MESA FIRE & MEDICAL

Demand for Services
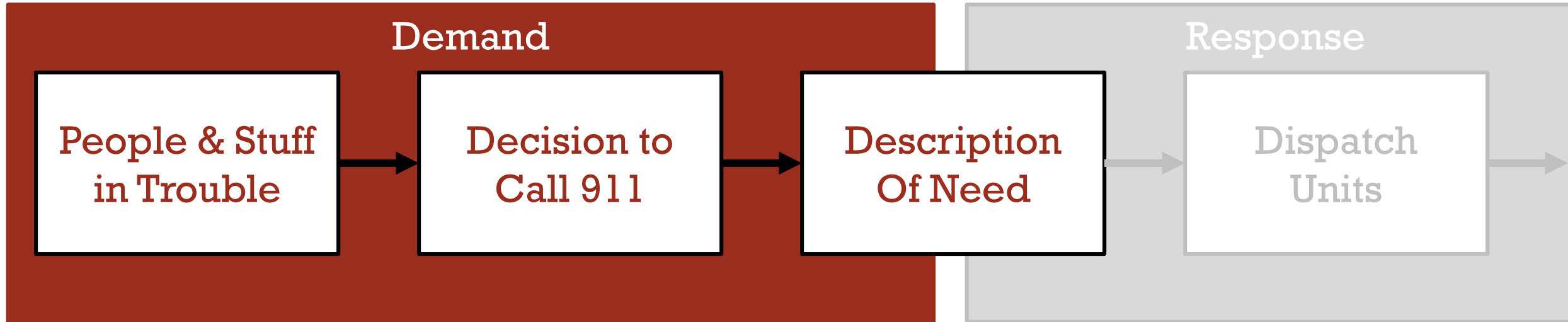
Presented by:

Candace Cannistraro
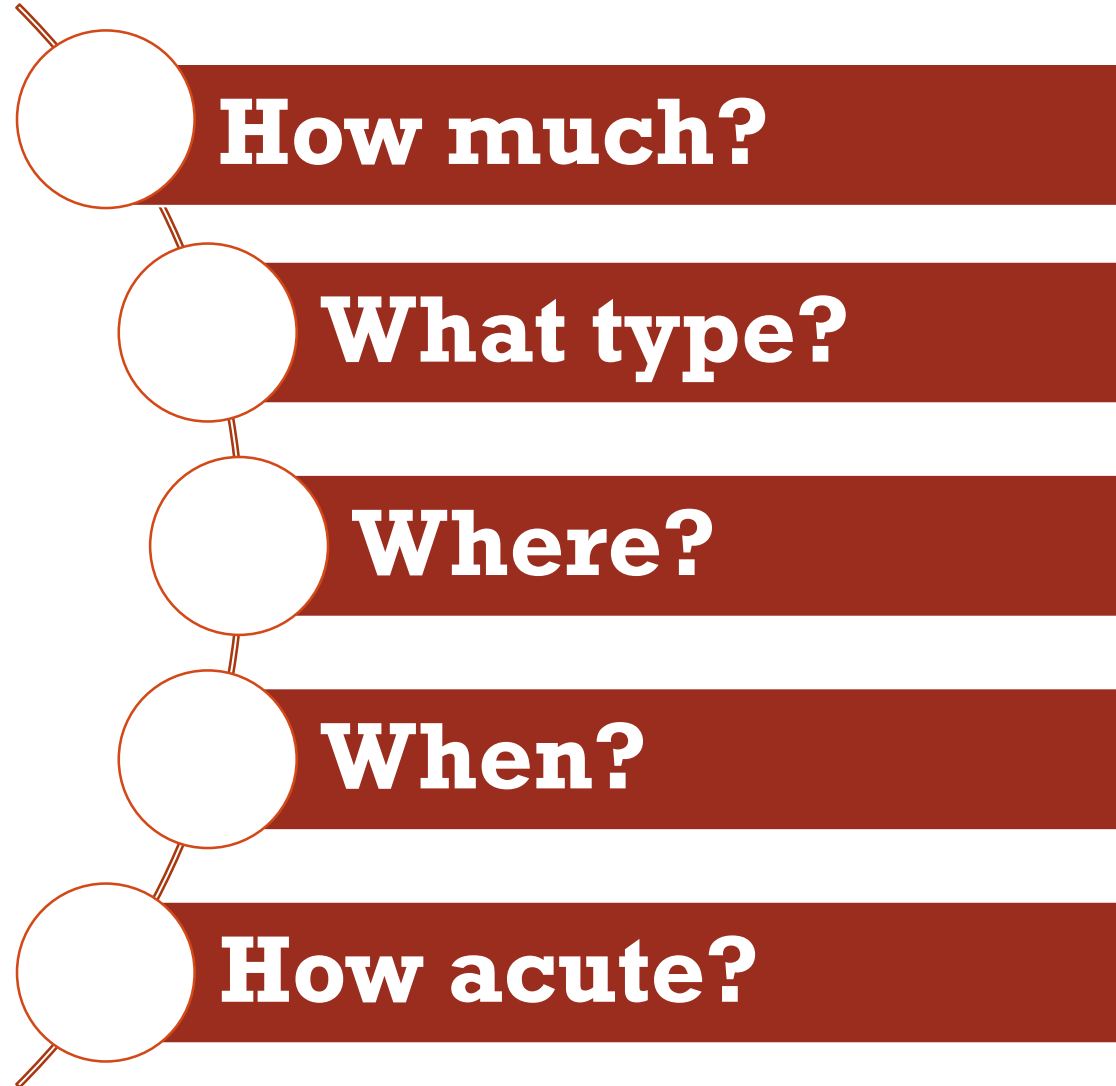
Mark Castleton

ShaLae Steadman

MFMD Sequence of Events
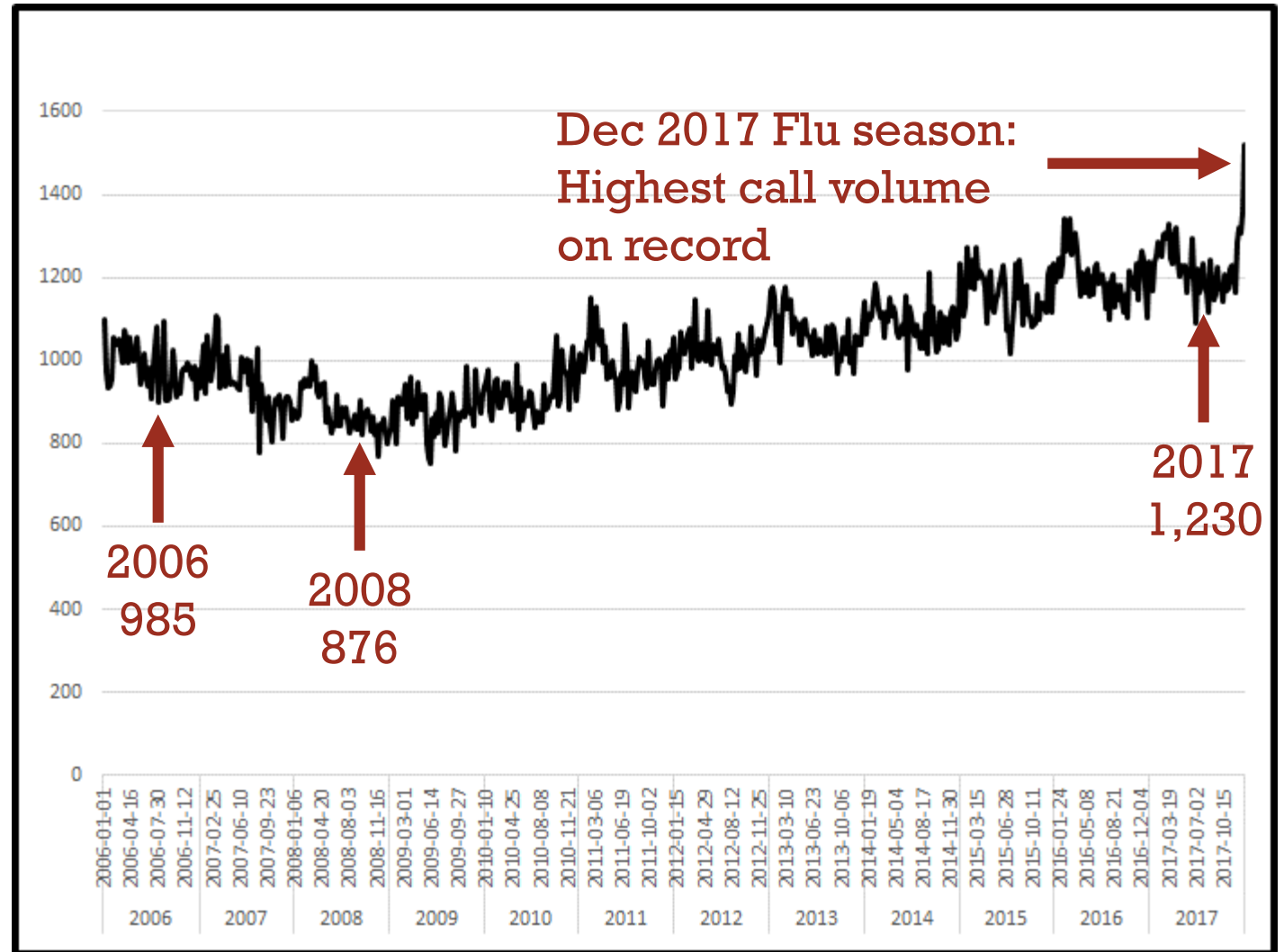

Demand

People & Stuff in Trouble → Decision to Call 911 → Description Of Need

Response

Dispatch Units

Demand: 5 Facets

- How much?
- What type?
- Where?
- When?
- How acute?

12 Year History Of Demand

- Weekly incidents

Dec 2017 Flu season: Highest call volume on record

2017
1,230

2006
985

2008
876

12 Year History Of Demand

- Weekly incidents

- Total incidents
  - 2006-17: ↑25%

↑**25%**

2006
985

2017
1,230

12 Year History Of Demand

- Weekly incidents

- Total incidents
  - 2006-17: ↑25%
  - 2008-17: ↑40%

5 Types Of Demand

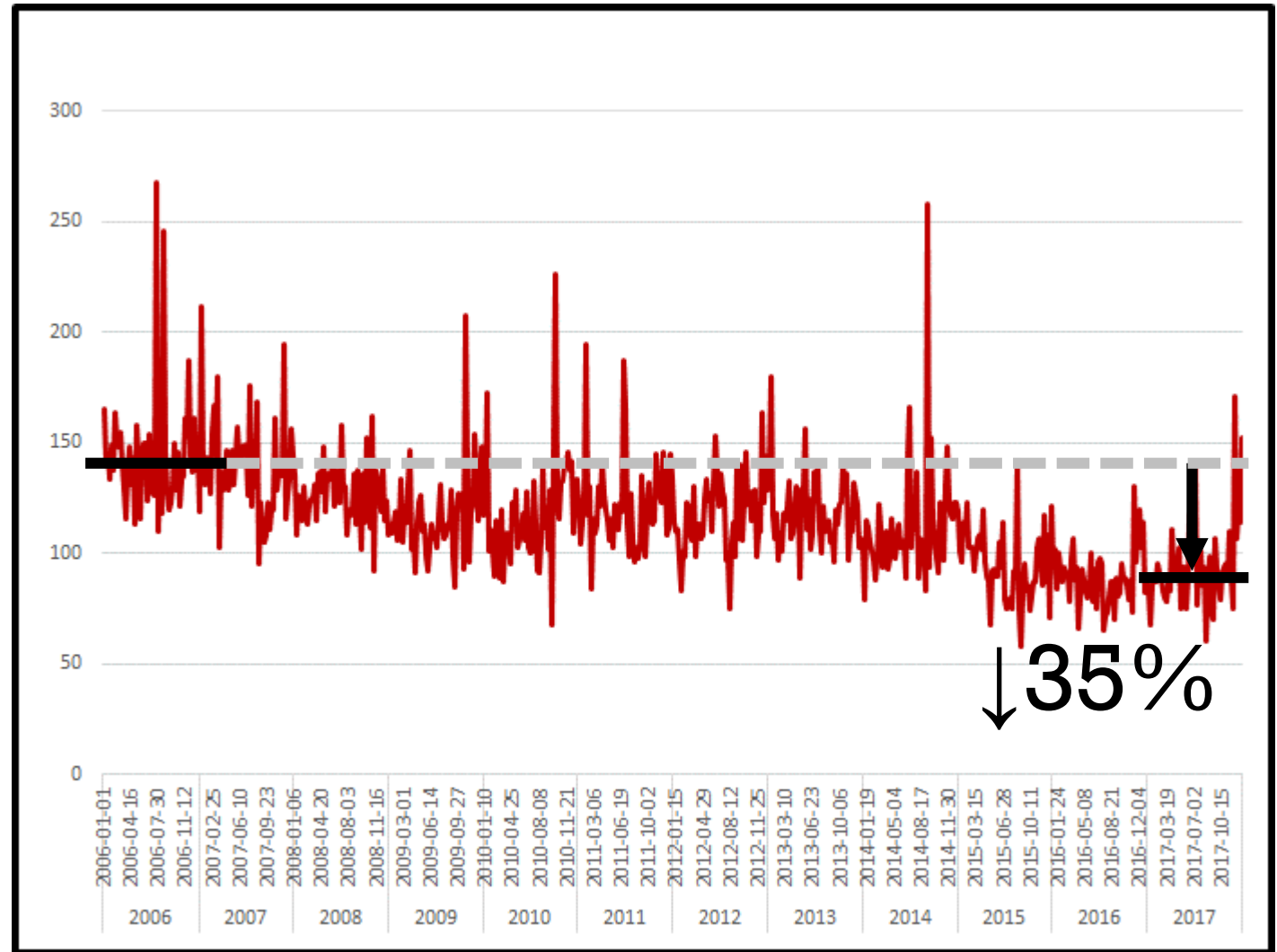| Fire	Medical	Special Operations	Service Calls	Medical-Secondary
House Field Pole Shed Dumpster	Fall Stroke Drowning Chest Pain Car accident	Airport Technical HazMat Extrication	Odor Alarm Bees	Community Medical Calls

How much?   ~   What?   ~   Where?   ~   When?   ~   Acuity?

Fire Incidents Are Declining

- 12 year history
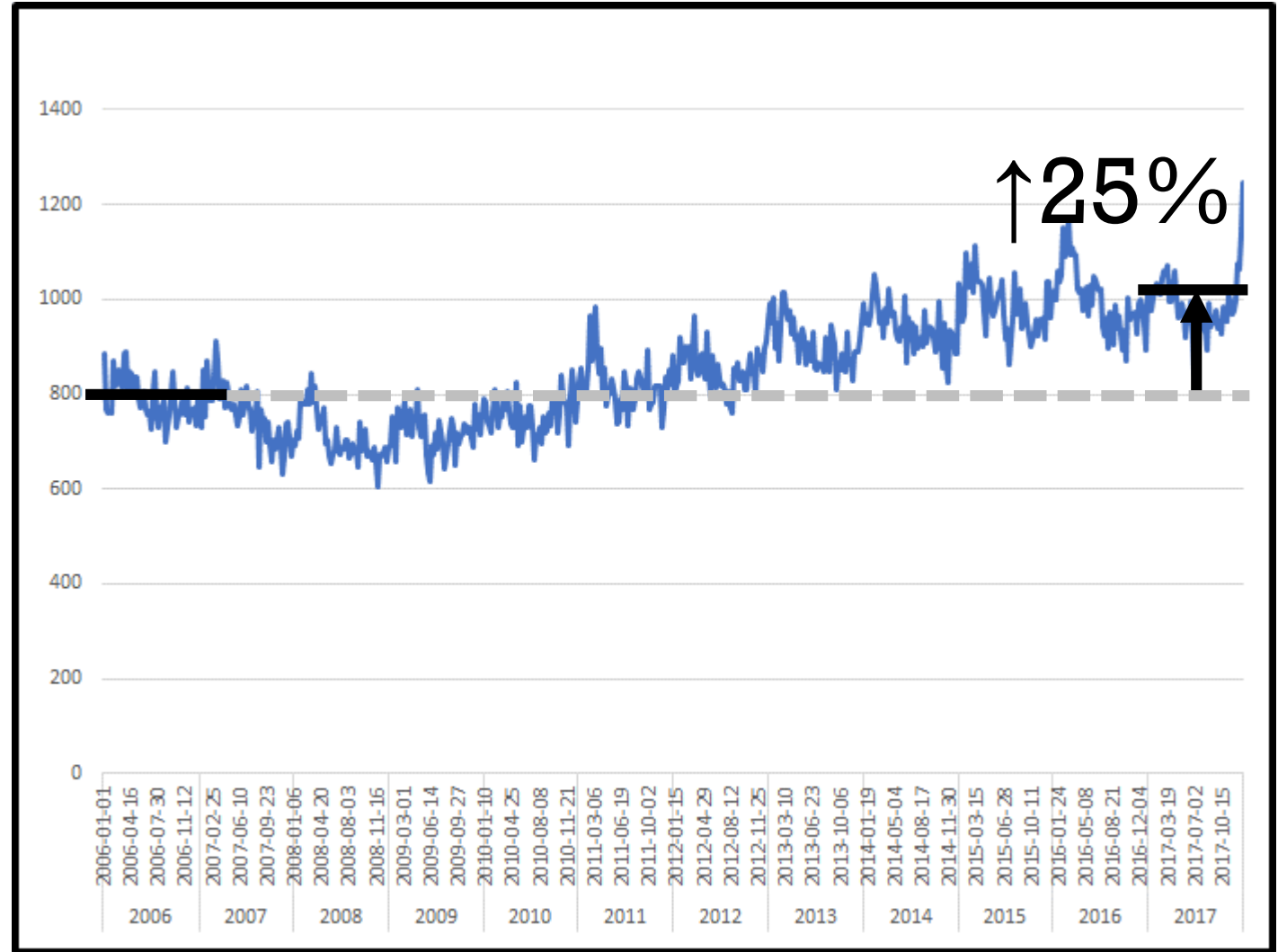- Weekly incidents

- **Fire calls**
  - **2006-17: ↓35%**

↓35%

Medical Incidents Are Increasing

- 12 year history
- Weekly incidents

- Medical calls
  - 2006-17: ↑25%

↑25%

Medical Incidents Are Increasing

- 12 year history
- Weekly incidents

- Medical calls
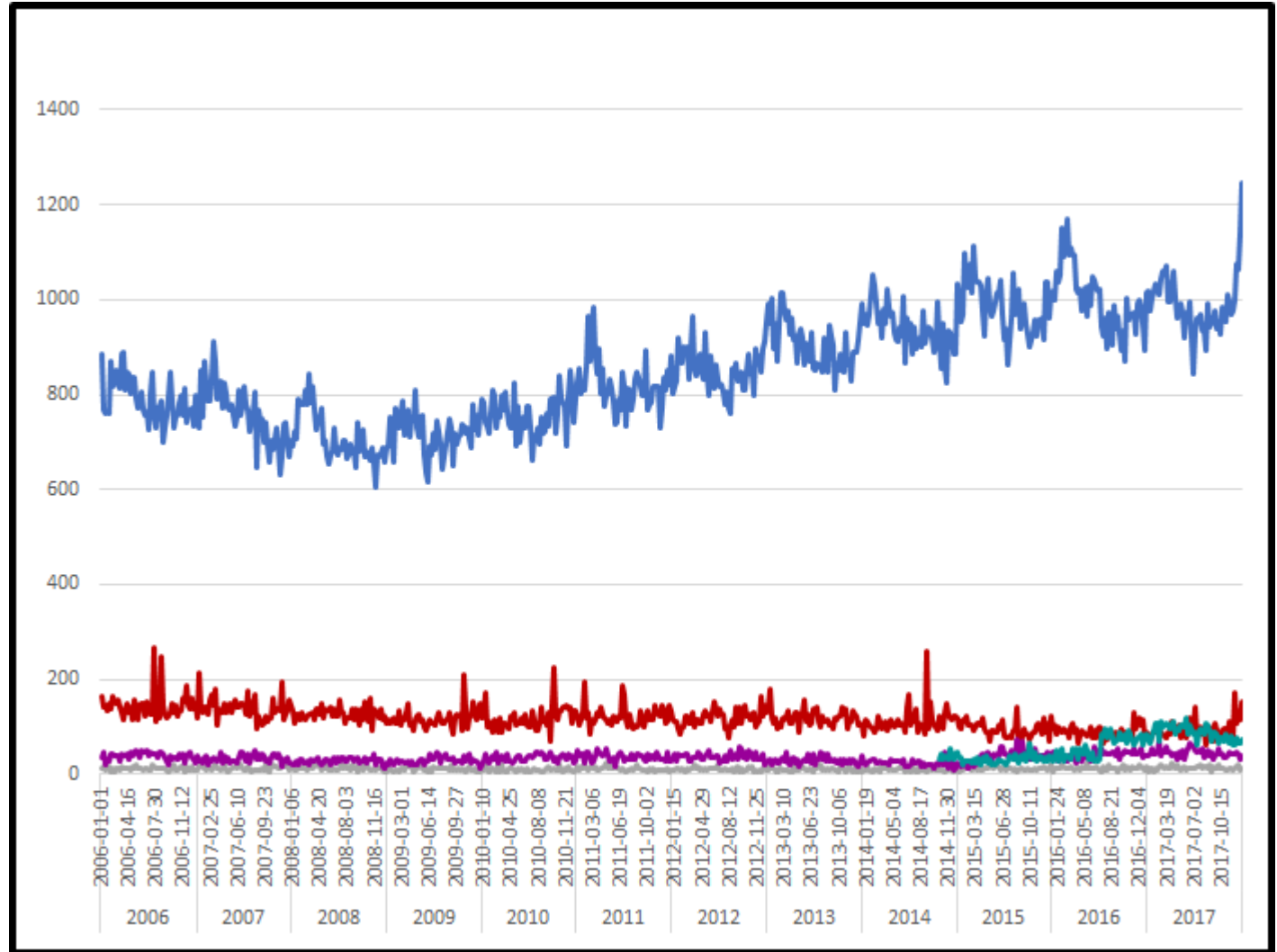 - 2006-17: ↑25%
  - 2008-17: ↑40%

↑40%

Medical vs Fire Incidents

- 12 year history
- Weekly incidents

- Medical : Fire calls
  - 2006   5.5 : 1.0
  - 2008   5.6 : 1.0
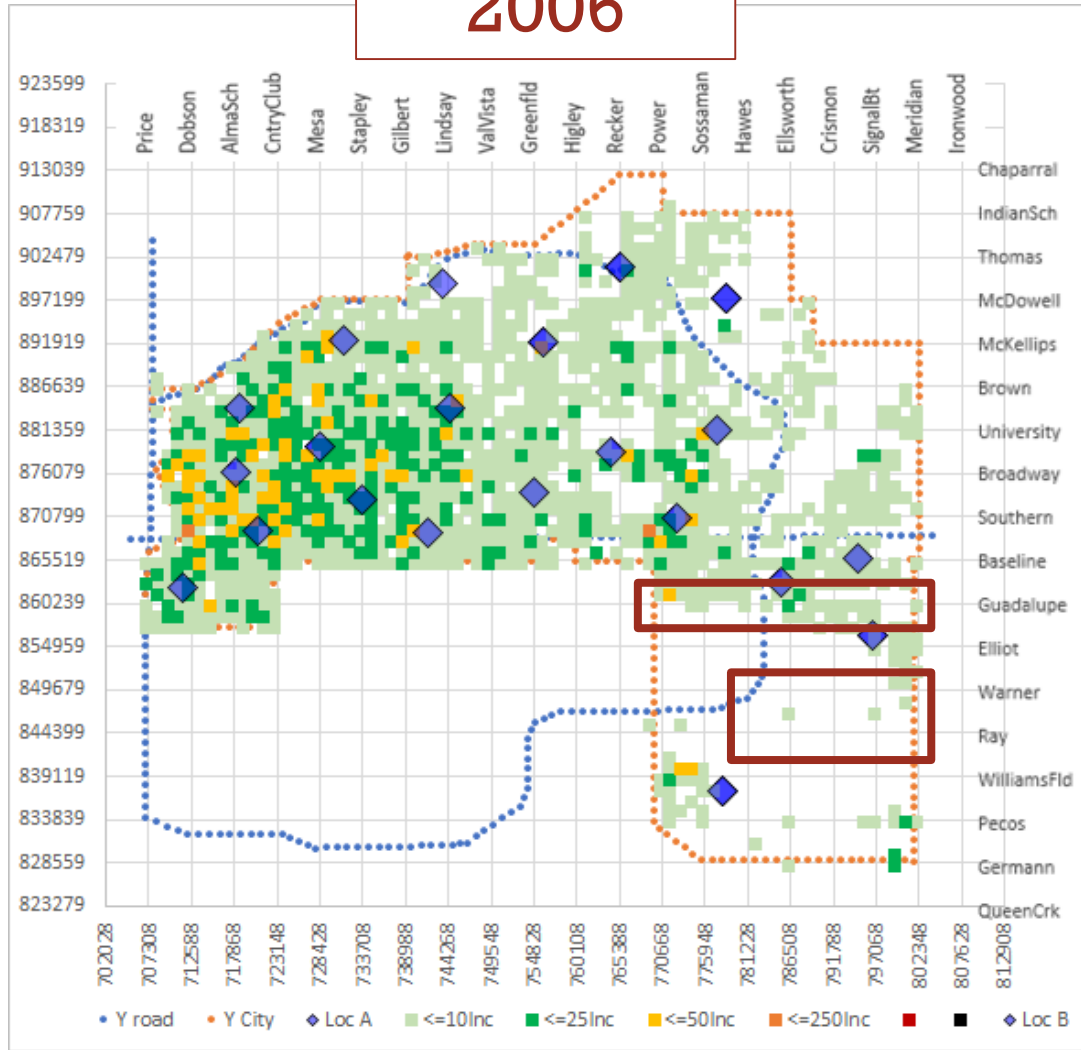 - 2017 10.6 : 1.0

Incident Type History & Comparison

- 12 year history
- Weekly incidents

- Medical
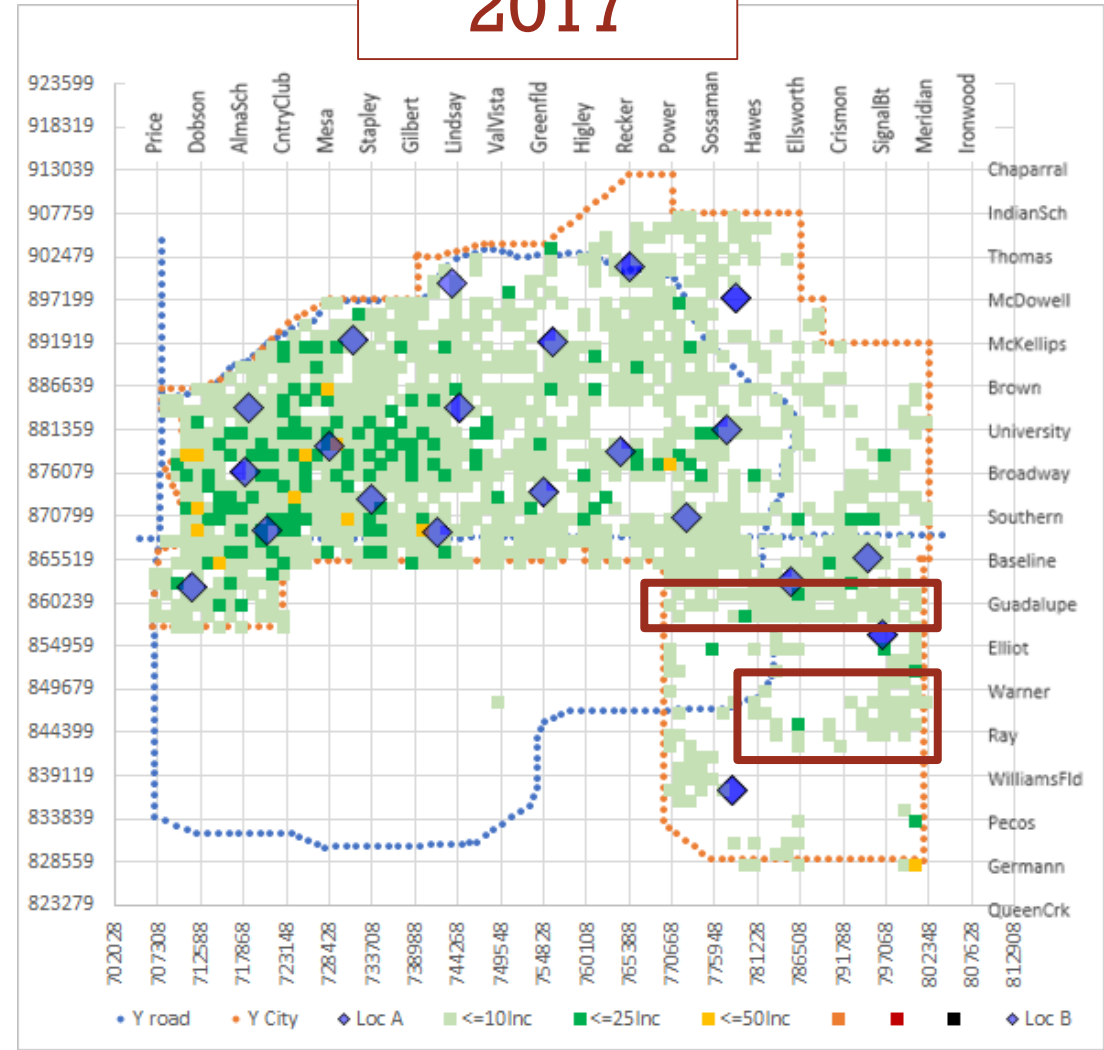- Fire
- Special Operations
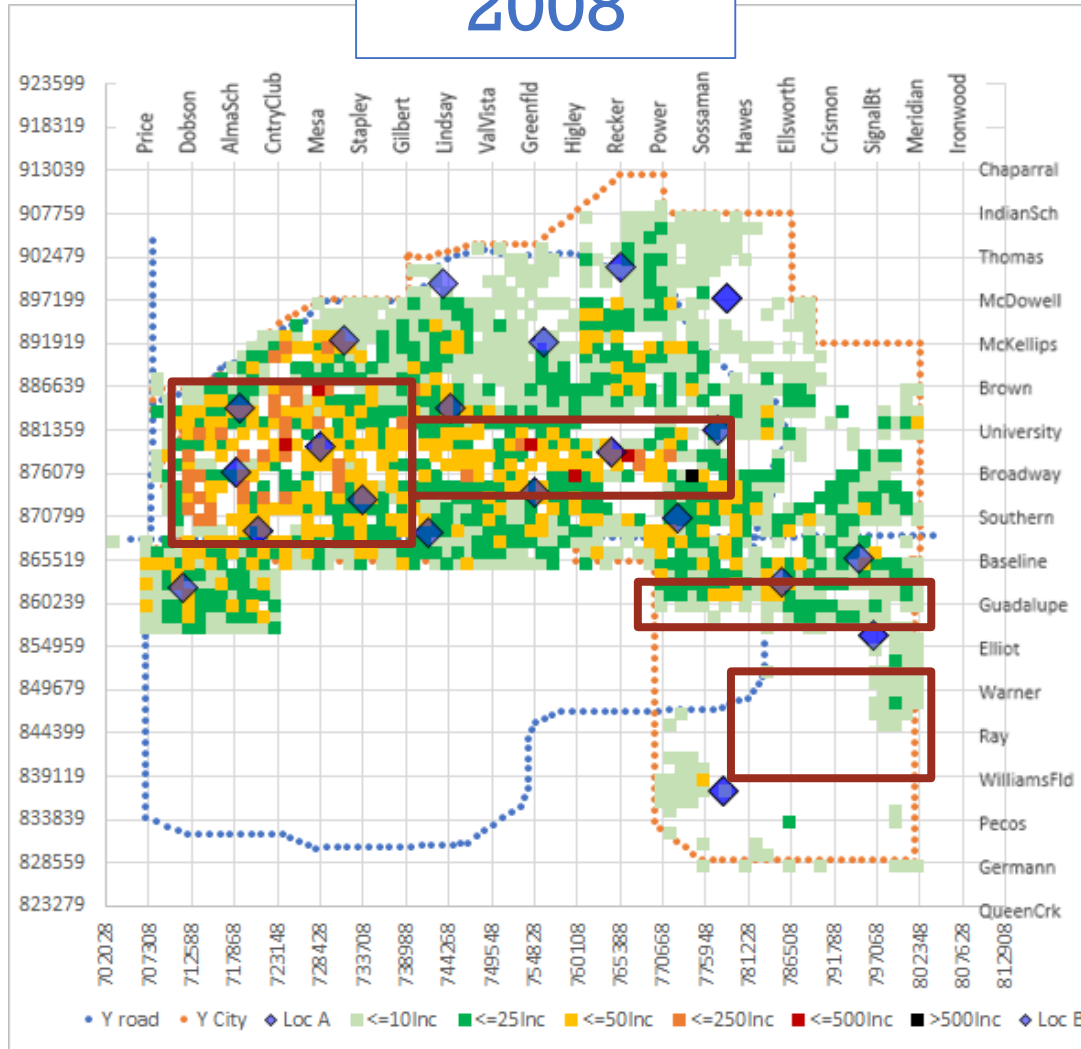- Service
- Medical - Secondary
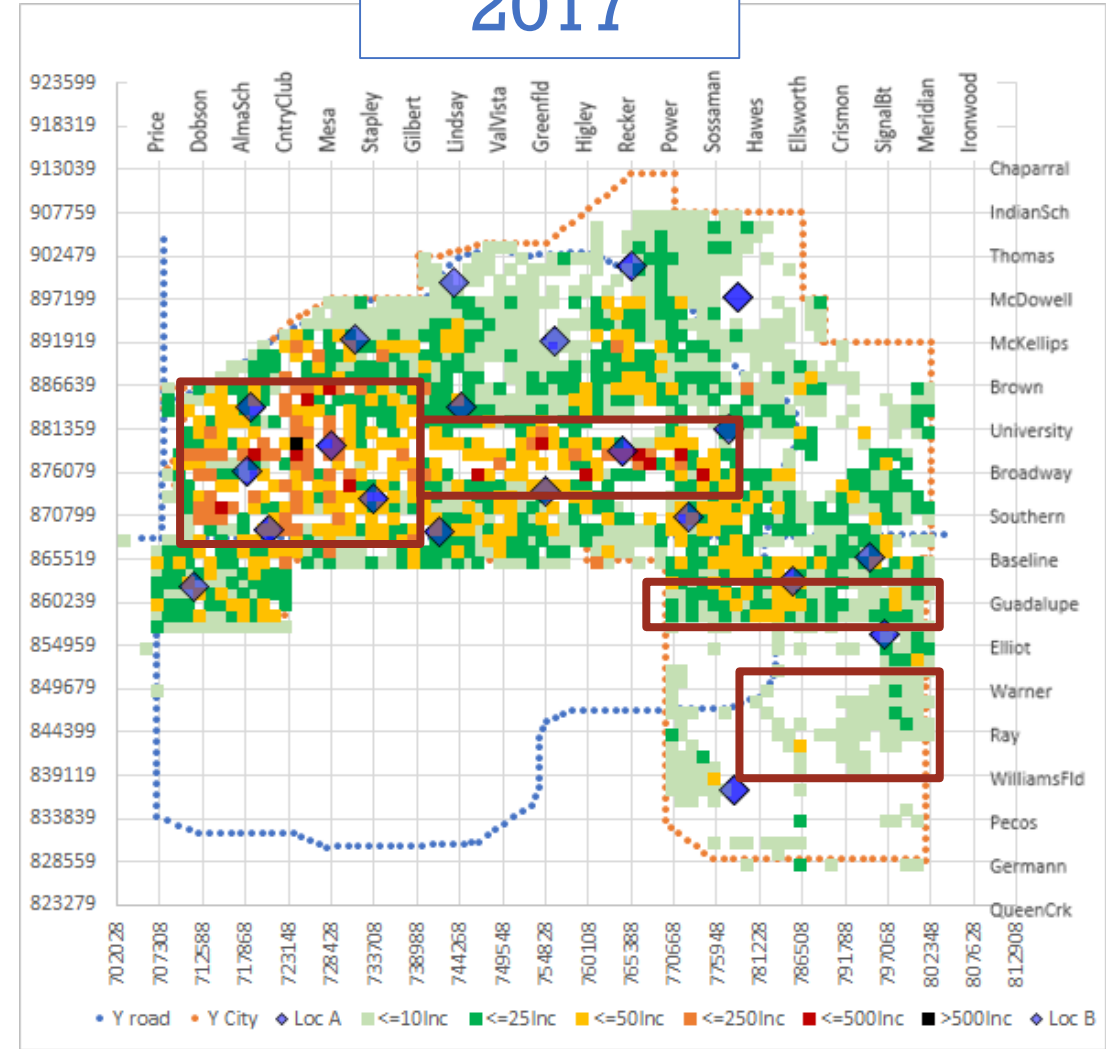
Fire Incidents

How much? ~ What? ~ Where? ~ When? ~ Acuity?

Medical Incidents

2008

2017

How much? ~ What? ~ Where? ~ When? ~ Acuity?

Areas

- **Zones**
- Neighborhood
- Construction Period
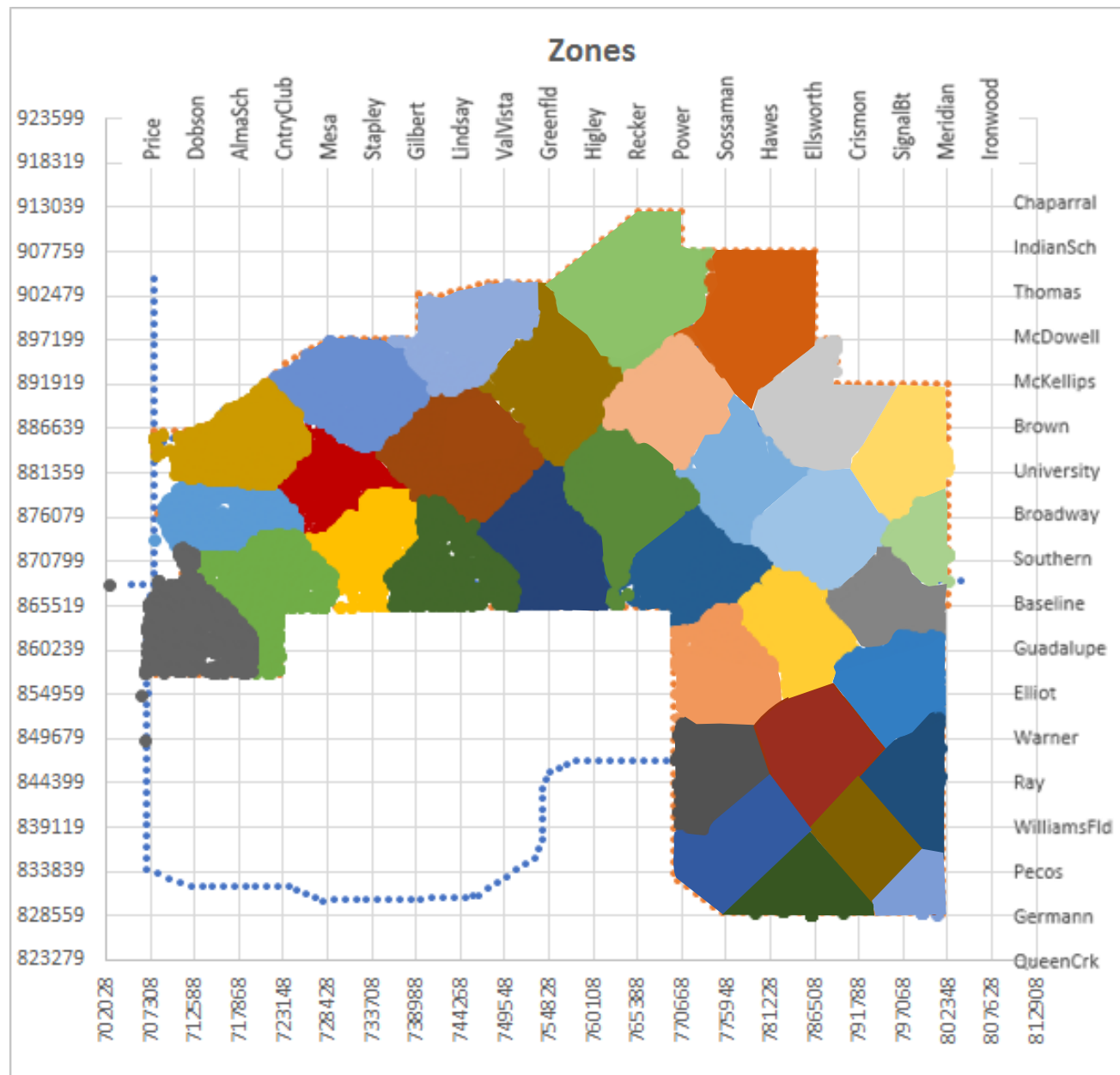
Demand Features Vary by Area

Area A

Area A has 8x the incident volume of Area B

1,500 incidents in 2017

40% growth since 2006

Area B

310% growth since 2006

Area B has 8x the incident growth rate of Area A

190 incidents in 2017

How much? ~ What? ~ Where? ~ When? ~ Acuity?

16
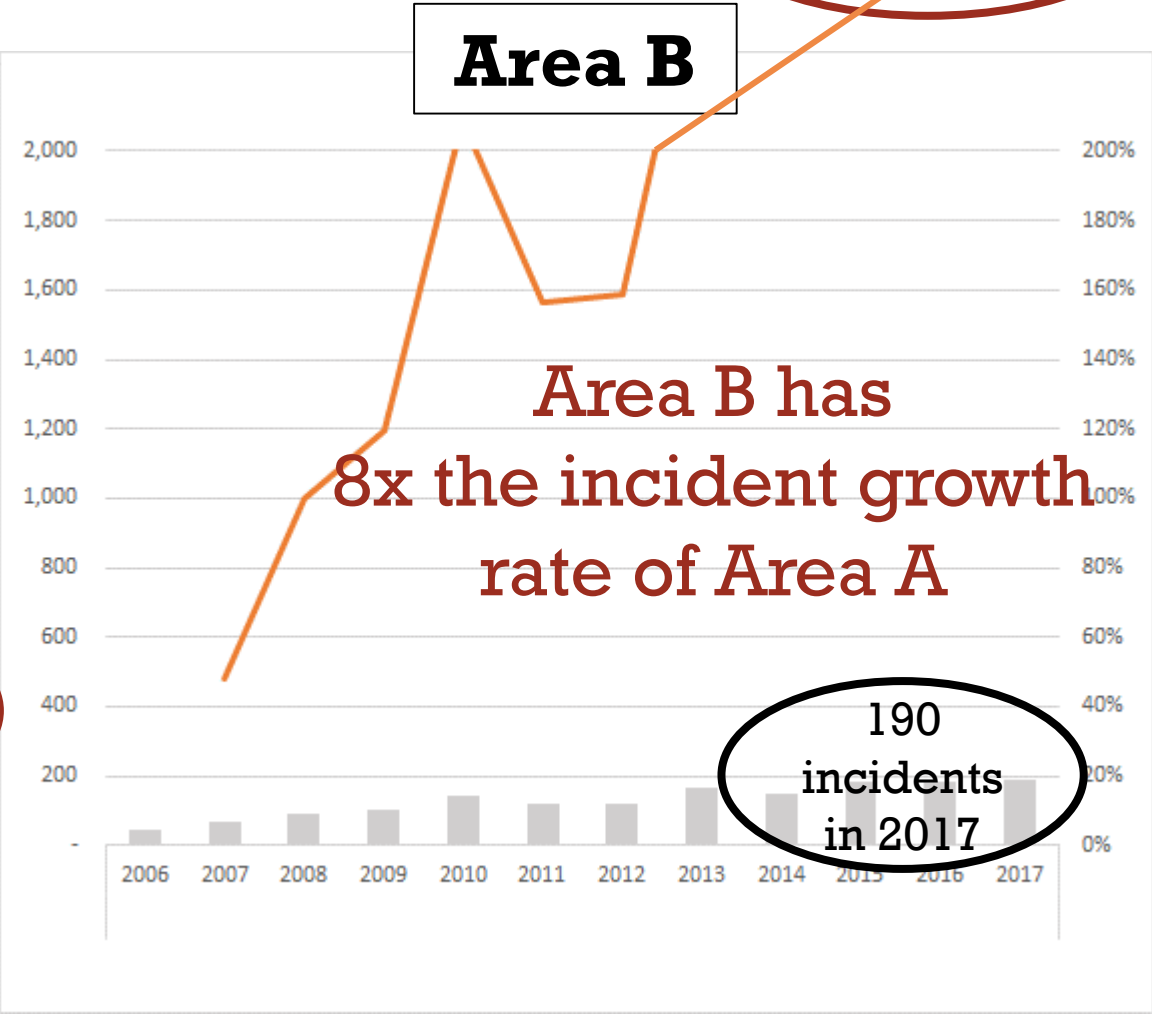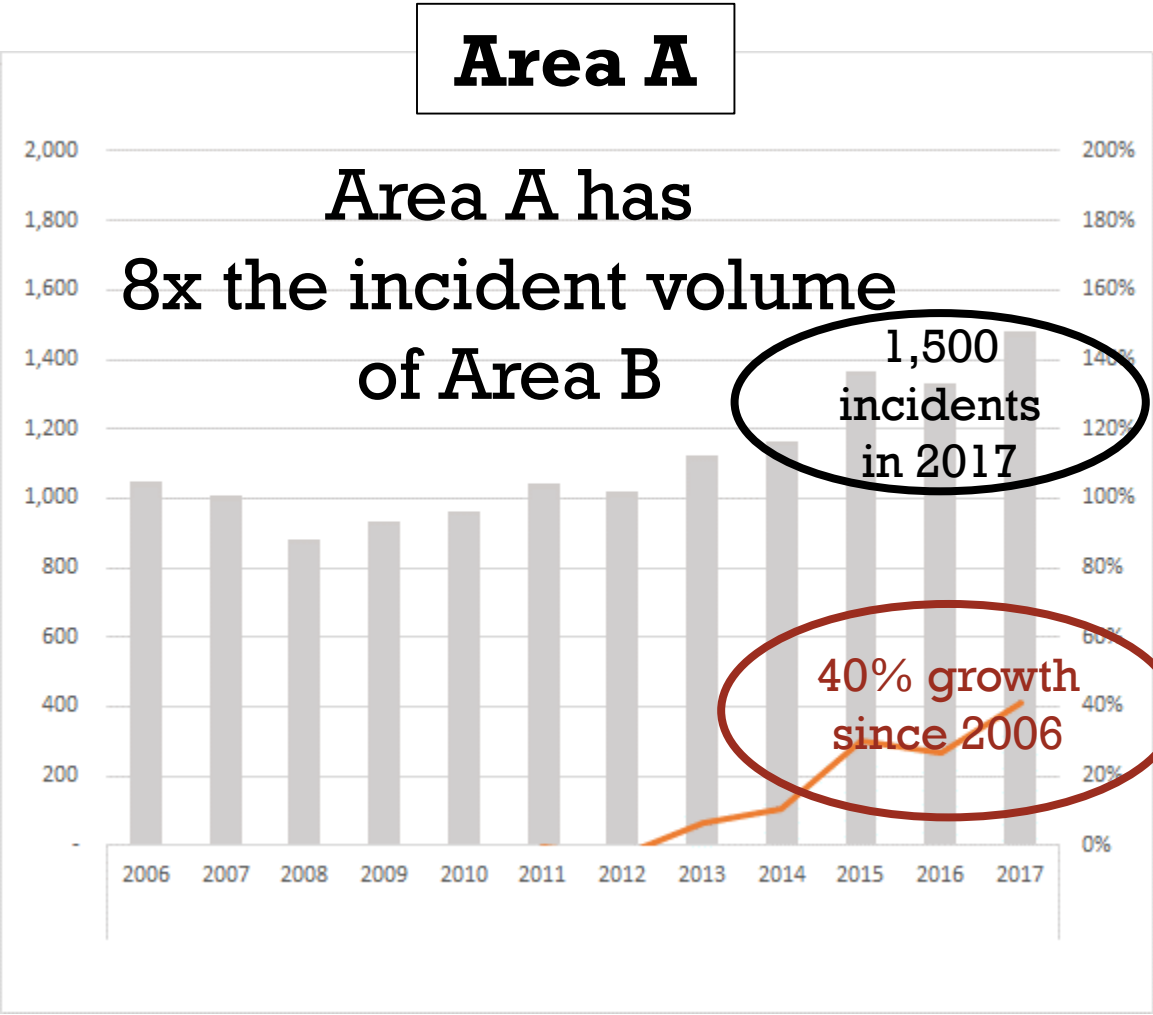
Demand Changes by Season

Seasonality
- Area C: Low

Seasonal Demand
Incident Counts

Demand Changes by Season

Seasonality
- Area D: High

Seasonal Demand
Incident Counts

Spring Summer Autumn

+18%

35%

-17%

Avg — Rolling — Midline
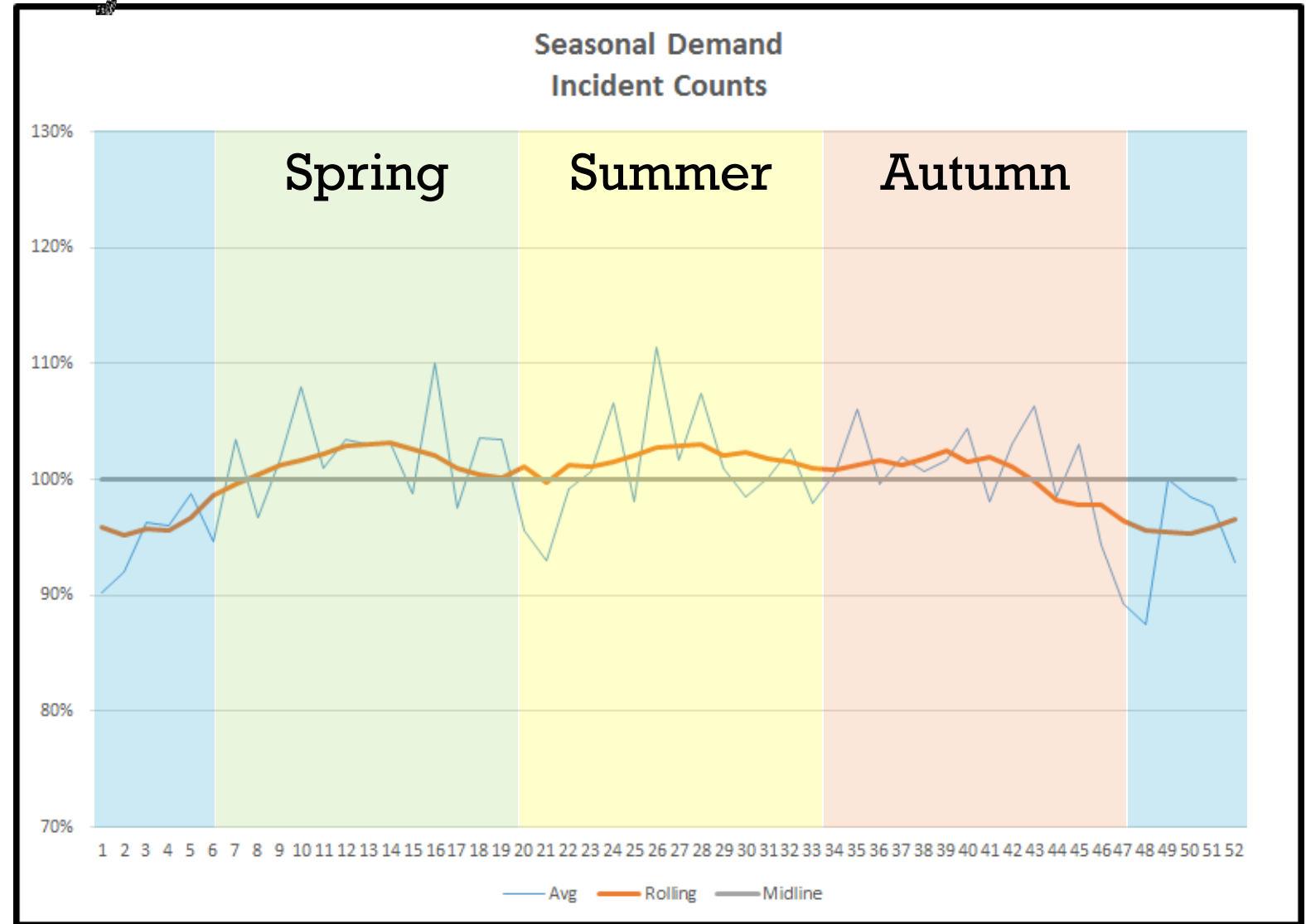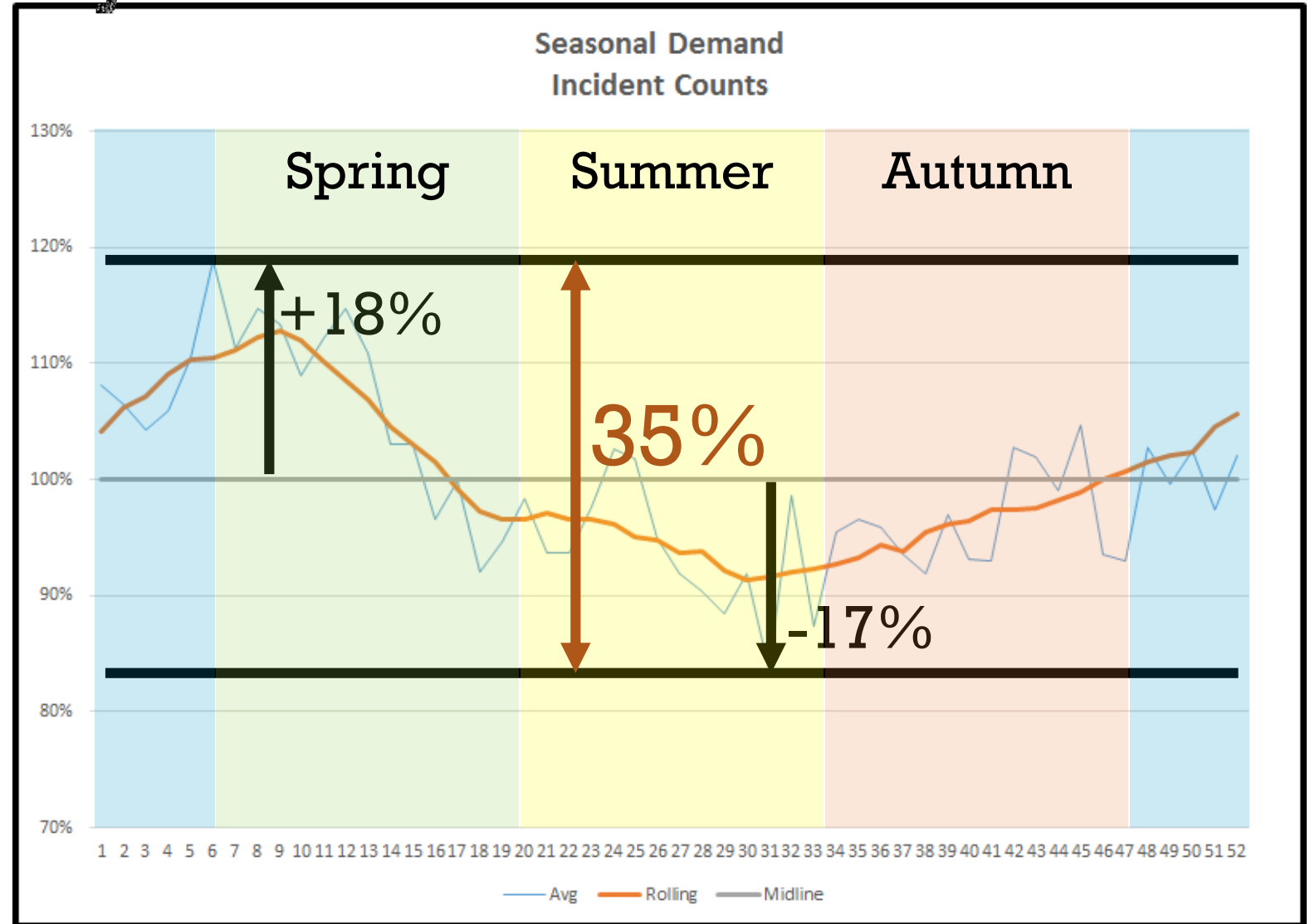
Demand Changes by Time Of Day

Time of Day
- 64% of calls occur from 9am – 9pm

...almost 2x calls during the day as at night

Incidents by Hour
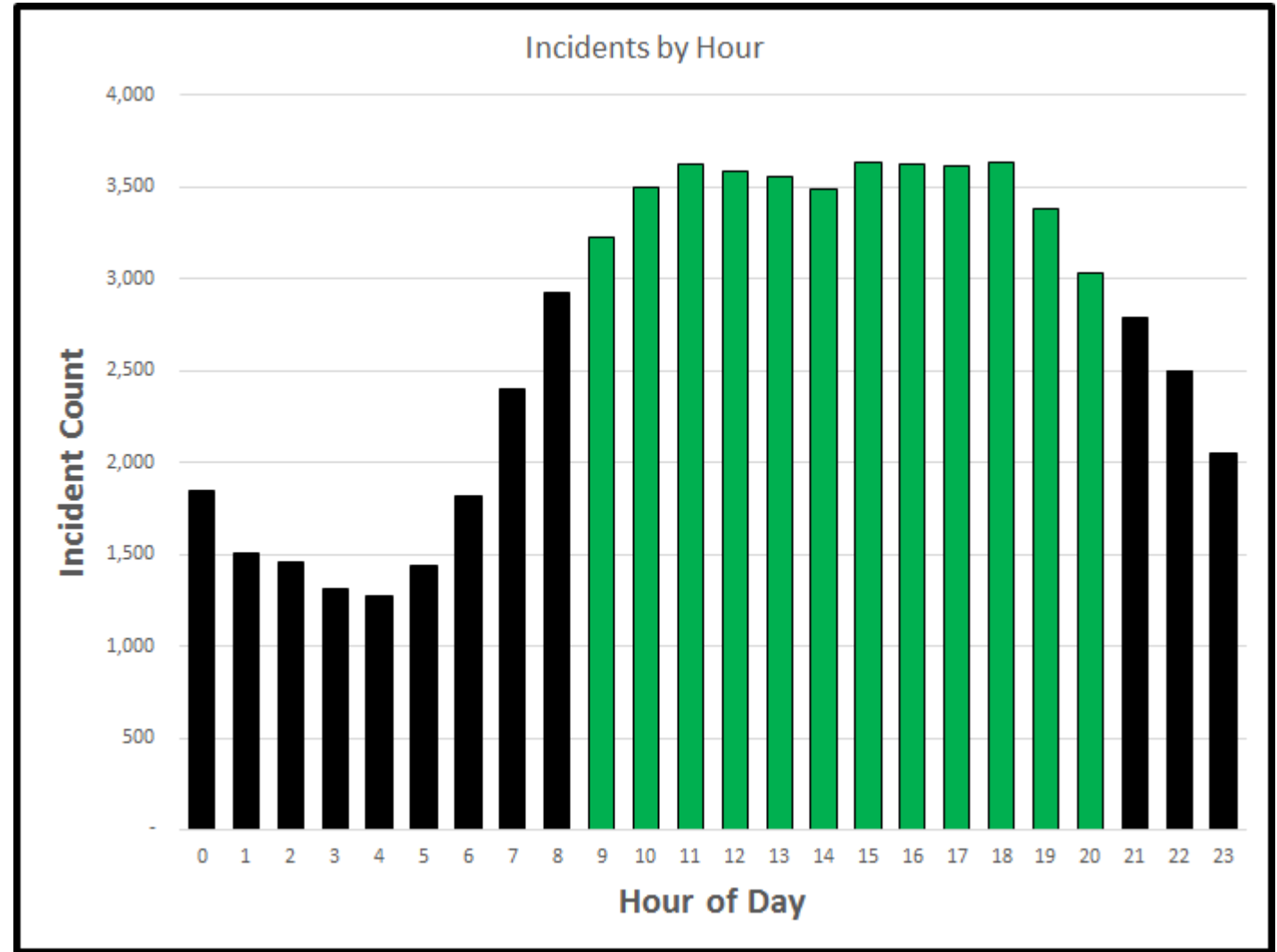
Demand has Different Levels of Acuity

Medical Subcategory	Complex	MVA	ALS	BLS	Total
Call Count (2017)	12,297	3,433	27,239	9,616	52,585
Type	18 Nature Codes Stroke Drowning Heart Attack	6 Nature Codes Bike Motorcycle Pedestrian	23 Nature Codes Fall Seizure Unconscious	18 Nature Codes Ill-B Fall-B Injury-B	65 Nature Codes All Call Types
5 (Severe)	17%	6%	4%	1%	15%
4	14%	7%	16%	7%	12%
3	13%	2%	8%	5%	10%
2	28%	20%	34%	33%	27%
1 (Normal)	22%	52%	31%	46%	29%
Not coded	6%	13%	7%	7%	7%

Acuity Levels (row label)
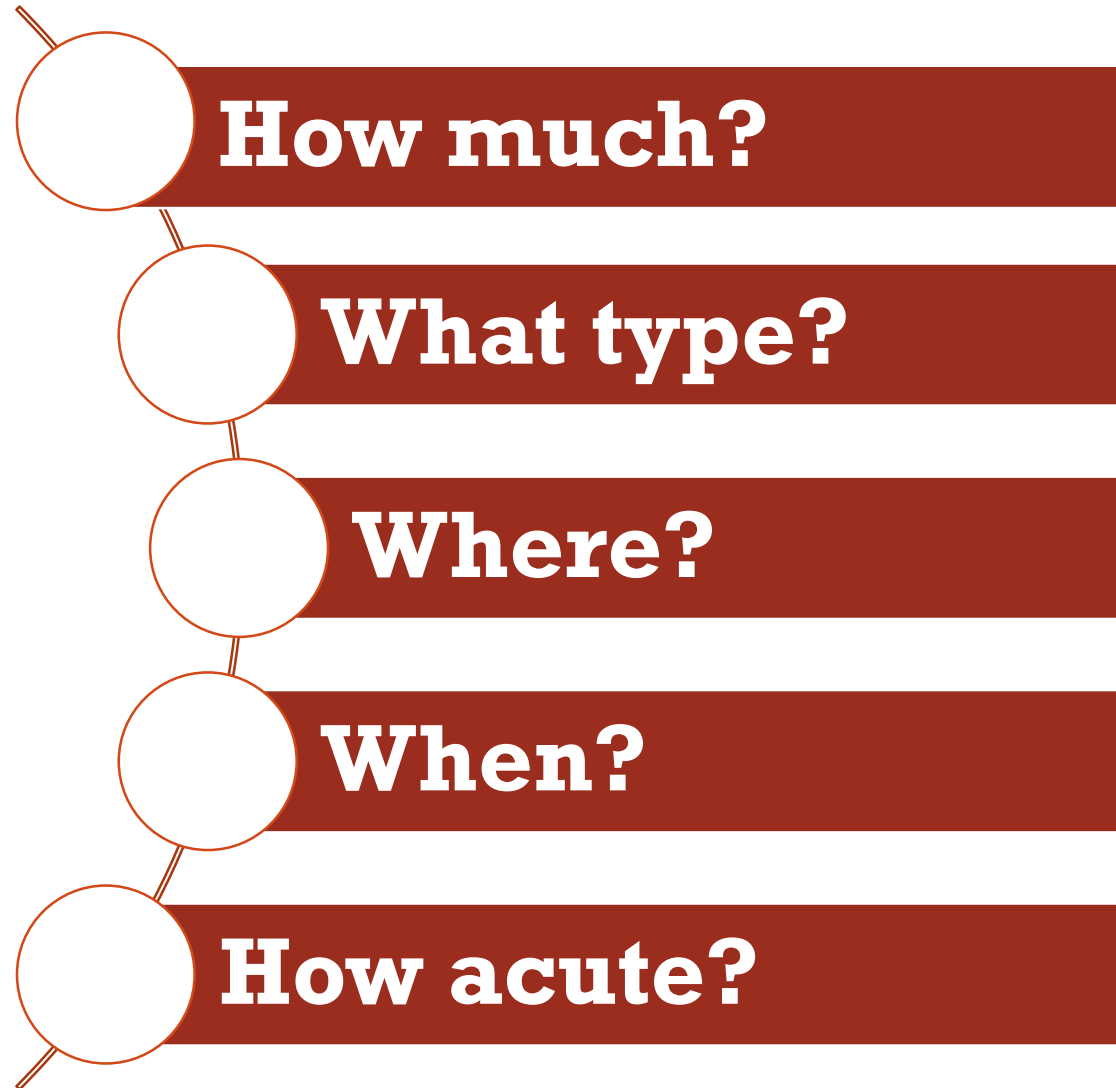
How much? ~ What? ~ Where? ~ When? ~ Acuity?

20

Describe Demand

How much?

What type?

Where?

When?

How acute?

MFMD Sequence of Events

Describe Causality → **Predict** → **Improve**

Demand

People & Stuff in Trouble → Decision to Call 911 → Description Of Need →

Response

Dispatch Units →

22