



PSCR Stakeholder Meeting | July 2019

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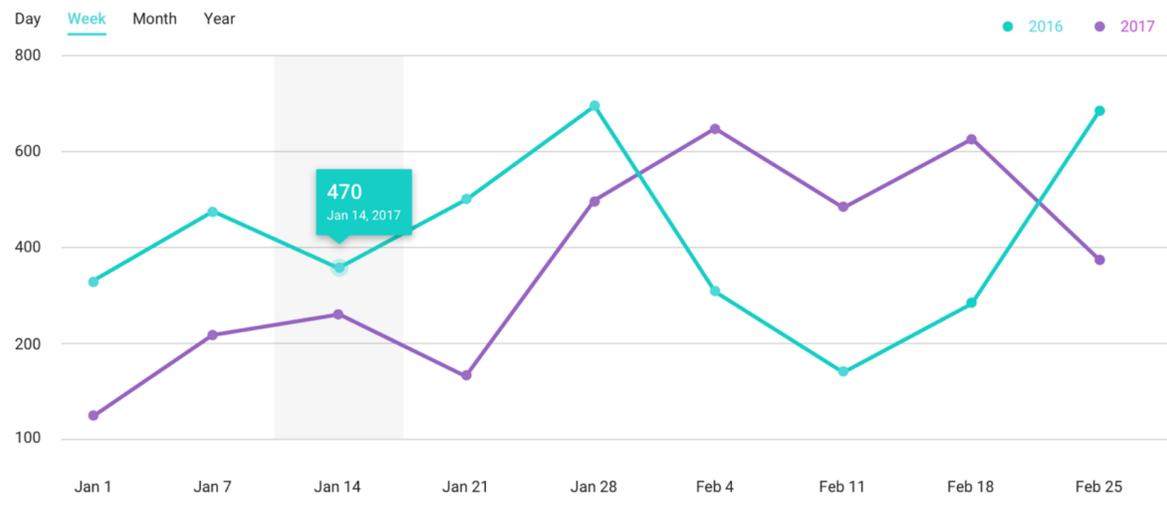
Background

- 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

Call Volume by Department



Units ▼

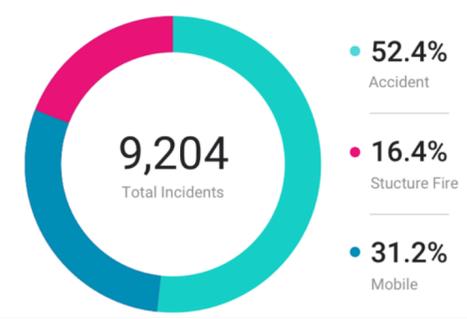
120,495
Confirmed

22.5%
Water on Fire

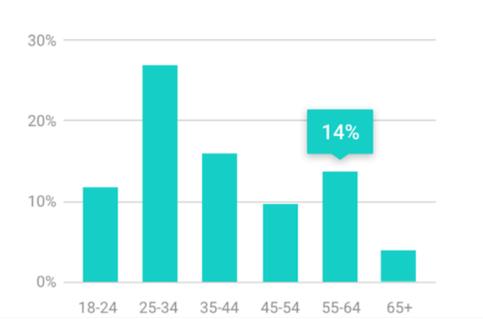
04:39
Average Time

[VIEW REPORTS](#)

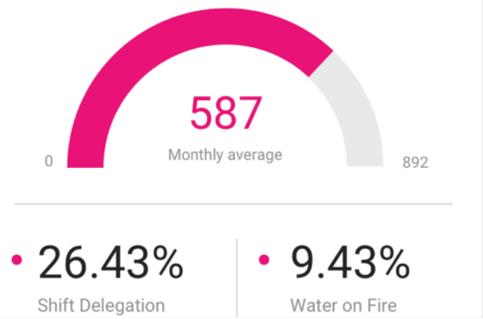
Incident Types



Response Time



Incident Count

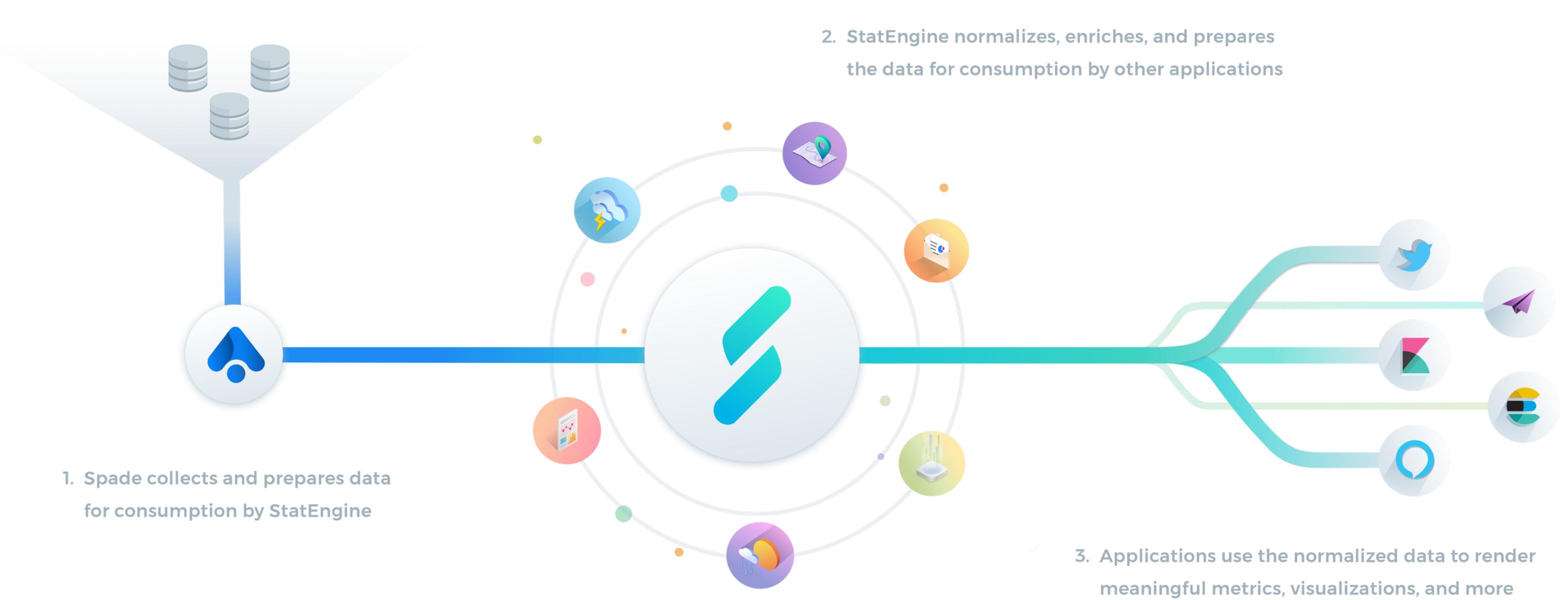


A real-time, open source, data analytics and visualization platform for public safety organizations.

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 PSO's then iterate

3,950,847

Incidents analyzed

Departments have loaded over h3 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

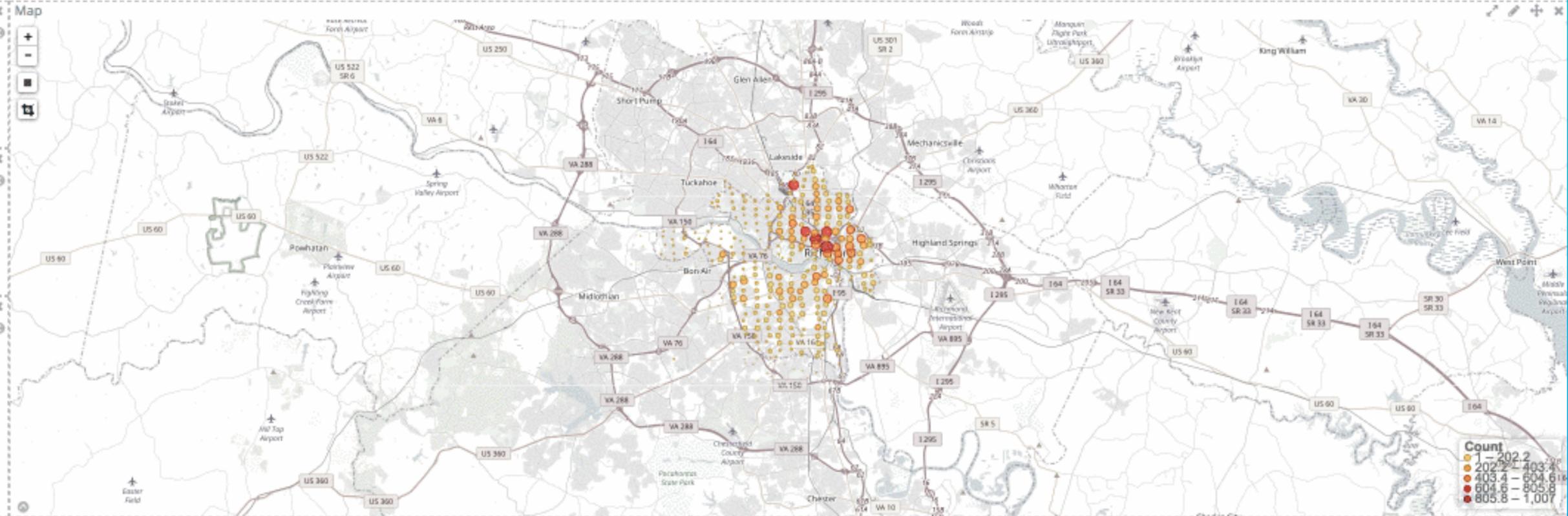
30.6

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

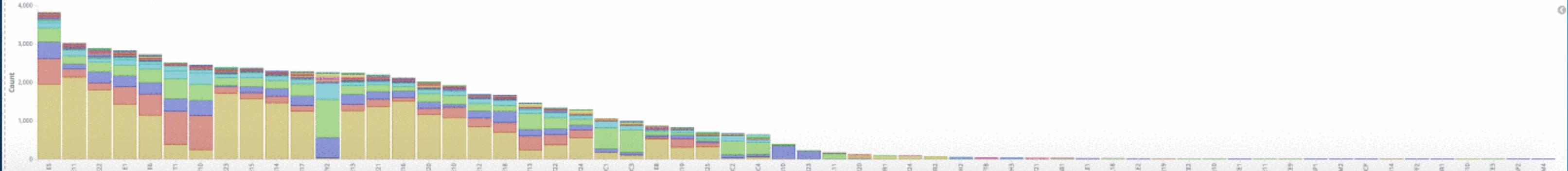
90th percentile of response time (minutes)

Incident Types



- EMS-1STRESP
- ACCIDENT
- FIRE-ALARM
- UTILITY-INCI...
- STRUCTURE-...
- TRASH-FIRE
- ASSIST-EMS
- BRUSH-FIRE
- VEHICLE-FIRE
- HAZMAT
- OTHER

Call Volume by Unit and Call Type





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

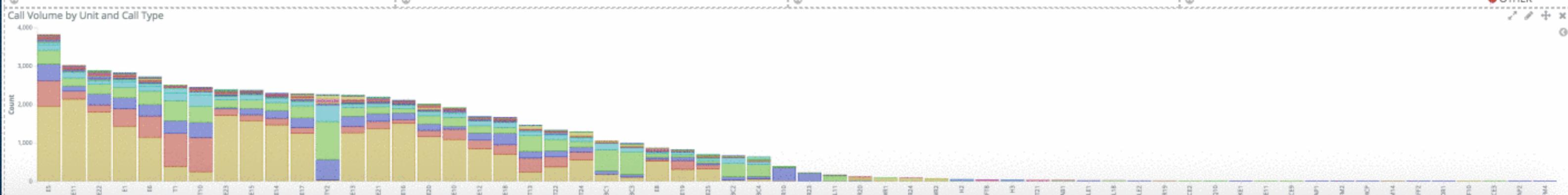
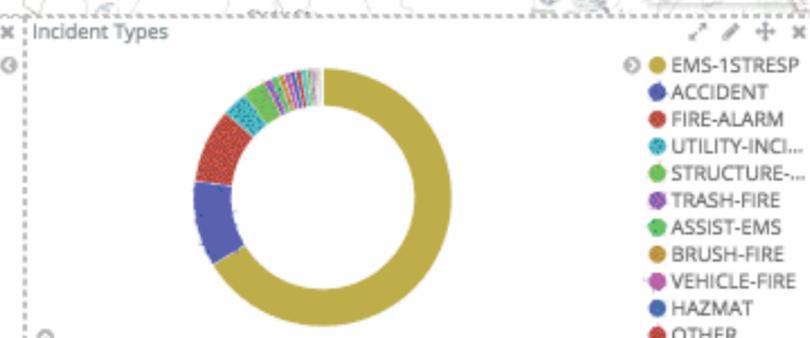
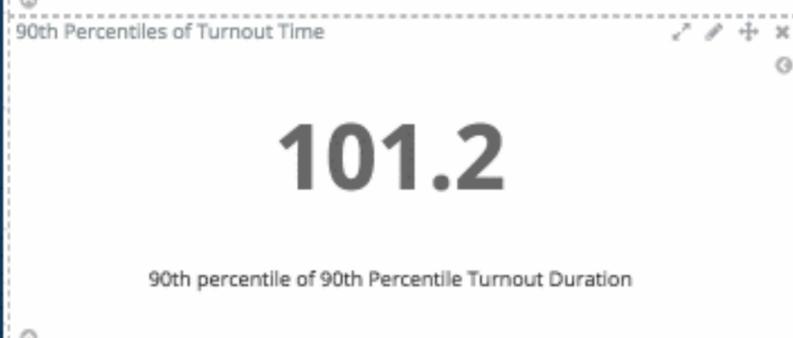
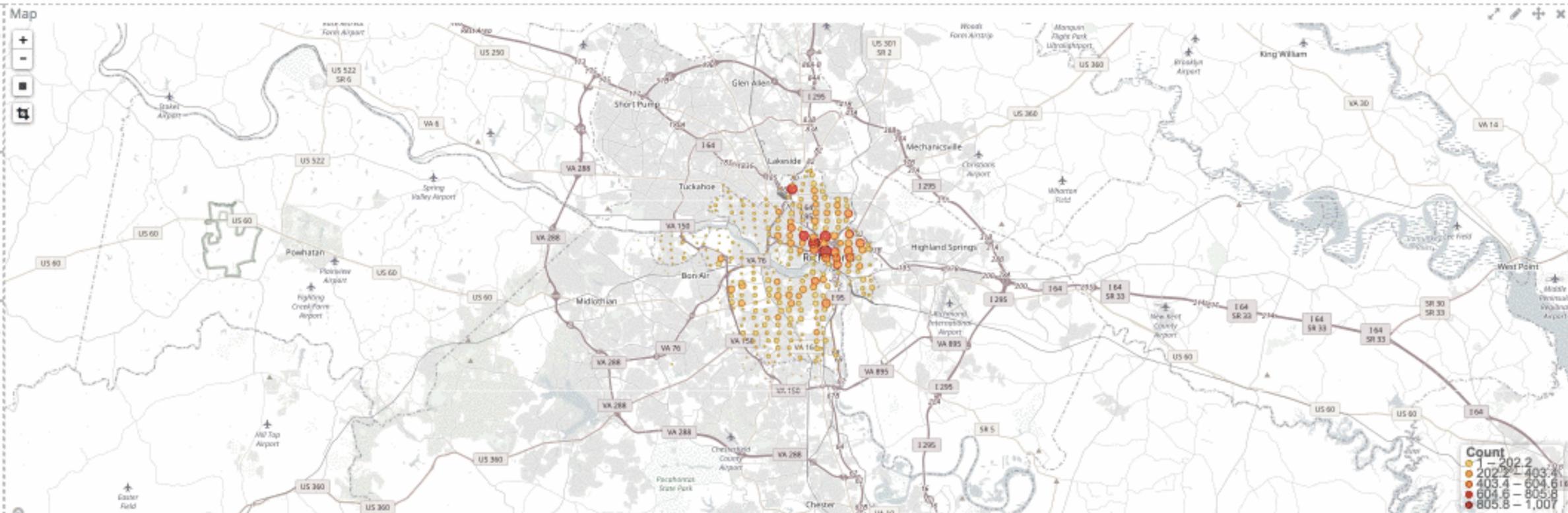
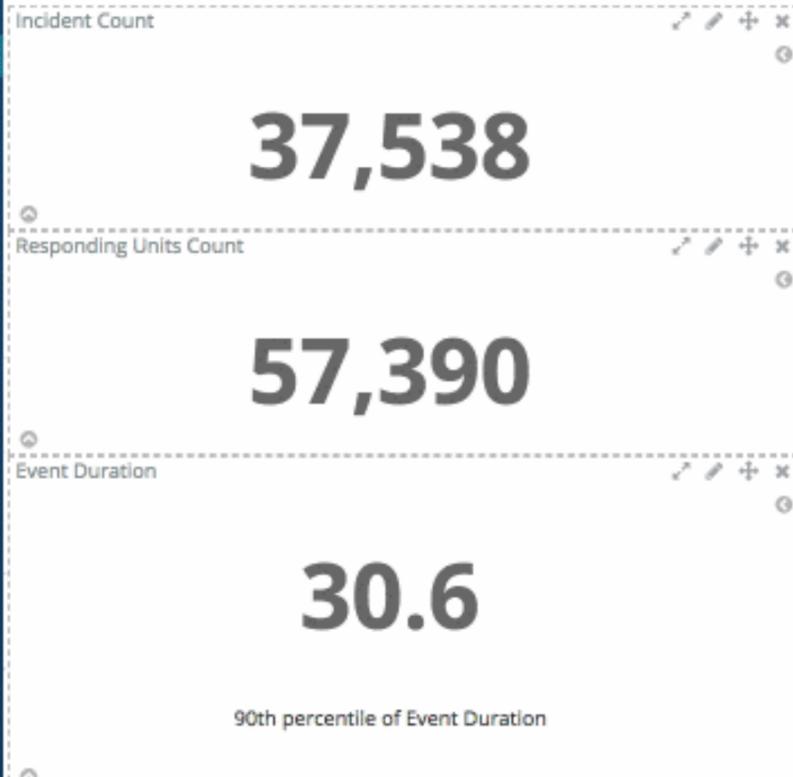
...In council district #1?

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

Uses lucene query syntax

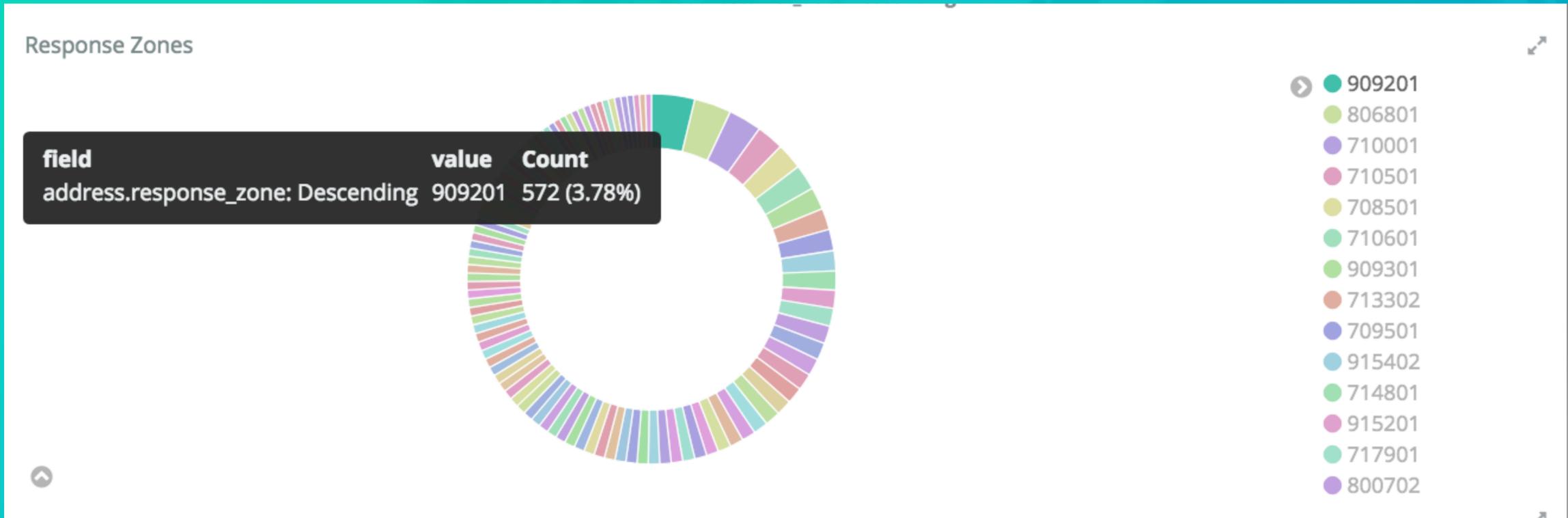
suppressed Add a filter +

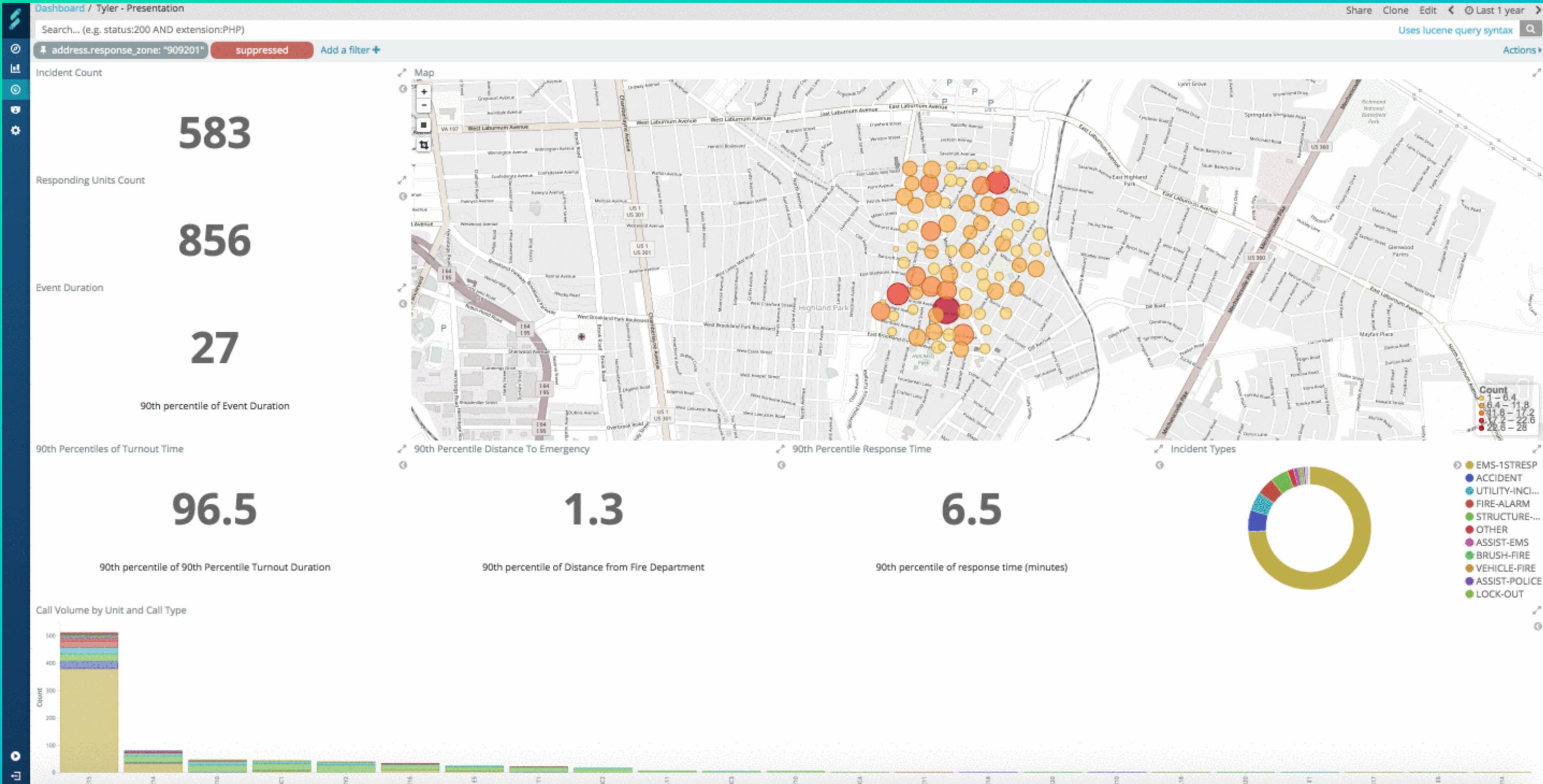
Actions





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%

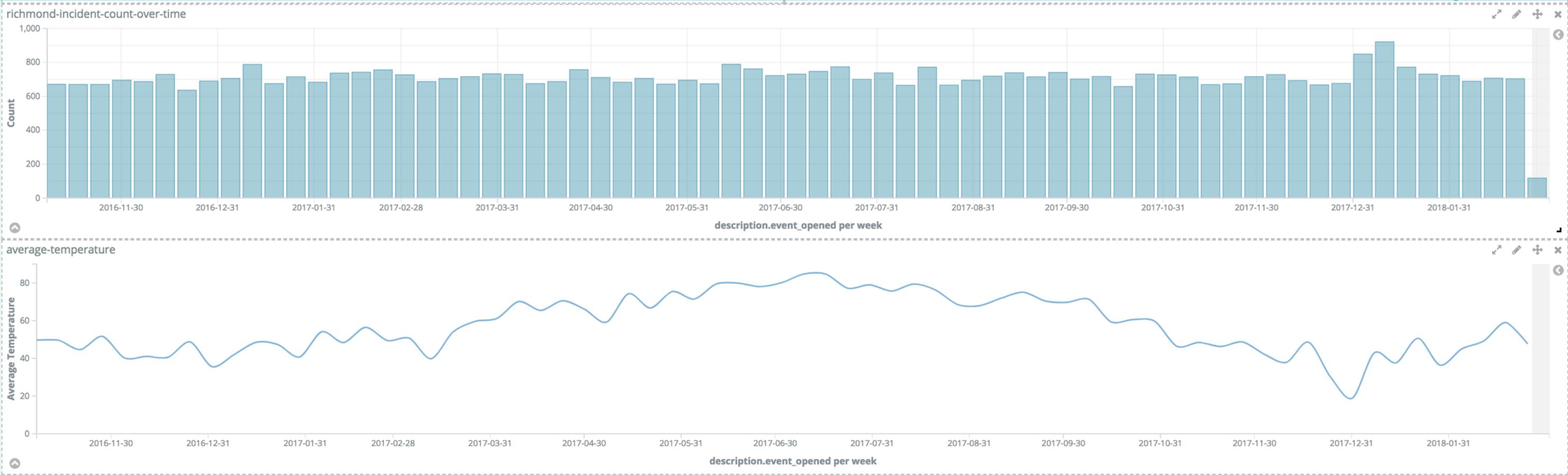
Metric	Response System	Box 909201	Change
Event Duration	30.7 min	27 min	3.7 min
Turn out Time	101.4 sec	96.5 sec	4.9 sec
Distance to Emergency	1.7 mi	1.3 mi	.4 mi
Response Time	7.1 min	6.5 min	0.6 min
Water on Fire	11 min	7.4 min	3.6 min
Command Established	11.8 min	8.4	3.4 min
Primary Search	14.6 minutes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

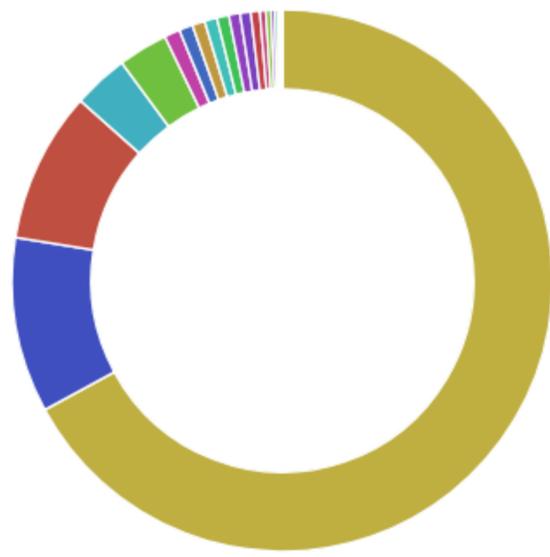


How does demand for our services change
based on weather?



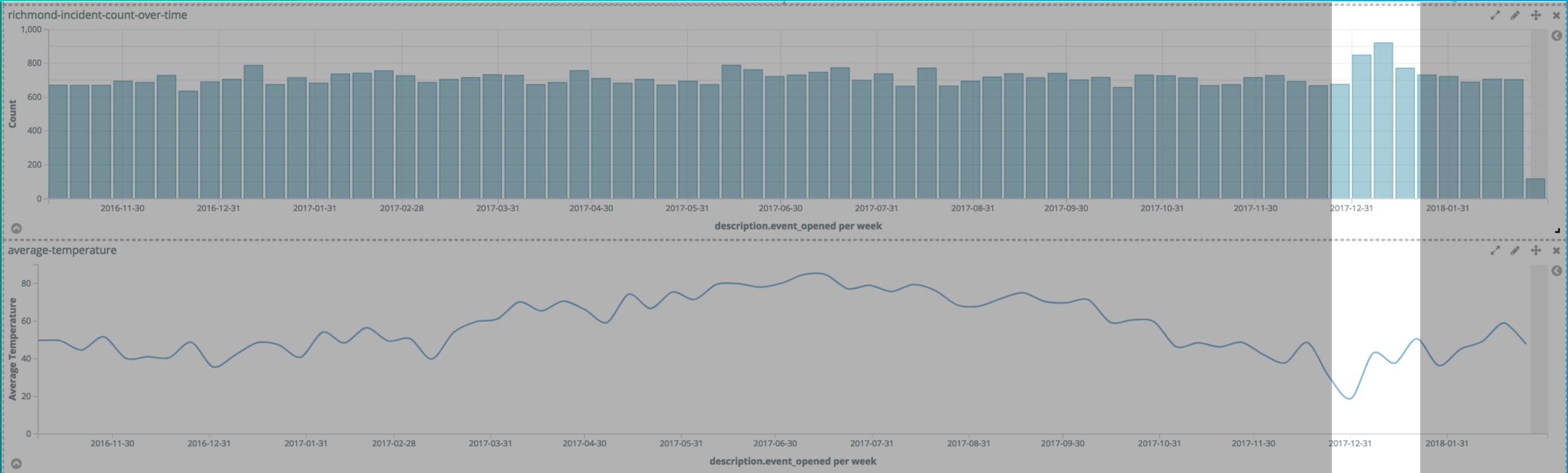
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Accident	10%
Fire Alarms	9%
Utility Incidents	3%





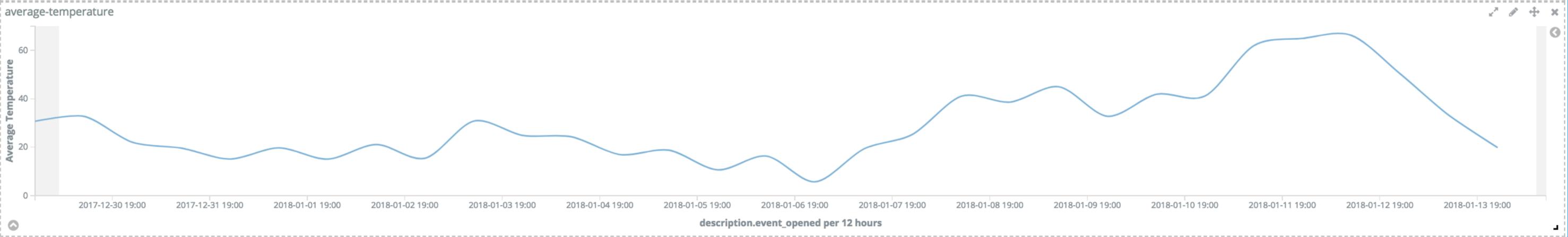
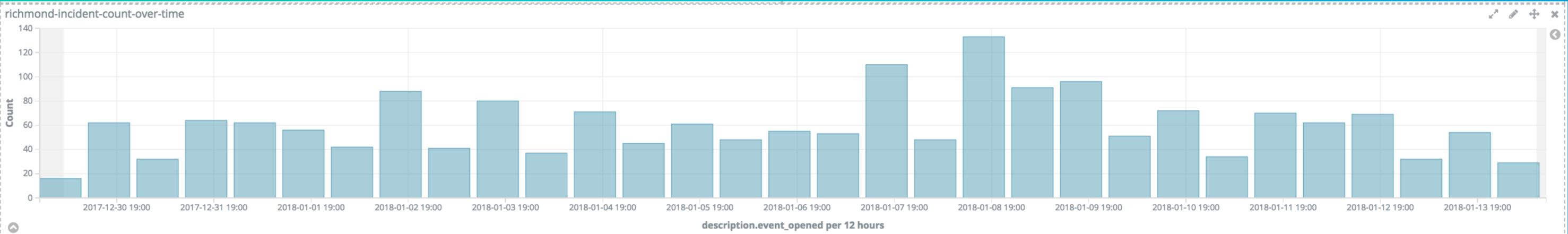
- ▶ EMS-1STRESP
- ▶ ACCIDENT
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- ▶ TRASH-FIRE
- ▶ VEHICLE-FIRE
- ▶ ASSIST-EMS
- ▶ BRUSH-FIRE
- ▶ HAZMAT
- ▶ OTHER
- ▶ ELEVATOR
- ▶ LOCK-OUT
- ▶ ASSIST-POLICE

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



10:21 AM - 31 May 2018

INFORS

My Incidents

205 INCIDENTS THIS YEAR | 61 INCIDENTS THIS MONTH

INCIDENTS BY TYPE: Fire (23%), EMS (72%), Other (6%)

My Exposures: 248 TOTAL INCIDENTS, 81 TOTAL EXPOSURES, 0.33 EXPOSURE RATIO

POSSURE RATING: Low

Overview

Station 2 was assigned first due. A102 was dispatched 48 seconds after the call was received. A102 was the first to arrive, 1 minute, 46 seconds after initial dispatch.

CALL ANSWERED IN: 16 s | FIRST UNIT DISPATCHED: 32 s | FIRST UNIT ON SCENE: 1 m, 46 s

Events Timeline

Alarm Processing Duration: 32s

Response Duration Comparisons

A101

Last shift

Incident Types

Incident Types: FIRE, EMS

RESPONSES: 8 (11% TYPICAL)

COMMITMENT: 4h, 31m, 21s (53% TYPICAL)

INCIDENT TYPE	COUNT
EMS	7
FIRE	1

Travel Time: 9m, 30s (+34%) | 16th

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

Unit	Status	Unit Hour Utilization	Total Responses	Avg. Turnout Time
E89	In Service	37% (BUSY)	5	2m, 6s
E88	In Service	5% (SLOW)	2	1m, 53s
T89	In Service	22% (BUSY)	4	3m, 1s
R89	In Service	37% (BUSY)	5	2m, 6s
BC89	In Service	12% (TYPICAL)	3	3m, 1s
BC88	In Service	12% (TYPICAL)	3	2m, 6s
R88	Out of Service	N/A	N/A	N/A
TANK89	Out of Service	N/A	N/A	N/A
BC86	Out of Service	N/A	N/A	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		Value
Metric	Platoon	
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		Count
Incident Type		
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



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#PSCR2019

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