



PSCR Stakeholder Meeting | July 2019



# DISCLAIMER

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**Posted with permission**



## Background

- Volunteer firefighter since 2006
- 2008 - GIS Technician at Richmond Fire (VA)
- 2011 – National Geospatial Intelligence Agency
- 2014 - Lead Engineer on multiple grants in the fire service
- NFPA 950 / 951 Standard for Data Exchange for the Fire Service
- 2018 -Vice President International Public Safety Data Institute



# Challenges

- Technical complexity
- Data is distributed in multiple repositories
- Data optimized for storage, not query
- Lack of infrastructure
- Licensing costs
- Solutions often limited to scripts or applications vs platforms





A real-time, open source, data analytics and visualization platform for public safety organizations.

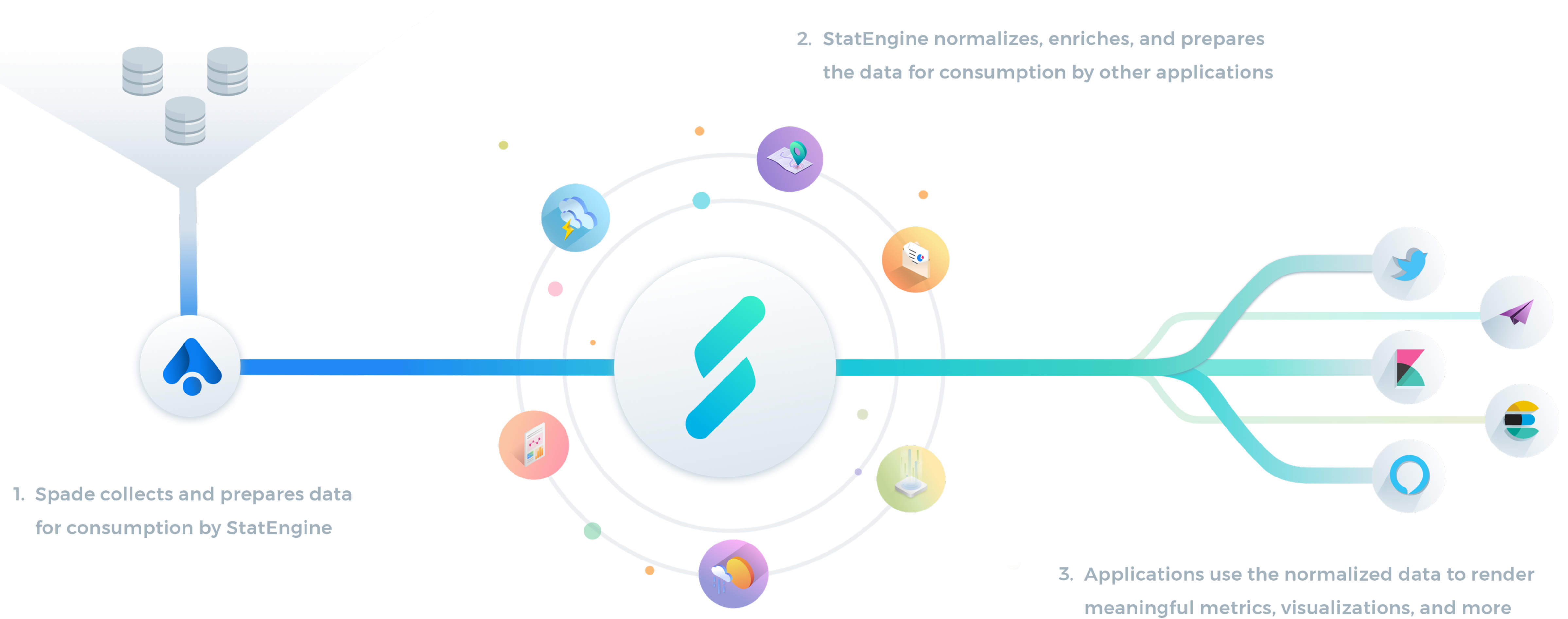


# Project Deliverables

- Data listener
- Data schemas
- Analytics platform
- Visualizations
- On-premises appliance
- Cloud instance
- Documentation



# Project Architecture





# Project Philosophy

- Maximize ROI
- Transparent
- Flexible
- Multiple paths of dissemination
- Eliminate vendor lock in
- Get in hands of PSOs then iterate



3,950,847

Incidents analyzed

Departments have loaded over 3.95 million incidents in StatEngine in the last 18 months.

690%

4,000

New incidents per day

Real time integrations push thousands of incidents a day to StatEngine.

33%

39

Departments live

Departments across the nation, of all sizes are using StatEngine.

178%



# Project Timeline

December 2017



Release 1 | December 2017

Project Website, basic data schema, automated local install, initial cloud instance, deployment documentation, authentication, data ingest, metrics, devops.

February 2018



Release 2 | June 2018

Production data schemas, authentication, authorization, basic production cloud instance, automated data ingestion, multi-PSO support, common visualizations.

May 2018



Release 3 | December 2018

Additional UI customizations, data enrichment, security scans, backup strategies, appliance finalization.

## Accelerated Timeline

Original timeline scheduled development from June 2017 to May 2019, with 4 releases. Our development efforts have been accelerated to meet partner demand putting the project significantly ahead of schedule.



June 2018



Release 4

Kibana customizations, reports,  
fully production cloud instance,  
training videos and guides,  
complete documentation, open  
source all libraries.



July 2018



Project completion!

End of project report, financial  
close-outs, etc.





What does our service delivery look like  
over the last year?



Search... (e.g. status:200 AND extension:PHP)

Uses lucene query syntax

suppressed Add a filter +

Actions +

Incident Count

37,542

Responding Units Count

57,397

Event Duration

30.6

90th percentile of Event Duration

90th Percentiles of Turnout Time

101.2

90th percentile of 90th Percentile Turnout Duration

90th Percentile Distance To Emergency

1.7

90th percentile of Distance from Fire Department

90th Percentile Response Time

7

90th percentile of response time (minutes)

Incident Types

Call Volume by Unit and Call Type







What does our service delivery look like  
over the last year?

*...In council district #1?*



Search... (e.g. status:200 AND extension:PHP)

Uses lucene query syntax

suppressed Add a filter +

Actions +

Incident Count

37,538

Responding Units Count

57,390

Event Duration

30.6

90th percentile of Event Duration

90th Percentiles of Turnout Time

101.2

90th percentile of 90th Percentile Turnout Duration

90th Percentile Distance To Emergency

1.7

90th percentile of Distance from Fire Department

90th Percentile Response Time

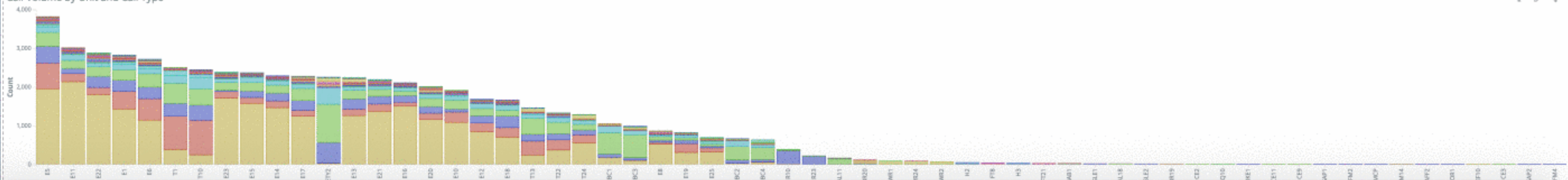
7

90th percentile of response time (minutes)

Incident Types



Call Volume by Unit and Call Type

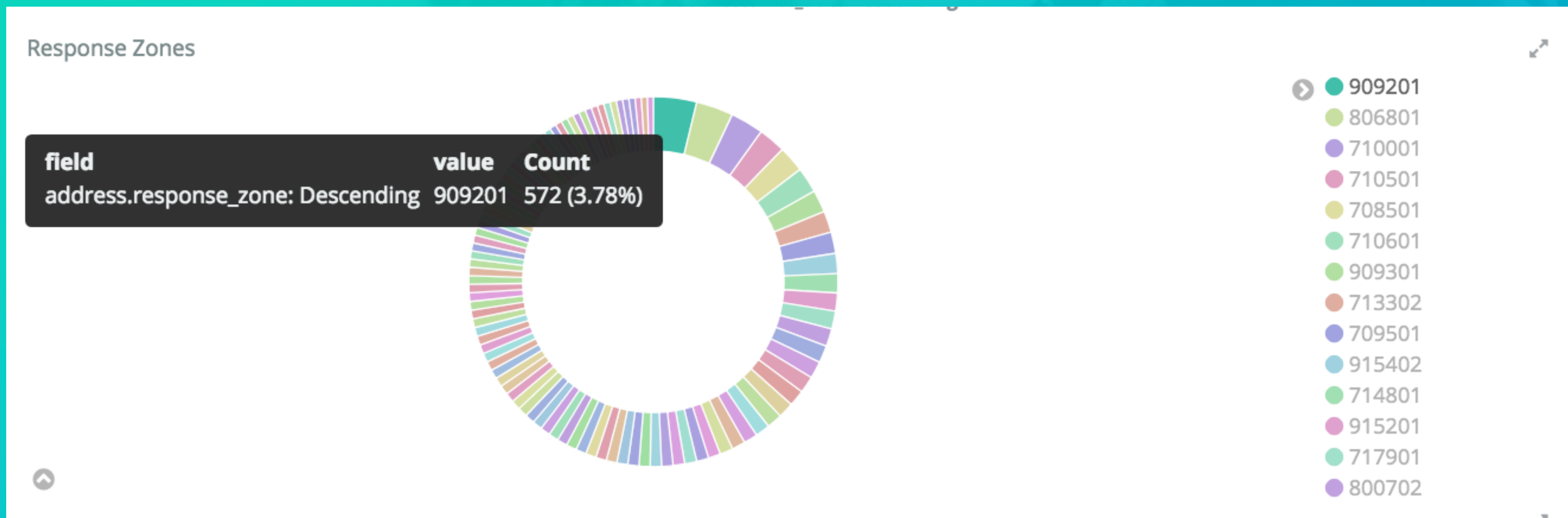




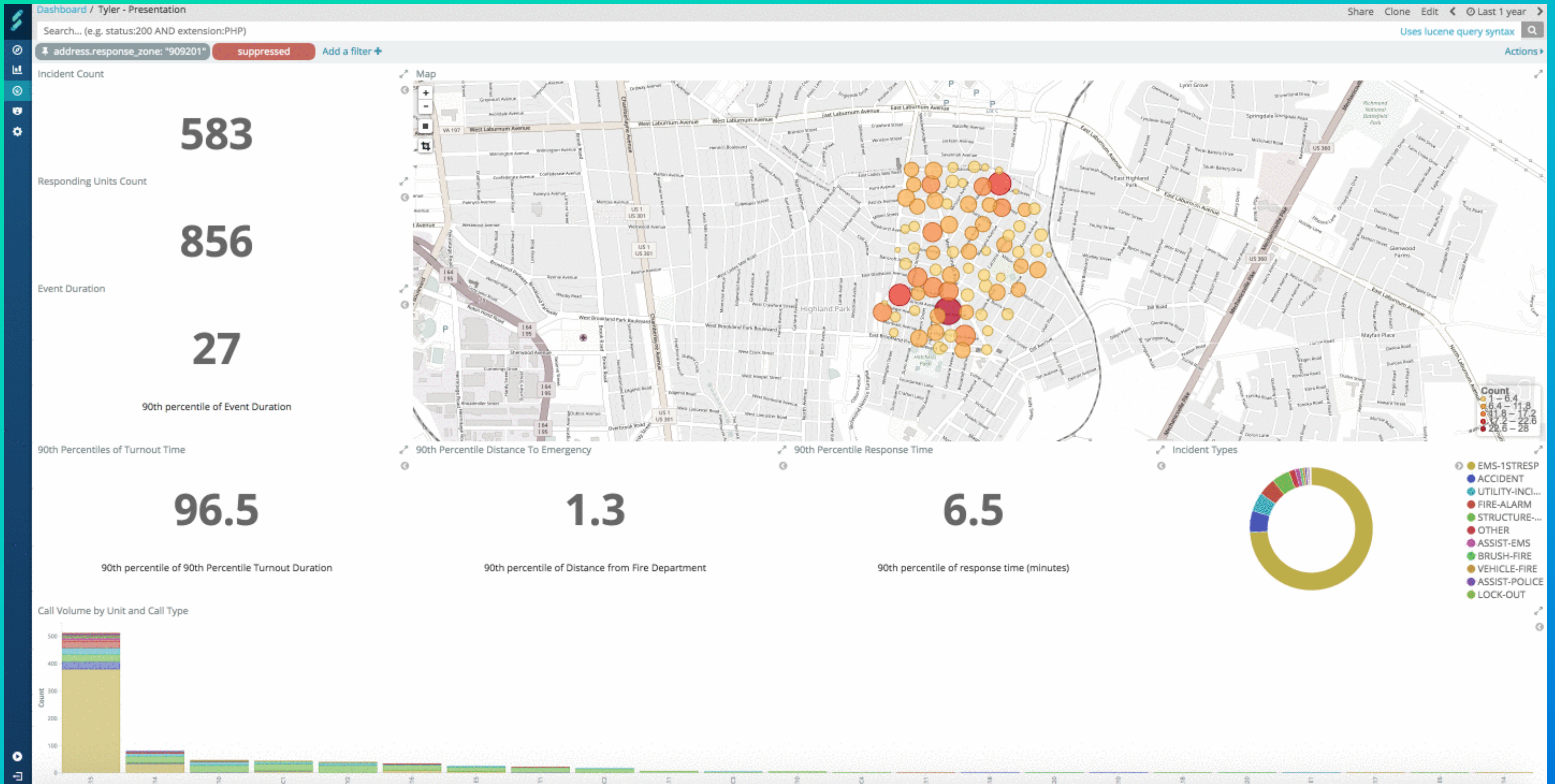


What response zones have highest demand?











## Box 909201 vs Response System

Call Type	Response System	Box 909201	Change
EMS	67%	74%	7%
Accident	10%	5%	5%
Fire Alarms	9%	5%	4%
Utility Incidents	3%	5%	2%

Metric	Response System	Box 909201	Change
Event Duration	30.7 min	27 min	3.7 min
Turn out Time	101.4 sec	96.5 sec	4.9 sec
Distance to Emergency	1.7 mi	1.3 mi	.4 mi
Response Time	7.1 min	6.5 min	0.6 min
Water on Fire	11 min	7.4 min	3.6 min
Command Established	11.8 min	8.4	3.4 min
Primary Search	14.6 minutes	22 min	7.4 min



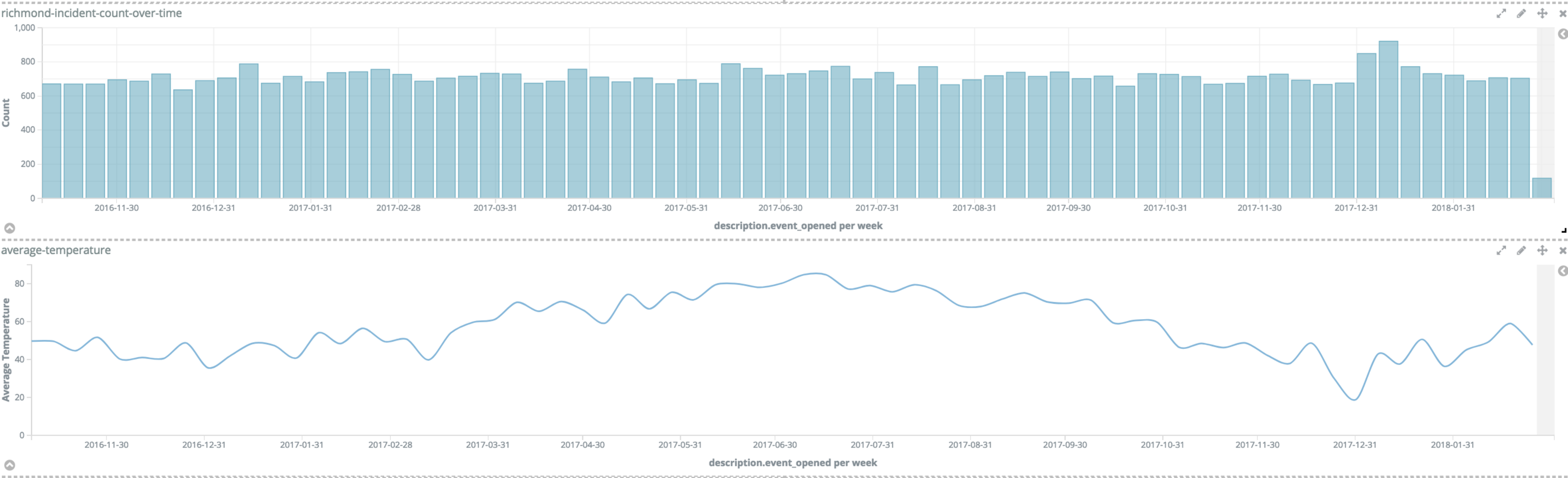


How does demand for our services change  
based on weather?





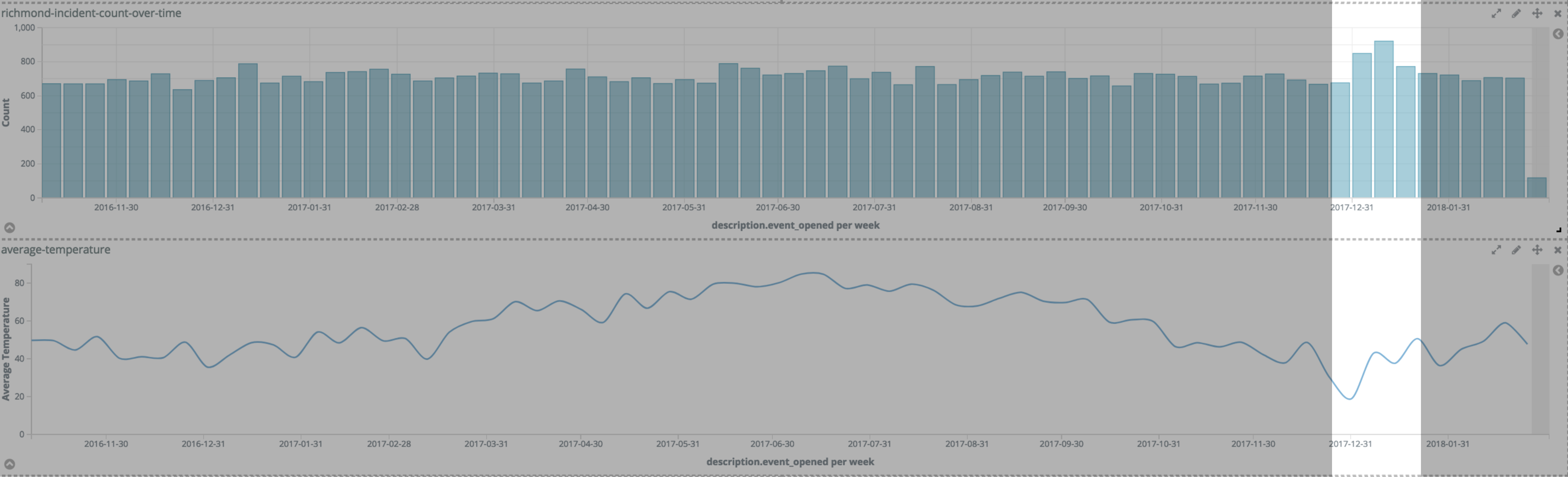
EMS	67%
Accident	10%
Fire Alarms	9%
Utility Incidents	3%







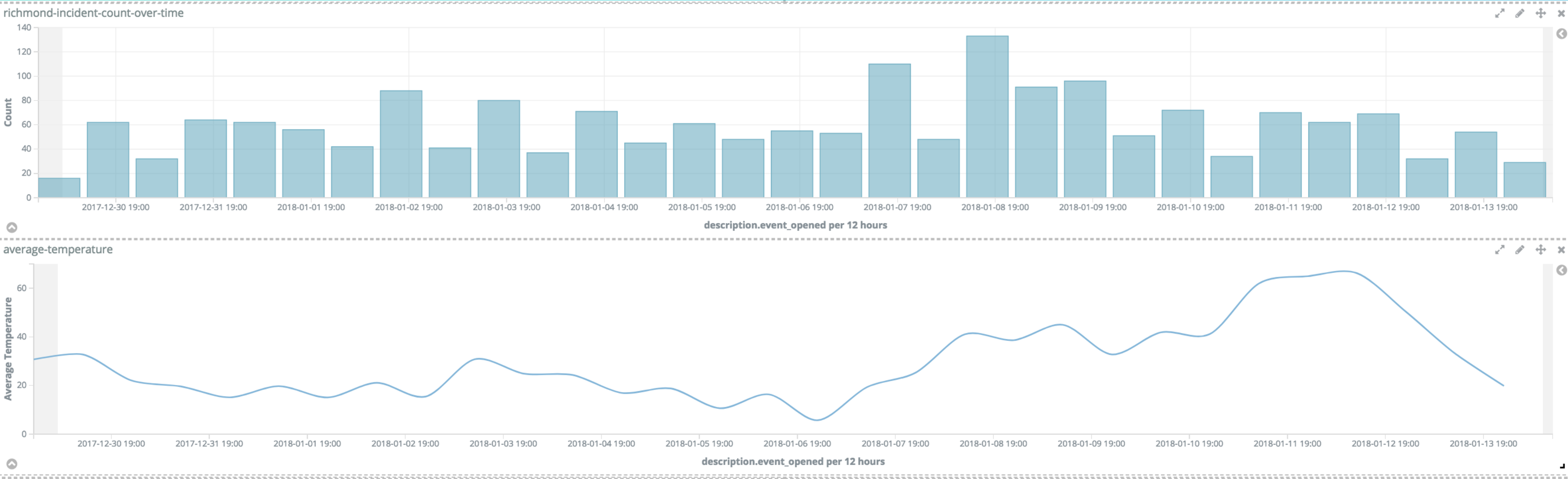
EMS	67%
Accident	10%
Fire Alarms	9%
Utility Incidents	3%







EMS	57%	10%
Fire Alarms	15%	6%
Utility Incidents	11%	8%
Accident	6%	4%





Suppression: Program Area												
Year	Risk Level	Incidents	Percentile rank 60 of "Dispatch"	90th percentile of Dispatch (Sec)	Percentile rank 60 of "NFPA Turnout"	Percentile rank 80 of "NFPA Turnout"	90th percentile of Fractile Turnout Sec	Percentile rank 2 of "NFPA Travel"	Percentile rank 4 of "NFPA Travel"	90th percentile of Fractile Travel Min	Percentile rank 6 of "NFPA Total Response"	Percentile rank 6.3 of "NFPA Total Response"
2018	Low	355	85.07%	66	40.282%	75.211%	96	4.633%	55.856%	6.3	63.063%	68.559%
2018	Moderate	33	55.682%	101.4	71.212%	94.061%	73.6	5.423%	63.636%	5.7	69.697%	76.323%
2019	Low	874	83.41%	70.9	43.548%	75.922%	98.1	5.4%	50.268%	7	54.757%	62.649%
2019	Moderate	86	52.326%	108.4	62.791%	88.14%	83.8	5.671%	51.373%	6.3	48.039%	57.314%



# Infinite Possibilities

Joe Chop

@jchop01

Richmond Fire and Emergency Services responded to 39 fire & 72 EMS incidents yesterday



@RFVDA

10:21 AM - 31 May 2018

A101

Last shift

Incident Types

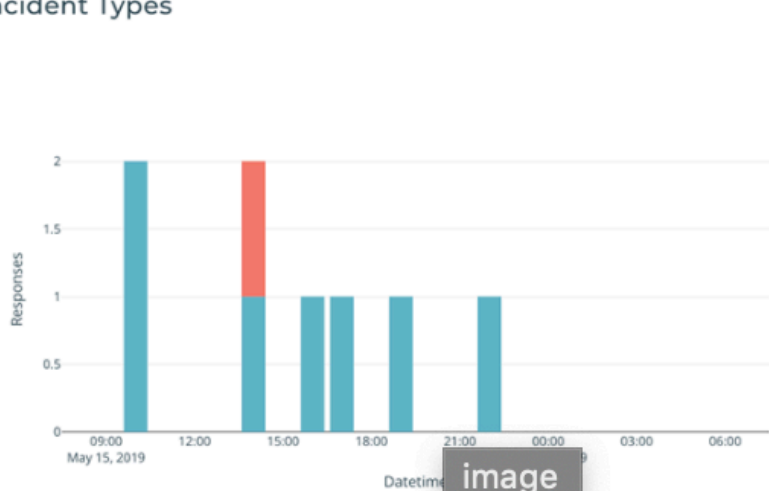
Travel

Turnout

Timeline

Incidents

Incident Types



RESPONSES

8

11% TYPICAL

SLOW

TYPICAL

BUSY

COMMITMENT

4h, 31m, 21s

9% TYPICAL

LOW

TYPICAL

HIGH

Low: 2h, 28m, 54s or less

Typical: 2h, 28m, 55s to 5h, 54m, 45s

High: 5h, 54m, 46s or more

INCIDENT TYPE

COUNT

EMS

7

FIRE

1

Travel Time

9m, 30s

34%

16th

BOB SMITH

NAVIGATION

Dashboard

My Career Diary

Incidents

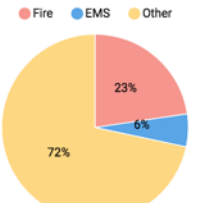
Support Center

205

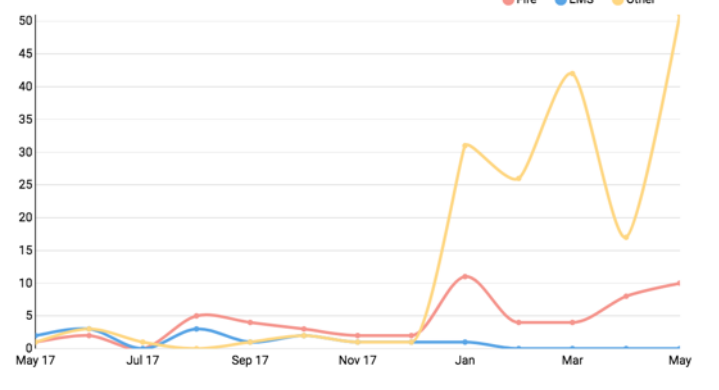
INCIDENTS THIS YEAR

61

INCIDENTS THIS MONTH



INCIDENTS BY TYPE



Health Profile

My Exposures

248

TOTAL INCIDENTS

81

TOTAL EXPOSURES

0.33

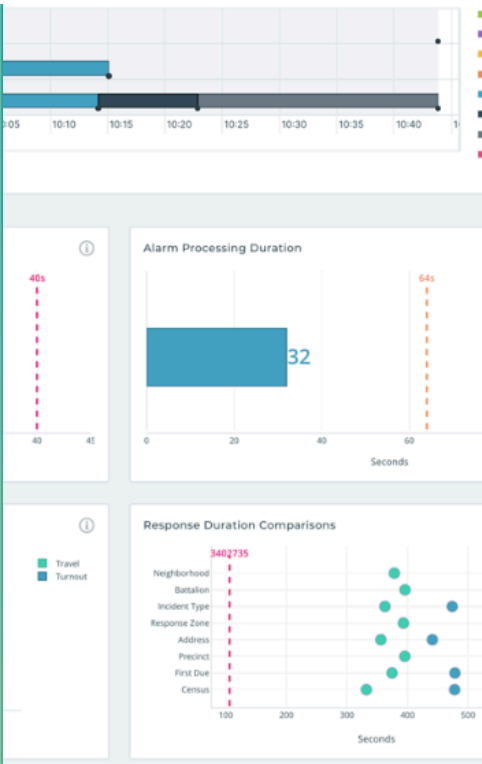
EXPOSURE RATIO

POSURE RATING

Low

Medium

High



ORLAND FIRE PROTECTION DIST.

WED, JUN 20TH

12:47

SHIFT GOLD

Orland Park IL

Overcast

67° F

↑74° ↓62°

Thursday 77° 62°

Friday 70° 60°

Saturday 77° 60°

UNIT UTILIZATION

E89

In Service

Unit Hour Utilization

37%

BUSY

Total Responses

5

Avg. Turnout Time

2m, 6s

E88

In Service

Unit Hour Utilization

5%

SLOW

Total Responses

2

Avg. Turnout Time

1m, 53s

T89

In Service

Unit Hour Utilization

22%

BUSY

Total Responses

4

Avg. Turnout Time

3m, 1s

R89

In Service

Unit Hour Utilization

37%

BUSY

Total Responses

5

Avg. Turnout Time

2m, 6s

BC89

In Service

Unit Hour Utilization

12%

TYPICAL

Total Responses

3

Avg. Turnout Time

3m, 1s

BC88

In Service

Unit Hour Utilization

12%

TYPICAL

Total Responses

3

Avg. Turnout Time

2m, 6s

R88

Out of Service

Unit Hour Utilization

N/A

Total Responses

N/A

Avg. Turnout Time

N/A

TANK89

Out of Service

Unit Hour Utilization

N/A

Total Responses

N/A

Avg. Turnout Time

N/A

BC86

Out of Service

Unit Hour Utilization


N/A

Total Responses

N/A

Avg. Turnout Time

N/A



Rogers Fire Department Daily Report

May 30, 2018 7:00 AM - May 31, 2018 7:00 AM

As of May 31, 2018 7:05 AM

Control Center

Note: Metrics below may differ slightly from what you see on your dashboard

Incident Summary

Metric	Value
Platoon	A
Total Incidents	23
EMS Incidents	20
Fire Incidents	3
Total Responses	34
Six Minute Response Percentage	91.48
90% Turnout Time (sec)	94.00
90% Event Duration (min)	54.90

Unit Summary

Unit	Incidents	Transports	Utilization (min)	90% Turnout (sec)
Med5	5	3	196.77	79.60
Med1	7	5	196.70	107.80
E4	5	0	87.88	82.60
Med4	4	1	82.02	34.50
Med2	3	1	66.45	66.20
E2	2	0	52.77	87.40
L1	4	0	43.37	58.50
L5	1	0	17.55	57.00
E6	1	0	15.85	73.00
Med7	1	0	12.73	51.00
E3	1	0	7.87	91.00

Incident Type Summary

Incident Type	Count
F Assist with Lifting	1
F Child/Pet/Meds in Vehicle	1
F Electrical Line Problem	1
F MVA w/Injury	3
F Med Emer Pri 1	5
F Med Emer Pri2	12

Feedback? Please email us at [contact@statengine.io](mailto:contact@statengine.io)

StatEngine | 2019 PSCR Stakeholder Meeting





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Prominent Edge

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@garnerb





statengine



**#PSCR2019**

Come back for the  
**Next  
Session**  
**3:15 PM**