
Pain (Back)	31	48	79
Pain (Head)	39	25	64
Altered LOC	30	32	62
Syncope/Fainting/Dizziness	33	26	59
Other	21	26	47
Nausea/Vomiting	33	9	42
Hypertension	15	22	37
Seizure/Convulsions	20	16	36
Headache	20	13	33
Traumatic Injury	12	20	32
Diabetic Symptoms	13	18	31
Cardiac Rhythm Disturbance	11	15	26
Musculoskeletal Injury	12	14	26
Behavioral/Psychiatric Disorder	14	11	25
Stroke/CVA	8	16	24
Unconscious/Unknown//Unresponsive	6	12	18
ETOH Abuse	7	10	17
None/Not Applicable	9	8	17
Obvious Death	7	10	17
No Complaint (Patient Contact-Child)	6	8	14
Fever	10	3	13
Poisoning/Drug Ingestion	6	6	12
Welfare Check	6	6	12
Airway Obstruction/Choking	3	8	11
Cardiac/Traumatic/Respiratory Arrest	2	9	11
Lift Assist/Patient Assist	6	3	9
Allergic Reaction	6	1	7
Pain (Eye)	4	3	7
Hypotension	2	3	5
Pain (Ear)	2	0	2
Stings/Venomous Bites	1	1	2
Electrocution	1	0	1
Hyperthermia	0	1	1
Hypothermia	1	0	1
Pregnancy/OB Delivery/Miscarriage	1	0	1
Smoke Inhalation	1	0	1
Vaginal Hemorrhage	1	0	1



## Historical Tornado Events

A total of 99 historical tornado events that had recorded magnitude of 2 or above found in or near Peotone, IL. This is a listing of tornadic activity within 50 miles of the District.

Distance (miles)	Date	Magnitude	Start Lat/Log	End Lat/Log	Length	Width	Fatalities	Injuries	Property Damage	Crop Damage	Affected County
3.7	2010-10-26	2	41°18'N / 87°44'W	41°20'N / 87°43'W	2.00 Miles	200 Yards	0	2	500K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down about 4 miles east of Peotone. The tornado produced its most intense damage along South Will Center Road, about halfway between Corning Road and Peotone-Beacher Road, removing a house's roof, collapsing exterior walls on the second floor of the house, and destroying a garage and three other outbuildings. Two teenage boys were injured in the house. Four power poles were also downed just northeast of the area along Peotone-Beecher Road. Additional EF1 and EF0 damage were found along a path running southwest toward Kennedy Road. This damage consisted of collapsed outbuildings, snapped cedar trees, and damage to homes. One home on Corning Road has pushed off its foundation, and the chimney collapsed. EPISODE NARRATIVE: A line of strong to severe thunderstorms moved across northern Illinois during the morning hours of October 26th. Three tornadoes were reported along with damaging winds.</p>											
3.8	1961-04-23	3	41°21'N / 88°13'W	41°19'N / 87°31'W	36.30 Miles	33 Yards	0	4	2.5M	0	Will
5.4	2008-06-07	2	41°24'N / 87°51'W	41°25'N / 87°47'W	4.00 Miles	150 Yards	0	0	500K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down along Paulding Road just west of Center Road, south of the Green Garden Country Club. A garage was leveled, and a house had part of its roof torn off and damage to the second story exterior walls. At the southwest corner of Bruns and 88th Avenue, barns and trees were damaged. The tornado continued along Bruns Road between 80th and 88th Avenues. On the south side of Bruns Road, a barn and an outbuilding were destroyed. The house lost a large section of the southeast wall on the second floor. Another house was heavily damaged with siding and a west wall blown off. North of Bruns Road, there was a barn that was practically destroyed with only a partial wall standing. A horse barn was destroyed with the stables intact and horses still standing in them. In the backyard of the next home, there were trees blown down, and debris, such as trailers and a small rowboat, were blown into the creek immediately north of Bruns Road. A chain-link fence was pulled from the ground. Many trees were uprooted and blown over. Power lines were also blown down. The next house had damage to two garages. The doors were blown out of both garages, and the roof of one garage was severely damaged. The house had siding and roof shingles blown off. A house at the east end of this section on Bruns Road, closest to 80th Avenue, had siding blown off and chimney damage. The tornado ended southwest of the intersection of Harlem Avenue and Manhattan-Monee Road, where there was minor tree damage. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast, reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
5.8	2008-06-07	2	41°21'N / 87°55'W	41°22'N / 87°53'W	2.00 Miles	400 Yards	0	0	50K	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado touched down northeast of Wilton Center, just north of Route 52 and east of Elevator Road, where there was minor tree damage. Based on photos and eyewitness reports, the tornado grew to about 400 yards full but remained in open fields with few structures or trees in its path. At 120th Avenue, a garage was destroyed, and all that remained was a cinder block base. A metal outbuilding was severely damaged. The tornado ended near Manhattan-Wilton Road, just west of Route 45. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast, reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
8.5	2008-06-07	2	41°26'N / 87°46'W	41°28'N / 87°44'W	2.00 Miles	150 Yards	0	6	5.5M	0K	Will
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado developed near Ridgeland Avenue and Dralle Road, where a high-tension metal truss tower collapsed, and four others were damaged. Power lines blocked Interstate 57. The tornado destroyed a mobile home and outbuildings east of Ridgeland between Dralle and Stuenkel Roads before crossing Interstate 57. The tornado was rated EF2 in this area. Six people were injured in vehicles on Interstate 57. Several cars were damaged, and a semi semi-trailer was destroyed. East of Interstate 57 at Stuenkel Road, a large warehouse had bay doors blown in, much of the roof collapsed, and the west wall blown in. Utility poles were pushed over along South Central Avenue. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast, reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.</p>											
11.5	2008-06-07	2	41°28'N / 87°44'W	41°30'N / 87°40'W	4.00 Miles	150 Yards	0	0	4.0M	0K	Cook
<p><b>Brief Description:</b> EVENT NARRATIVE: A tornado which touched down in northwest Will County, crossed Steger Road into Cook County, just west of Cicero Avenue. The tornado hit a subdivision on the northwest corner of Steger Road and Cicero Avenue. Large tree limbs were blown down, and a couple of trees were uprooted. Homes were somewhat sheltered by large trees and only sustained minor damage. One home near Cicero Avenue had part of its roof torn off. East of Cicero Avenue, the tornado weakened slightly as it moved through an apartment complex. Only minor damage to roofs, soffits, and siding was noted. The tornado hit another subdivision along Imperial Drive. A few homes had garages partially collapsed or destroyed. The tornado then passed through an open area before crossing Governors Highway and the Illinois Central tracks, just south of Sauk Trail. The tornado hit an apartment complex just east of the highway and railroad tracks. One three-story building had much of the roof ripped off, and part of the third-floor exterior walls blown down. Carports were collapsed, and other buildings</p>											



had minor damage. The tornado was rated EF2 in this area. The tornado moved through the intersection of Sauk Trail and Richton Square Road, where a grocery store and car wash sustained damage. The tornado then weakened to EF0 intensity as it continued northeast across Central Park Avenue and the northwest part of Central Park. Only minor damage to trees was observed in a subdivision in this area. The tornado crossed the E J and E tracks, and then it damaged a roof at an apartment complex near North Street and Orchard Drive. The last signs of tree damage were just southwest of the intersection of Lincoln Highway and Western Avenue. Multiple eyewitnesses reported a dog that was picked up by the tornado and carried a few hundred feet away. The dog, a 125-pound Rottweiler, was unharmed. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast, reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.

12.4	1963-04-17	4	41°11'N / 88°06'W	41°08'N / 87°37'W	25.20 Miles	130 Yards	1	50	2.5M	0	Kankakee
12.6	1965-05-26	2	41°30'N / 87°42'W		1.00 Mile	50 Yards	0	0	25K	0	Cook
13.4	1988-04-05	2	41°16'N / 88°09'W	41°30'N / 87°56'W	23.00 Miles	50 Yards	0	0	0K	0	Will
15.6	1993-08-15	2	41°31'N / 87°58'W		0.30 Mile	20 Yards	0	0	500K	0	Will

**Brief Description:** A tornado touched down briefly in a New Lenox subdivision. One house was nearly destroyed. The roof was torn off, and there was severe damage to one wall. Another home sustained minor damage, and trees were damaged.

15.6	1982-04-02	3	41°03'N / 87°59'W	41°12'N / 87°51'W	12.00 Miles	750 Yards	0	15	25.0M	0	Kankakee
16.2	1965-11-12	2	41°34'N / 87°48'W	41°34'N / 87°47'W			0	0	25.0M	0	Cook
16.5	2008-06-07	2	41°12'N / 88°12'W	41°20'N / 88°00'W	14.00 Miles	200 Yards	0	0	500K	0K	Will

**Brief Description:** EVENT NARRATIVE: A tornado touched down in far northwest Kankakee County then crossed County Line Road into Will County north of Essex. Treetops were sheared off at Essex and Cooper Roads. A clear path could be seen in the trees at McGuire Road. At Route 113 and Smiley Road near Custer Park, trees were snapped and uprooted. Across the Kankakee River, a two-story house had its roof completely removed, and there was extensive tree damage. The tornado reached EF2 intensity at this point. The tornado continued across Route 102 near Ritchie, where trees were damaged. The tornado crossed old Chicago Road near Kahler Road, where power lines were blown down, a shed and barn were damaged, and there was minor damage to a house. Another shed was destroyed. The tornado weakened as it moved from Symerton and Kennedy Roads to Warner Bridge and Arsenal Roads. There was no damage except to one tree. There was minor damage to a barn and tree limbs north of Arsenal Road before the tornado dissipated. EPISODE NARRATIVE: A single supercell thunderstorm developed over western Illinois and moved northeast, reaching Lake Michigan near the Illinois Indiana state line several hours later. This single thunderstorm produced eight different tornadoes as it moved east across Illinois.

17.0	1954-06-01	2	41°15'N / 87°29'W				0	0	25K	0	Lake
17.1	1965-11-12	2	41°27'N / 88°15'W	41°34'N / 87°48'W	24.50 Miles	120 Yards	2	90	25.0M	0	Will
17.3	1954-04-07	3	41°00'N / 88°13'W	41°15'N / 87°45'W	29.60 Miles	400 Yards	1	13	250K	0	Kankakee
17.4	1956-08-23	2	41°35'N / 87°47'W				0	3	250K	0	Cook
18.1	1957-07-12	2	41°23'N / 87°27'W				0	0	250K	0	Lake
18.9	2004-04-20	2	41°05'N / 87°37'W	41°06'N / 87°37'W	3.00 Miles	50 Yards	0	0	0	0	Kankakee

**Brief Description:** The tornado began in an open field and moved north northeast along county road 11000 East, knocking down trees and limbs. The tornado intensified from County Road 2630 South to 2430 South, where homes were damaged, a mobile home was destroyed, and large trees were knocked down or damaged. The most intense damage occurred at a church where the roof was taken off, and walls were pushed down. The tornado continued across a farm field knocking over two pivot irrigation systems. It ended near 1000 South where trees were damaged.

19.0	1962-06-23	2	41°36'N / 87°43'W		0.50 Mile	100 Yards	0	10	250K	0	Cook
19.8	2010-06-05	3	41°03'N / 87°45'W	41°04'N / 87°36'W	8.00 Miles	175 Yards	0	1	600K	0K	Kankakee

**Brief Description:** EVENT NARRATIVE: The tornado began 3 miles northwest of St. Anne in Kankakee county. The tornado developed just west of 6000E Road and tracked to the east, where it produced damage to a home and a garage along the road. At this location, a single-family home collapsed upon itself, leaving it inhabitable. The garage sustained damage to its roof and exterior walls. The tornado was rated EF2 with winds estimated at around 113 mph. The tornado continued to move to the east northeast, where it increased in intensity as it encountered yet another family home at the intersection of Route 1 and 4000S Road. This home and the garage/barn next to it sustained considerable damage, leaving home inhabitable. The damage to the home consisted of all the walls collapsing, with all remaining debris from the house tossed to the northeast. The



garage walls collapsed with the contents tossed to the east. Two four-wheelers and a four-door automobile inside the garage were lifted and flipped over as the tornado passed.

Further north along Route 1, there was minor structural damage to a couple of homes and several trees uprooted. Damage at this location was rated EF3 with winds estimated at around 142 mph and a path width of 175 yards. As this tornado continued to the northeast, it lost its intensity as it came across another residence at the intersection of 4000S Road and 8500E Road. Here, a house sustained partial damage to its roof, with several surrounding trees having limbs sheared at the top. The tornado weakened at this point, and the damage was rated EF1 with winds estimated at around 97 mph and a path width of 50 yards. The tornado moved to the northeast through a wooded area, causing damage to many trees along its way. The more significant damage occurred near the intersection of 13000E Road and Gamble Road in the Hopkins Park area, where several healthy large hardwoods treetops were sheared or broken. Some homes were damaged by falling trees. The tornado continued to weaken, and the damage was rated EF1, with winds estimated at around 88 mph and a path width of 50 yards. It was along 13000E Road where the tornado appeared to lift, with no other damage evident beyond this point. EPISODE NARRATIVE: Severe thunderstorms, including a few long-tracked supercells, moved across central and northern Illinois, producing damaging winds, hail, and tornadoes.

20.7	1961-04-23	3	41°19'N / 87°31'W	41°09'N / 87°19'W	15.40 Miles	33 Yards	0	0	25K	0	Lake
21.8	1974-06-20	3	41°17'N / 87°25'W	41°19'N / 87°20'W	4.50 Miles	150 Yards	0	5	250K	0	Lake
21.9	1969-09-04	2	41°01'N / 87°45'W		2.50 Miles	33 Yards	0	0	25K	0	Kankakee
22.0	1976-03-12	3	41°00'N / 87°42'W	41°05'N / 87°32'W	10.00 Miles	150 Yards	0	0	250K	0	Kankakee
22.5	1972-04-06	2	41°31'N / 88°11'W	41°33'N / 88°05'W	5.10 Miles	50 Yards	0	0	250K	0	Will
22.7	1966-07-13	2	41°30'N / 87°25'W				0	0	25K	0	Lake
23.2	1988-04-05	2	41°11'N / 88°17'W	41°16'N / 88°09'W	7.00 Miles	50 Yards	0	0	0K	0	Grundy
23.2	1972-04-06	2	41°32'N / 88°12'W	41°34'N / 88°04'W	6.80 Miles	50 Yards	1	22	250K	0	Will
23.3	1990-06-22	2	41°01'N / 87°56'W	41°00'N / 87°55'W	1.00 Mile	100 Yards	0	0	250K	0	Kankakee
24.0	1965-11-12	3	41°33'N / 87°29'W	41°34'N / 87°24'W	4.10 Miles	40 Yards	0	14	250K	0	Lake
24.1	1990-06-22	2	41°00'N / 87°55'W	40°59'N / 87°53'W	2.00 Miles	100 Yards	0	0	250K	0	Iroquois
24.3	1991-03-27	3	41°35'N / 88°06'W	41°38'N / 88°04'W	3.00 Miles	200 Yards	0	0	25.0M	0	Will
24.5	1976-03-12	3	41°05'N / 87°32'W	41°10'N / 87°17'W	13.90 Miles	250 Yards	0	7	250K	0	Newton
25.4	1991-03-27	3	41°40'N / 88°01'W	41°42'N / 87°51'W	9.20 Miles	200 Yards	0	7	25.0M	0	Cook
25.5	1991-03-27	3	41°38'N / 88°04'W	41°40'N / 88°01'W	2.80 Miles	200 Yards	0	0	25.0M	0	Will
25.7	2008-08-04	2	41°33'N / 87°25'W	41°33'N / 87°22'W	3.00 Miles	30 Yards	0	0	1.0M	0K	Lake

**Brief Description:** EVENT NARRATIVE: A tornado touched down just northeast of the Ridge Road and Cline Avenue intersection. Damage occurred at the Griffith Park Plaza Mall, where windows were blown out of a row of stores, and a portion of a roof was blown off a vacant store. The damage path continued to the east, behind the mall. Two parked semi-trailers in the back of the mall were shifted eastward while a third was completely knocked over. The area to the east of this mall in the subdivision along and north of 37th Avenue near Lafayette Avenue and Rensselaer Avenue sustained some of the strongest wind damage from this tornado. Two houses on Lafayette Avenue had their roofs blown off with another house on Rensselaer Avenue, also having its roof collapsed and a garage door pushed inward. Another significant damage that occurred was at the Habitat for Humanity storage building at Colfax and Ridge Road. Here, a cinder block storage building completely toppled to the ground. Although the building was knocked over, it appears as though the main cause of it faltering was due to a large tree that fell on top of it. At a nearby gas station within feet of this building, no damage occurred, and people witnessed the tornado descending on the shelter. EPISODE NARRATIVE: A line of powerful thunderstorms moved across northwest Indiana during the evening hours of August 4th. These storms produced widespread and significant wind damage.

25.9	1976-06-13	4	41°40'N / 88°00'W	41°42'N / 87°56'W	3.30 Miles	1760 Yards	2	23	2.5M	0	Cook
26.0	1990-08-28	5	41°38'N / 88°15'W	41°31'N / 88°06'W	11.20 Miles	600 Yards	29	350	250.0M	0	Will



26.0	1967-04-21	4	41°40'N / 87°50'W	41°44'N / 87°33'W	15.00 Miles	200 Yards	33	500	25.0M	0	Cook
26.4	1973-04-19	2	41°18'N / 88°18'W				0	0	250K	0	Grundy
26.4	1950-01-25	2	41°10'N / 87°20'W				0	0	250K	0	Kankakee
27.0	1963-04-17	4	41°08'N / 87°32'W	41°02'N / 87°15'W	16.10 Miles	110 Yards	0	2	0K	0	Newton
27.5	1976-06-13	4	41°42'N / 87°56'W	41°44'N / 87°55'W			0	0	250K	0	Du Page
28.7	1975-05-20	2	41°12'N / 88°19'W		2.00 Miles	50 Yards	0	1	250K	0	Grundy
28.7	1984-04-27	3	41°35'N / 88°15'W	41°37'N / 88°11'W	4.00 Miles	200 Yards	1	5	2.5M	0	Will
29.8	1976-03-12	3	41°10'N / 87°17'W	41°15'N / 87°12'W	6.60 Miles	250 Yards	1	8	250K	0	Jasper
30.0	1965-11-12	2	41°24'N / 88°28'W	41°27'N / 88°15'W	11.40 Miles	120 Yards	0	0	25.0M	0	Grundy
30.0	1976-03-12	2	41°27'N / 87°16'W	41°29'N / 87°13'W	2.30 Miles	200 Yards	0	0	3K	0	Lake
30.2	1951-11-13	2	41°36'N / 87°20'W		0.30 Mile	400 Yards	0	0	250K	0	Lake
30.5	1984-04-27	3	41°33'N / 88°20'W	41°35'N / 88°15'W	5.00 Miles	200 Yards	0	0	2.5M	0	Kendall
31.0	1962-07-20	2	41°32'N / 87°25'W	41°35'N / 87°08'W	14.90 Miles	33 Yards	0	0	25K	0	Lake
32.0	1992-06-17	2	40°53'N / 87°57'W		0.10 Mile	20 Yards	0	1	250K	0	Iroquois
32.1	1962-04-30	2	41°12'N / 87°12'W				0	0	250K	0	Jasper
33.4	1967-10-24	3	41°33'N / 87°13'W				0	0	25K	0	Porter
33.4	1976-03-12	2	41°29'N / 87°13'W	41°32'N / 87°10'W	3.30 Miles	33 Yards	0	0	3K	0	Porter
33.7	1977-06-30	2	41°31'N / 87°16'W	41°33'N / 87°08'W	6.80 Miles	300 Yards	0	1	2.5M	0	Lake
34.2	1987-07-06	2	40°55'N / 87°26'W		0.90 Mile	250 Yards	0	3	2.5M	0	Newton
34.6	1990-08-28	5	41°41'N / 88°21'W	41°38'N / 88°15'W	5.20 Miles	600 Yards	0	0	250K	0	Kendall
35.0	1976-03-12	3	41°38'N / 88°21'W	41°43'N / 88°14'W	7.80 Miles	30 Yards	0	0	2.5M	0	Kendall
35.4	1976-03-12	3	41°43'N / 88°14'W	41°51'N / 88°00'W	14.80 Miles	30 Yards	0	3	2.5M	0	Du Page
35.5	1976-03-12	3	41°15'N / 87°12'W	41°15'N / 87°02'W	8.00 Miles	250 Yards	0	0	0K	0	Jasper
35.6	1956-04-03	2	40°55'N / 88°12'W		2.00 Miles	50 Yards	0	0	25K	0	Ford
36.0	1965-11-12	2	41°48'N / 88°06'W		1.00 Mile	20 Yards	0	0	25K	0	Du Page
36.2	1971-08-24	2	41°46'N / 88°11'W		1.00 Mile	83 Yards	0	2	250K	0	Du Page
37.1	1965-09-14	2	40°49'N / 88°00'W		1.00 Mile	50 Yards	0	2	25K	0	Iroquois
37.4	1966-04-19	2	41°49'N / 88°07'W		0.50 Mile	40 Yards	0	0	250K	0	Du Page



37.5	1966-12-08	2	41°05'N / 87°09'W			0	1	25K	0	Jasper	
38.2	1965-04-11	3	41°21'N / 87°12'W	41°24'N / 86°55'W	14.80 Miles	33 Yards	0	0	25.0M	0	Porter
38.3	1954-04-07	3	40°53'N / 88°25'W	41°00'N / 88°13'W	13.00 Miles	400 Yards	0	0	250K	0	Livingston
38.6	2010-06-05	2	41°05'N / 88°31'W	41°05'N / 88°24'W	6.00 Miles	300 Yards	1	13	3.0M	0K	Livingston

**Brief Description:** EVENT NARRATIVE: The beginning of the Dwight tornado occurred about 6 miles west of Dwight and about a quarter-mile south of IL Route 17. On N 2200 E Road, 0.3 miles south of IL Route 17, a farmhouse sustained damage to windows, siding, and shingles, with many trees, uprooted or damaged. Outbuildings were also damaged. The tornado at this point was rated EF1, with a path width of 70 yards. Debris from this farm was spread 200 yards wide across the field at N 2300E Road. The tornado proceeded to strike the golf course at N 2400 E Road, where numerous large trees were snapped and uprooted. Golf cart sheds were unroofed or severely damaged. At this point, the tornado was rated low-end EF2 with a path width of 300 yards. The tornado then moved east across Interstate 55 and moved into Dwight, damaging a lumber yard and other businesses.

At Williams Street and old Route 66, a mobile home park was hit. Fourteen people were injured. One person who was seriously injured later died. At the mobile home park, 35 mobile homes were destroyed. Damage here was rated EF2. Large trees were uprooted, and power poles were snapped at the railroad tracks. At a ball field, a little farther east, trees and fences were damaged, and an announcer's booth was destroyed. Slightly farther east, there was minor damage to a church, but the church's garage was destroyed. There was damage to the high school auditorium roof and facade and a greenhouse. A storage garage was destroyed at the high school. The tornado then continued east into a subdivision between Philmar Street and Prospect Avenue, where many large trees were downed on top of homes. At Sunset Drive and Wilmac Street, a garage door and roof were taken off. A roof was taken off a house on Linden Street, a half-block west of IL Route 47. Three houses were uninhabitable and had to be destroyed. More than 100 homes had some damage. Damage in Dwight was rated high-end EF1 to low-end EF2. The tornado dissipated in an open field east of Route 47. EPISODE NARRATIVE: Severe thunderstorms, including a few long-tracked supercells, moved across central and northern Illinois, producing damaging winds, hail, and tornadoes.

38.9	1973-03-31	2	40°47'N / 87°58'W			0	0	25K	0	Iroquois	
39.0	1954-05-31	2	40°40'N / 88°06'W	40°53'N / 87°44'W	24.20 Miles	400 Yards	0	2	250K	0	Iroquois
39.2	1973-04-21	2	41°51'N / 88°06'W		0.20 Mile	33 Yards	0	0	25K	0	Cook
39.5	1962-04-30	3	41°18'N / 87°02'W				0	0	3K	0	Porter
39.5	1963-04-17	4	41°07'N / 87°15'W	41°06'N / 86°56'W	16.20 Miles	110 Yards	0	16	2.5M	0	Jasper
39.6	1967-09-26	2	41°12'N / 87°03'W		0.50 Mile	33 Yards	0	1	25K	0	Jasper
40.6	1958-08-06	2	41°44'N / 88°22'W		2.00 Miles	70 Yards	0	0	250K	0	Kane
40.9	1972-07-17	2	41°52'N / 88°08'W				0	0	2.5M	0	Du Page
41.3	1954-05-27	2	41°46'N / 88°20'W	41°51'N / 88°13'W	7.90 Miles	200 Yards	0	0	25K	0	Kendall
41.4	1976-03-12	2	41°55'N / 87°55'W	41°56'N / 87°54'W			0	25	2.5M	0	Du Page
41.5	1962-04-30	2	40°47'N / 87°28'W				0	5	25K	0	Newton
42.8	1961-03-04	2	41°54'N / 87°42'W	41°59'N / 87°35'W	7.90 Miles	100 Yards	1	115	25.0M	0	Cook
43.3	1958-06-08	2	40°56'N / 87°09'W				0	0	25K	0	Jasper
43.8	2009-08-19	2	41°36'N / 87°04'W	41°39'N / 87°01'W	4.00 Miles	60 Yards	0	0	1.5M	0K	Porter

**Brief Description:** EVENT NARRATIVE: A tornado touched down in southern Chesterton east of 11th Street and southwest of South Park Drive. The tornado quickly intensified as it moved to the northeast and caused the partial collapse of a gymnasium roof at the Chesterton Junior High School. A wind gust to 105 mph was measured by an anemometer near the school. This damage, along with numerous trees that were either uprooted or sheared off, was caused by tornado winds reaching 110 mph. The tornado was rated EF1 at this point with a path width of 40 yards. The tornado continued to track to the northeast across the New York Central railroad tracks toward Grant Avenue, where the roof of a warehouse had been peeled off and thrown about 15 yards behind the building to the north. The tornado continued to the northeast, where an apartment building on Brown Avenue lost its entire roof. This damage was caused by tornado winds reaching 120 mph. The tornado damage was rated EF2





through this area with a path width of 60 yards. In the city of Chesterton, 211 structures sustained damage; 8 were destroyed; 54 suffered significant damage, such as trees falling through roofs. The remaining 149 structures sustained damage, such as missing shingles or damaged gutters. Multiple vehicles were damaged by falling debris from buildings or trees. Numerous power lines were blown down along with utility poles blown down or snapped. This EF2 damage continued northeast where an entire field of healthy old hardwood tree trunks was snapped off or uprooted. The tornado then started to slightly weaken as it approached the Interstate 94 eastbound exit/westbound entrance ramps at Indiana Highway 49.

A home south of the interstate had a garage roof blown off with still numerous trees uprooted or sheared off. Tornado wind speeds here were estimated at 100 mph with an EF1 rating. Similar tree damage was noted along a path that continued to go to the northeast across Highway 49 and toward Highway 20 near Hadenfelt Road, where some aluminum roofing material of a storage facility had been peeled off. Tornado wind speeds were estimated at 95 mph here and were rated EF1 with a path width of 30 yards. The tornado continued to move through a heavily forested area in the Indiana Dunes National Lakeshore, eventually crossing Highway 12. Radar imagery and an aerial survey suggest that the tornado dissipated north of Highway 12. EPISODE NARRATIVE: Strong to severe thunderstorms moved across parts of northwest Indiana during the late afternoon and evening hours of August 19th, producing one tornado in Chesterton.

44.0	1956-05-21	2	40°43'N / 88°01'W	2.00 Miles	70 Yards	0	0	25K	0	Iroquois	
44.0	1965-05-26	2	41°54'N / 88°10'W	13.80 Miles	70 Yards	0	11	250K	0	Du Page	
45.0	1975-05-24	2	40°41'N / 87°42'W	0.10 Mile	10 Yards	0	0	25K	0	Iroquois	
45.3	1956-03-06	3	40°38'N / 88°00'W	9.40 Miles	500 Yards	0	6	250K	0	Iroquois	
45.9	1965-05-26	2	41°59'N / 87°55'W	42°00'N / 87°53'W		0	0	250K	0	Cook	
46.4	1959-09-26	2	41°58'N / 87°58'W	42°02'N / 87°48'W	9.30 Miles	33 Yards	0	0	250K	0	Du Page
47.1	2010-06-05	3	41°06'N / 88°43'W	41°05'N / 88°34'W	9.00 Miles	440 Yards	0	0	750K	0K	Livingston

**Brief Description:** EVENT NARRATIVE: Very quickly after the tornado that hit Streator lifted, yet another tornado touched down over extreme northern Livingston county approximately one-quarter mile south of the county line and about a half-mile west of 1100 E Road. Shortly after touching down, this tornado caused severe damage to homes on 1100 E Road and destroyed a barn as well. There were also several large trees downed in this location. As the tornado continued eastward, it completely collapsed a metal truss high tension electrical tower. It bent over several other metal truss electrical towers in its path, which is consistent with low-end EF3 damage. At this time, the tornado was moving through an extremely rural area; however, there was also a lone hardwood tree in its path that was debarked, with only large de-leaved branches remaining. The tornado continued eastward crossing Illinois Route 170 just south of the LaSalle and Livingston county line, where hardwood trees were snapped. Large trees were broken at a farmhouse, and a machine shed, and grain bins were destroyed. The tornado then moved eastward for several more miles, downing multiple trees and resulting in some minor structural damage between 1700 E Road and 1800 E Road. EPISODE NARRATIVE: Severe thunderstorms, including a few long-tracked supercells, moved across central and northern Illinois, producing damaging winds, hail, and tornadoes.

47.3	1976-03-12	2	41°56'N / 87°54'W	42°06'N / 87°42'W	15.10 Miles	150 Yards	2	41	2.5M	0	Cook
48.0	1970-04-30	2	42°00'N / 87°54'W	42°03'N / 87°49'W	4.90 Miles	33 Yards	0	9	25K	0	Cook
48.1	1978-06-25	2	41°32'N / 88°41'W		0.90 Mile	300 Yards	0	0	25K	0	La Salle
48.5	1972-08-25	2	42°02'N / 87°51'W		1.80 Miles	200 Yards	0	1	2.5M	0	Cook
48.9	1968-05-15	3	40°37'N / 87°42'W	40°39'N / 87°34'W	7.10 Miles	400 Yards	0	0	2.5M	0	Iroquois
49.7	1955-12-03	2	40°57'N / 88°57'W	41°11'N / 88°25'W	32.00 Miles	33 Yards	0	0	0K	0	La Salle
49.9	1994-04-26	2	41°06'N / 86°53'W		20.00 Miles	440 Yards	0	0	500K	0	Pulaski

**Brief Description:** The tornado touched down near Francesville in southwest Pulaski County then tracked northeast across the entire county, entering extreme northeast Fulton County 1.1 miles northeast of Monterey at 2313 EST. It then crossed into extreme southwest Marshall County 3.7 miles southwest of Culver at 2315 EST and lifted at 2321 EST about 2.5 miles southeast of Culver. The tornado destroyed five farm buildings and damaged numerous others. One home was destroyed. A mobile home was lifted off the ground and placed on top of a car. Dozens of large trees were uprooted at Tippecanoe River State Park north of Winamac. The tornado damage path was intermittent.

# COMMUNITY RISK ASSESSMENT

## STANDARD OF COVER



2020

**FLASHPOINT** 

---

*strategies, llc*