Emergency Services
Consulting International

City of Salinas Fire Department

Community Risk Assessment: Standards of Cover

September 24, 2019

Prepared for SFD in accordance with the guidelines of the Commission on Fire Accreditation, International, Standards of Cover - 6th edition and industry standards of best practice

- Description of Community Served
- Services Provided
- Community Expectations and Performance Goals
- Community Risk Assessment
- Critical Tasking and Alarm Assignments
- Historic System Performance
- Overall Evaluation, Conclusions, and Recommendations

This document is:

- A thorough review and assessment of community risk, emergency response capability, apparatus, and facilities
- An analysis of the level of service currently provided to the community
- Identification of issues impeding performance
- Recommendations for service delivery improvement

This document is NOT:

- A mandate requiring system changes or the expenditure of money on new fire department resources

Description of Community Served

The Community

- Growing urban community
- Resident population – 161,784
- Large migrant population

SFD

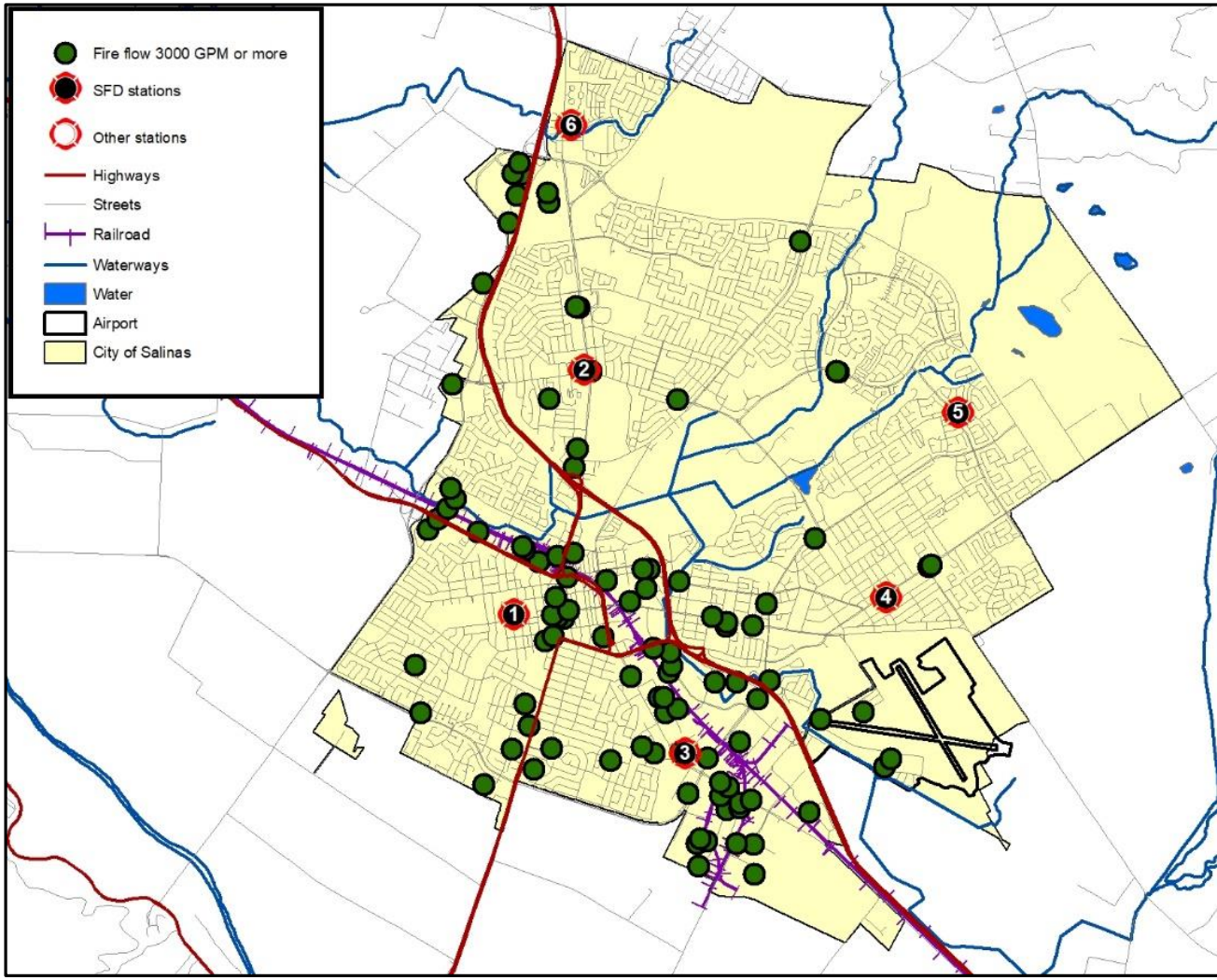
- Full-service fire department
- 6 staffed fire stations, 83 full-time employees and 2 part time
- Minimum 24 firefighters on duty

Services Provided

- Fire suppression (structural, wildland, other)
- Emergency medical services (advanced life support)
- Technical rescue
  - Entrapment extrication
  - Confined space rescue
  - High angle
  - Trench
  - Swift water
- Hazardous materials emergency response
- Fire prevention and public safety education

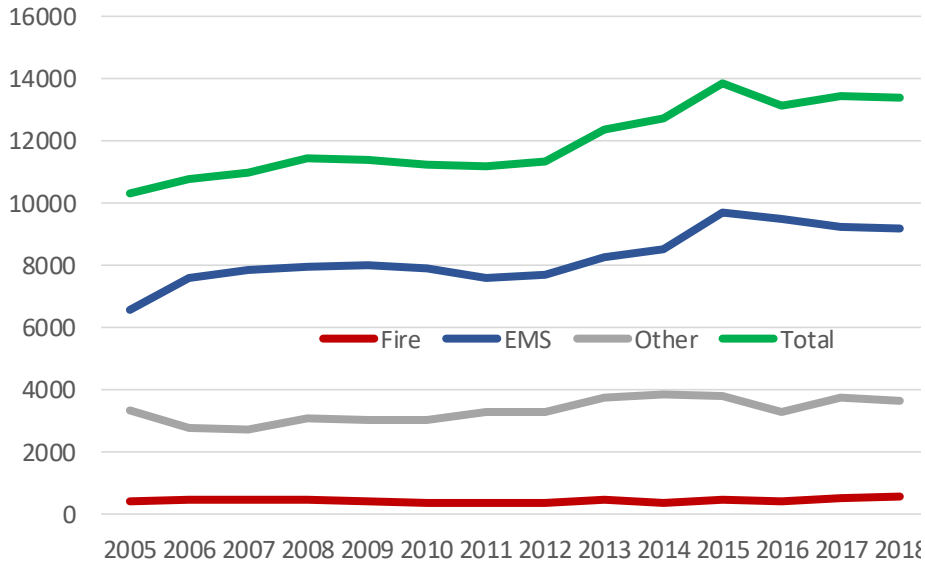
Community Risk Assessment - Environment

- Risks of note:
  - Earthquake
  - Numerous high fire flow buildings
  - Hazardous materials

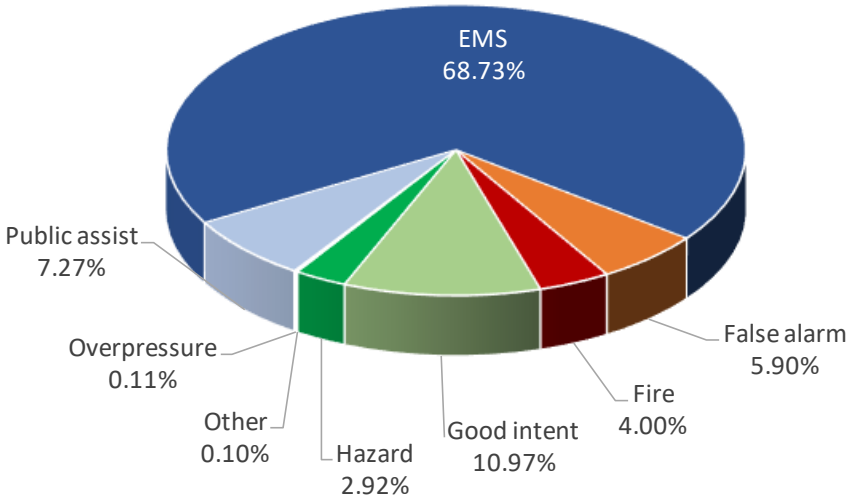


Community Risk Assessment – Response Workload

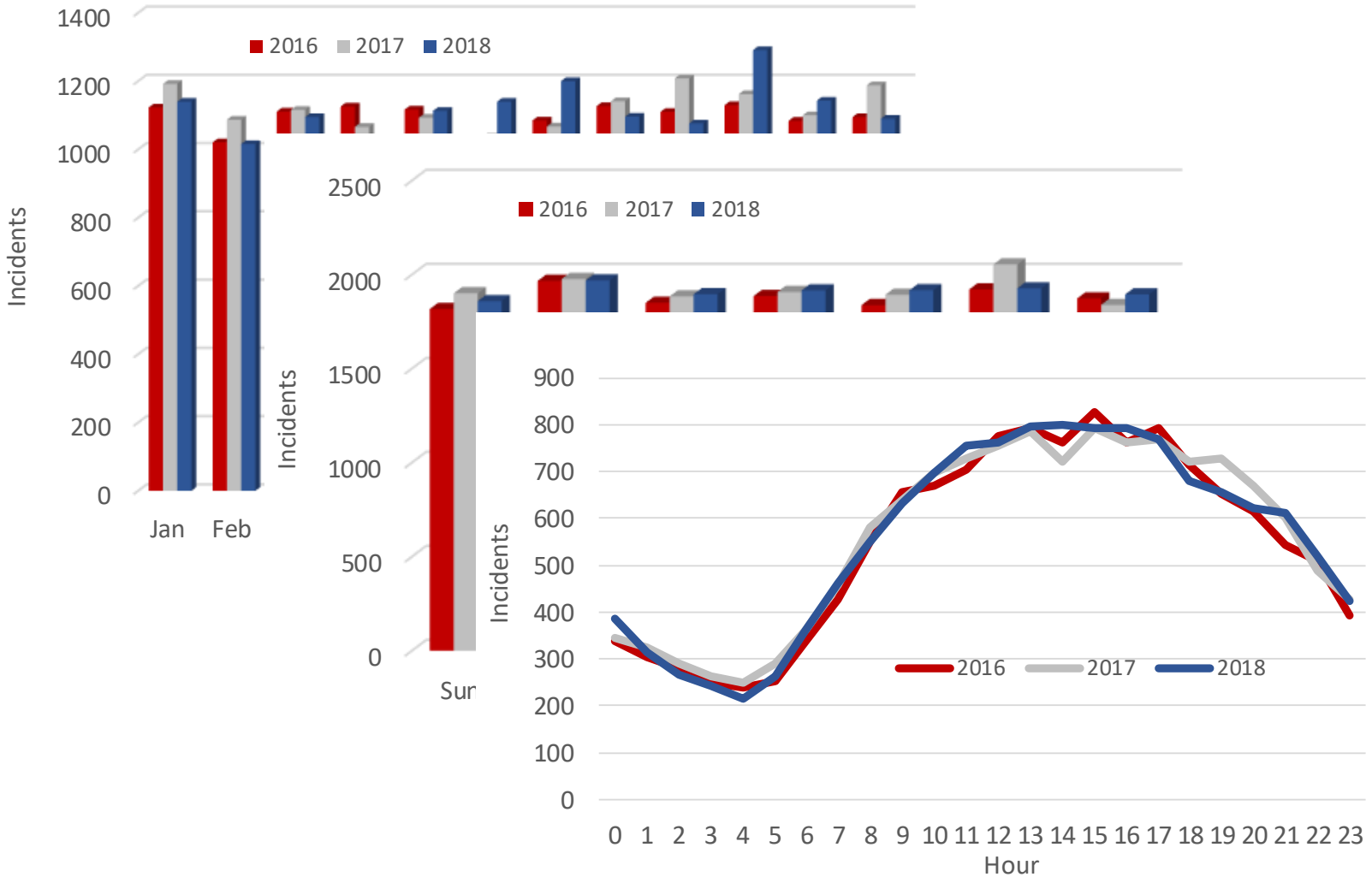
29.8% increase over past 14 years



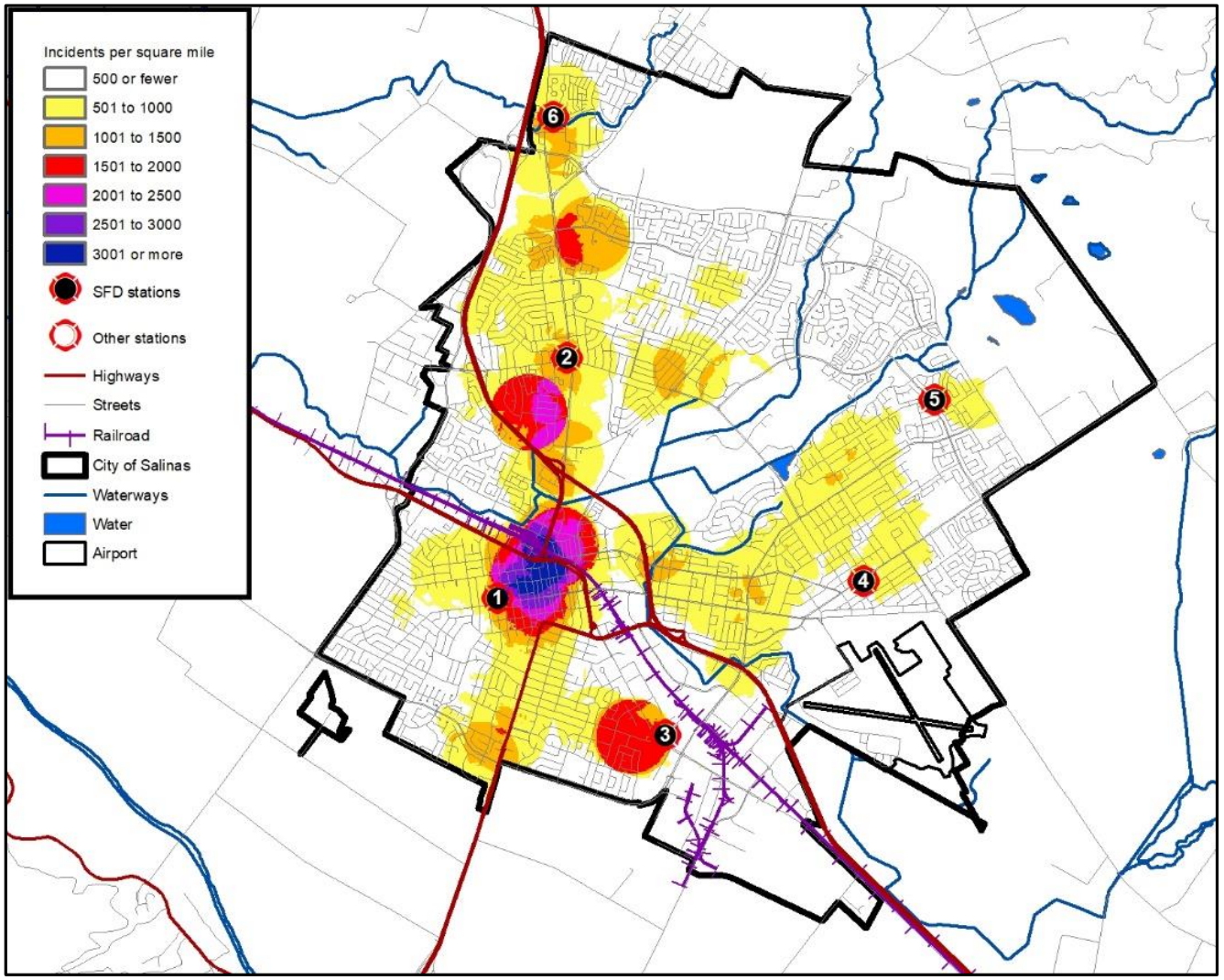
13,379 incidents during 2018 68.7% EMS



Community Risk Assessment – Response Workload



Community Risk Assessment - Response Concentration



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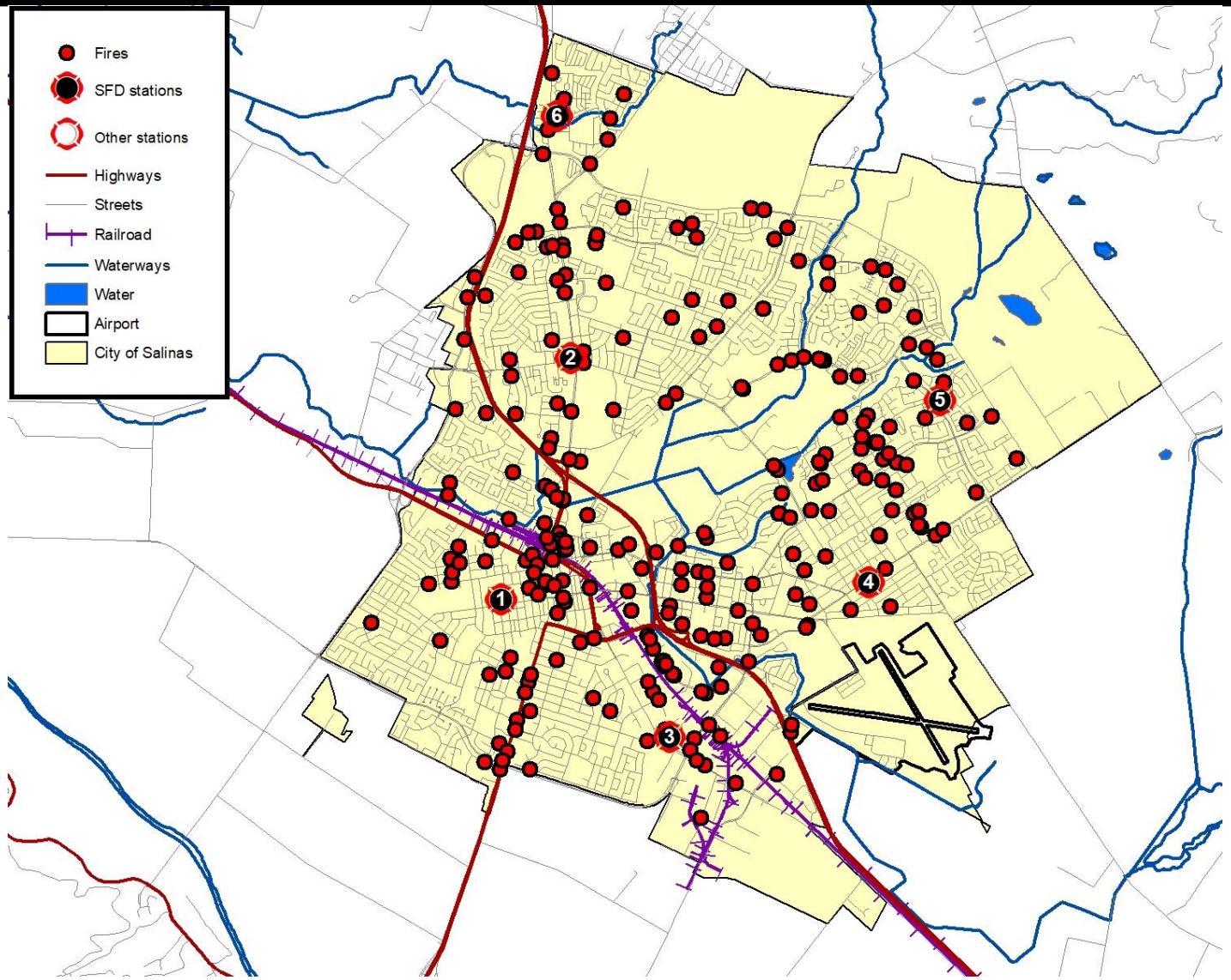

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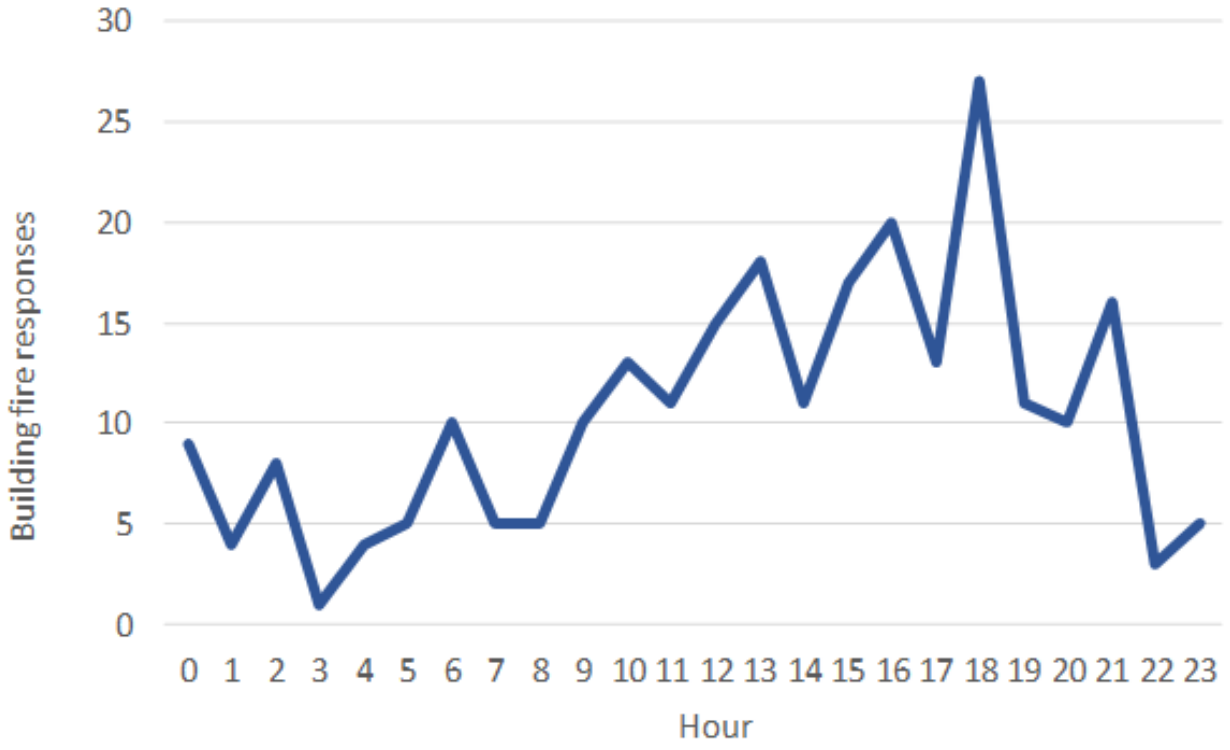
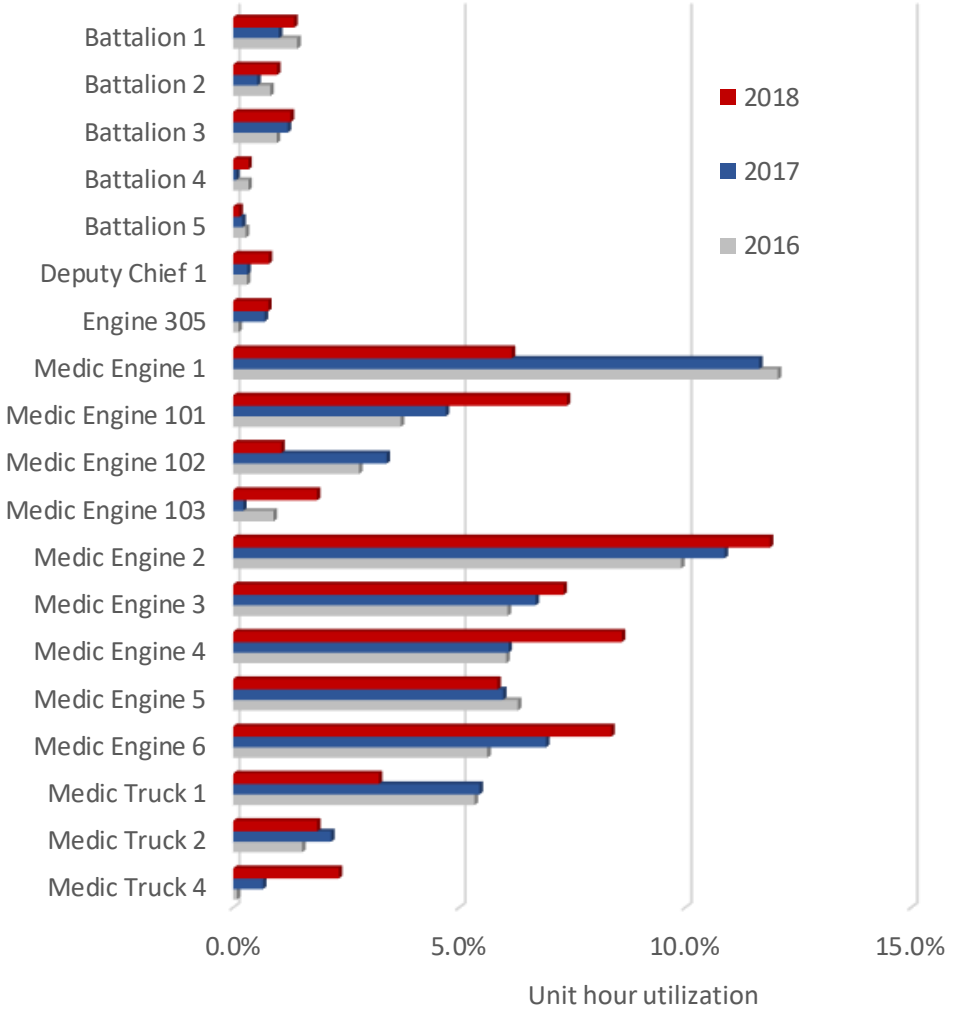
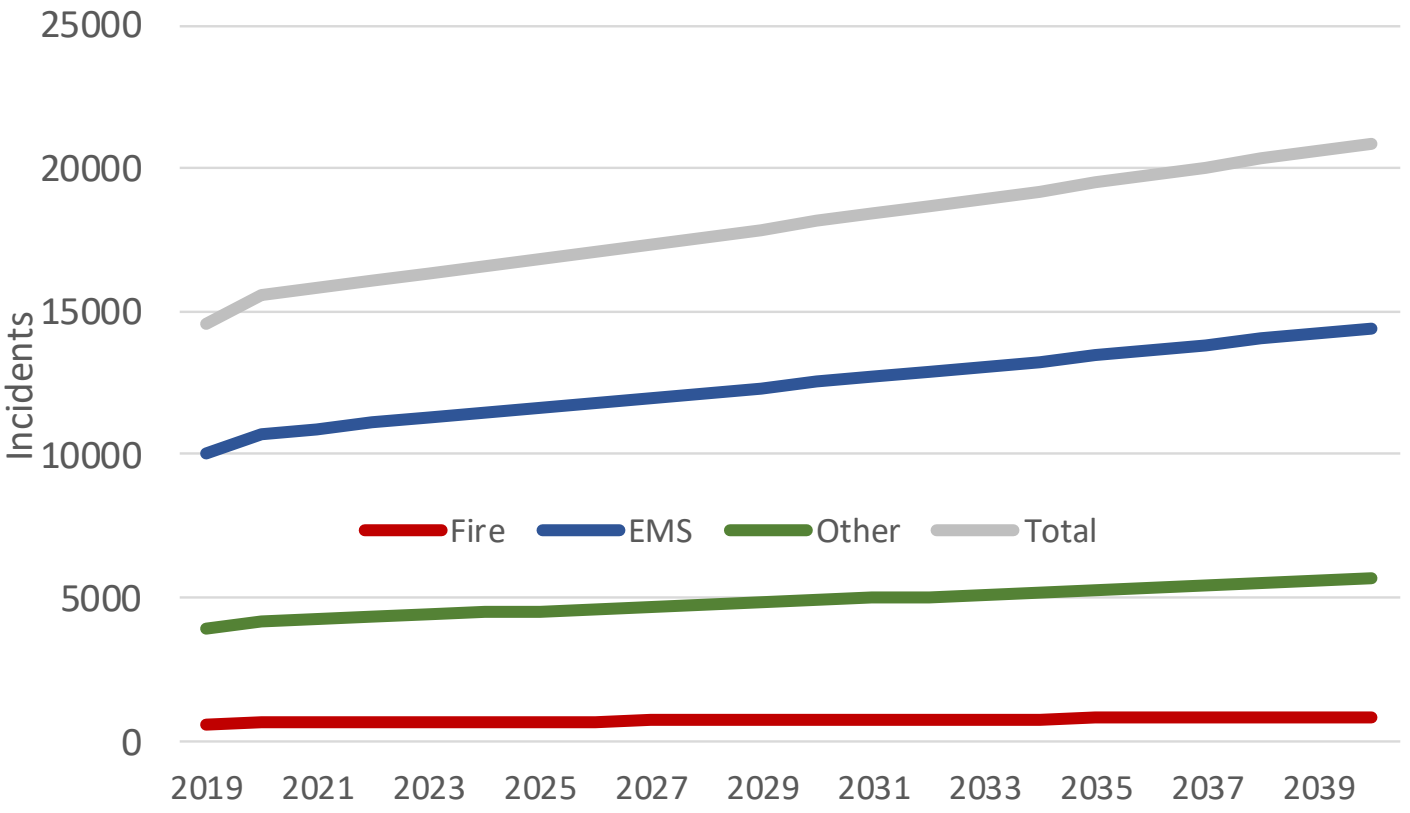


Community Risk Assessment - Response Crew Workload



Community Risk Assessment – Response Workload Forecast

20,800 incidents by 2040



Community Expectations

Twenty-nine stakeholders were scheduled for interviews that were completed over a two-day period. Of the 29 interviewees, these stakeholders represented the City Council, City Administration, Community Members, Business Community, SFD Labor, Administrative Staff Members, Chief Officers and the Fire Prevention Bureau

Community Expectations

- Respond rapidly to all activities that citizens request their response.
- Stay within their budget
- Decrease overtime.
- Manage expenses.
- Firefighters trained and certified.
- Respond in an appropriate time frame; collaborate with other agencies.
- Analyze call volume.
- Research geographically and population trends; review the national average when compared to SFD's average.

City Council –City Administration Expectations

- The Fire Department should look ahead and avoid being stymied by “old issues”; focus on the future.
- Study different staffing models.
- Conduct a study of the existing fire station locations and total number of stations.
- Evaluate the current Paramedic EMS model.
- Increase the existing Community Outreach Program and continue with the current Paramedic Program.

Chief Officers, Labor Leaders & Rank and File Opinions

- The employees, “members,” of the Salinas Fire Department are holding the Department together.
- Many personnel engage in collateral duties such as hazmat, rescue, etc. in order to provide the best possible service.
- The Department provides a very high level of prehospital care.
- Working together as a team has made the Department what it is today.
- The degree of dedication and tradition is amazing..
- Firefighters are open to changes and new ways; carry out the same functions with a new type of vision.

System Performance

People + Tools + Time = Effectiveness

- People – Trained emergency responders
- Tools – Apparatus, equipment
- Time – Duration between event start and intervention
- Effectiveness – Degree to which harm caused by the event is limited

Critical Tasking and Alarm Assignments

People

Low-rise structure fire

Task	Number of Personnel
Command/Safety	1
Pump Operations	1
Attack Line	2
Search and Rescue	2
Ventilation	2
RIC	3
Backup Line	3
Total	**14**

Tools

Unit Type	Number of Units	Total Personnel
Engine	4	12
Truck	1	4
Air Supply	0	0
Battalion Chief	1	1
Total Staffing Provided		**17**
Total Staffing Needed		**14**

Phases of an Emergency Event

1. Detection
2. Contact with emergency dispatch center
3. Dispatch incident processing
4. Response crew notification
5. Turnout time
6. Travel time
7. Set-up time
8. Incident control time

Phases of an Emergency Event

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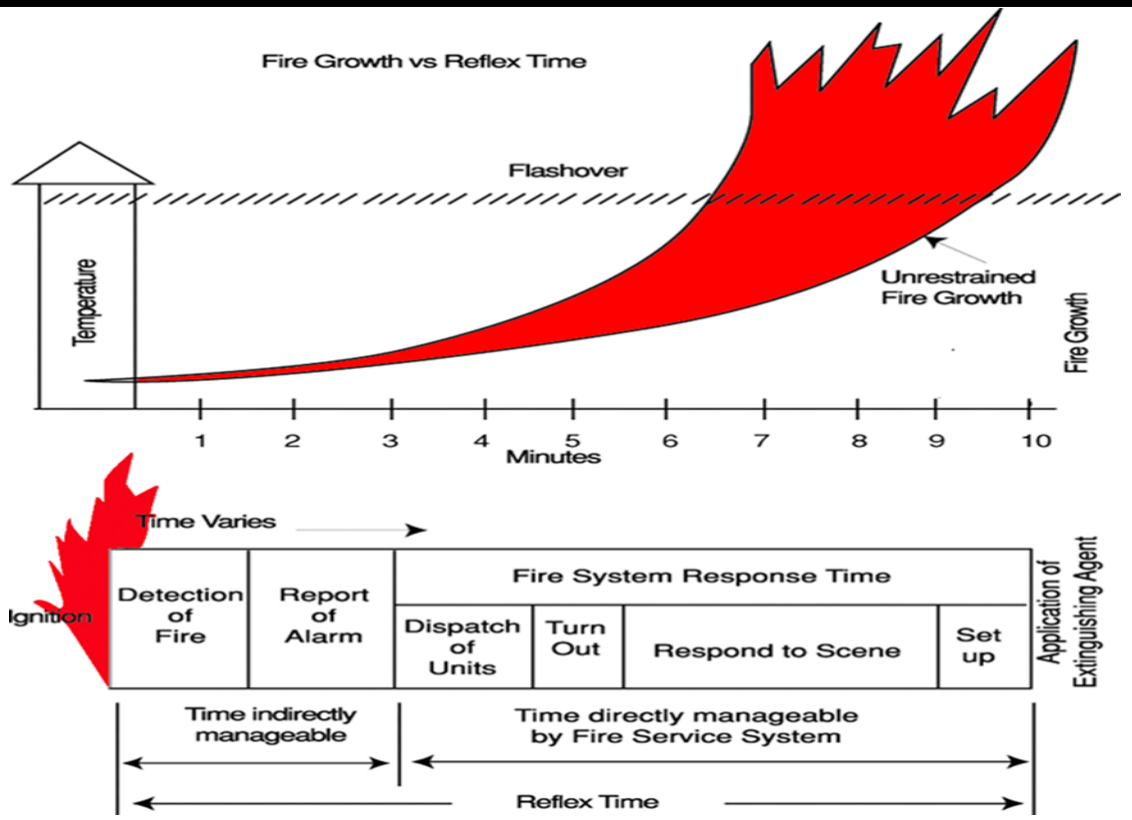
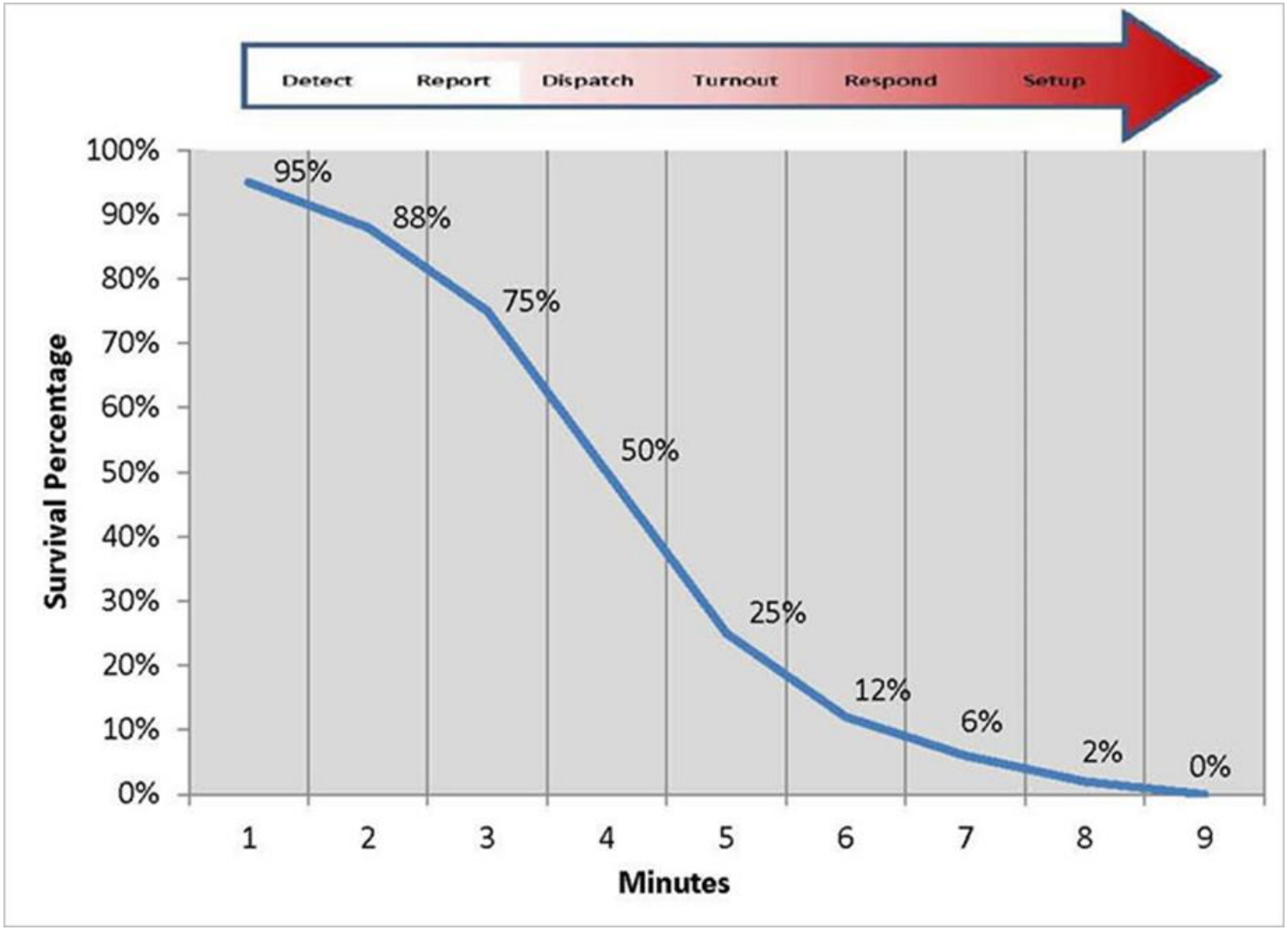
Influence of Time



Consequence of Fire Extension in Residential Structures 2011–2015

Extension	Rates per 1,000 Fires: Civilian Deaths	Rates per 1,000 Fires: Civilian Injuries	Average Dollar Loss Per Fire
Confined to room of origin or smaller	1.8	24.8	$4,200
Confined to floor of origin	15.8	81.4	$36,300
Confined to building of origin or larger	24.0	57.6	$67,600

Influence of Time



Influence of Time

- Trauma – “Golden hour”
- STEMI – Onset to recognition to treatment in cath lab
- Respiratory compromise during entrapment
- Physical and environmental harm from hazardous materials release
- Cold water drowning

Response Performance Goals Used for Evaluation

	Performance Goal
9-1-1 call answer time (time from first ring to answer)	Within 1 seconds 95% of the time
Call process time (time from acceptance at the dispatch center until notification of response units	Within 64 seconds 90% of the time

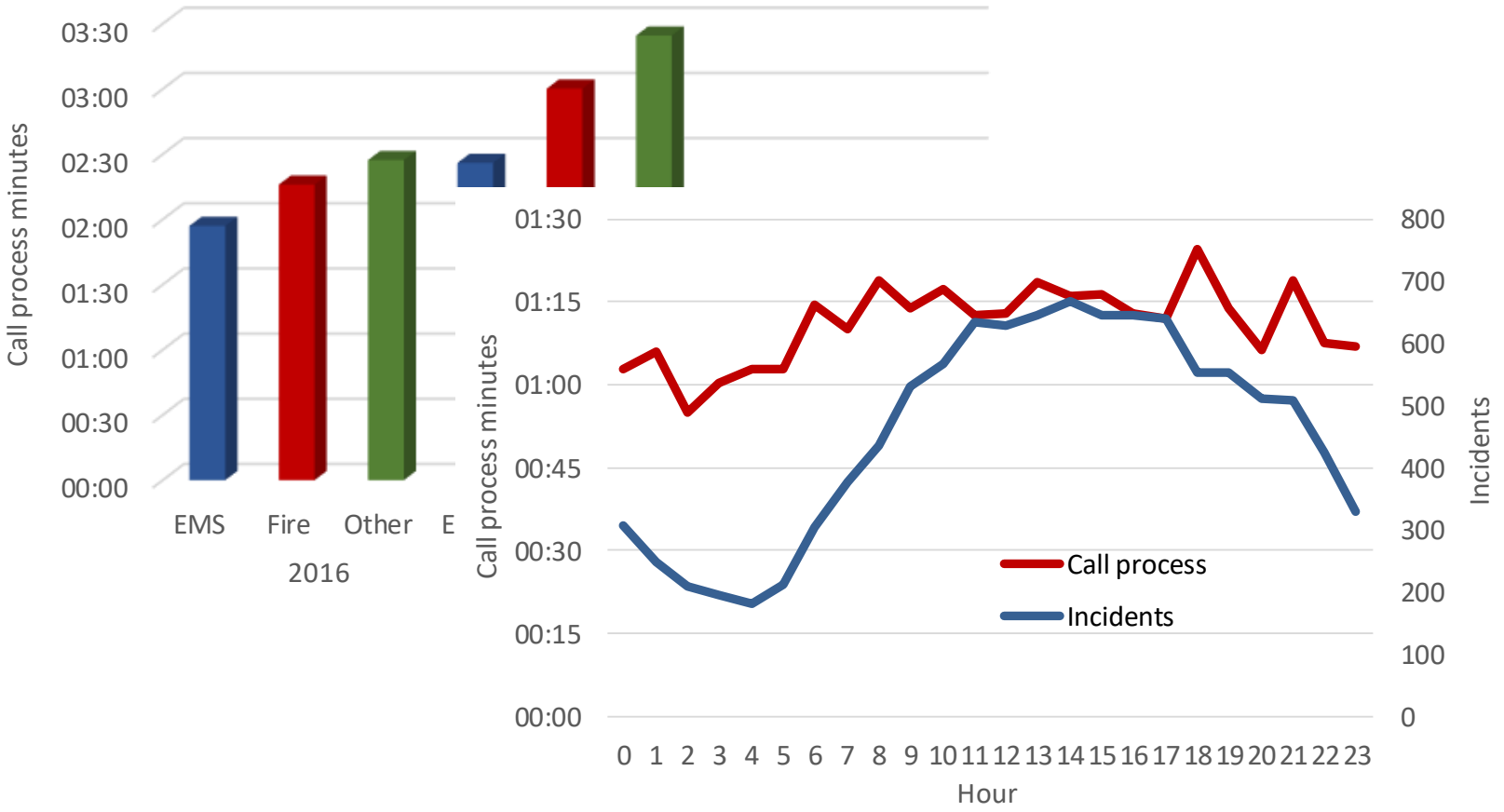
Response Performance Goals Used for Evaluation

Incident Interval	Performance Goal
Turnout time (time from notification of response personnel until the initiation of movement towards the incident)	Fire and special operations incidents – Within 80 seconds 90% of the time All other incidents – Within 60 seconds 90 % of the time
First unit travel time (time from notification of response personnel until arrival at the incident)	Within 4 minutes 90% of the time
First unit total response time (time from received at dispatch until arrival of the first response unit)	
Fire and special operations	Within 5 minutes 20 seconds 90% of the time
EMS	Within 5 minutes 90% of the time
Full effective response force response time (Time from notification of response personnel until all units dispatched arrive at the incident)	Within 9 minutes 20 seconds 90% of the time

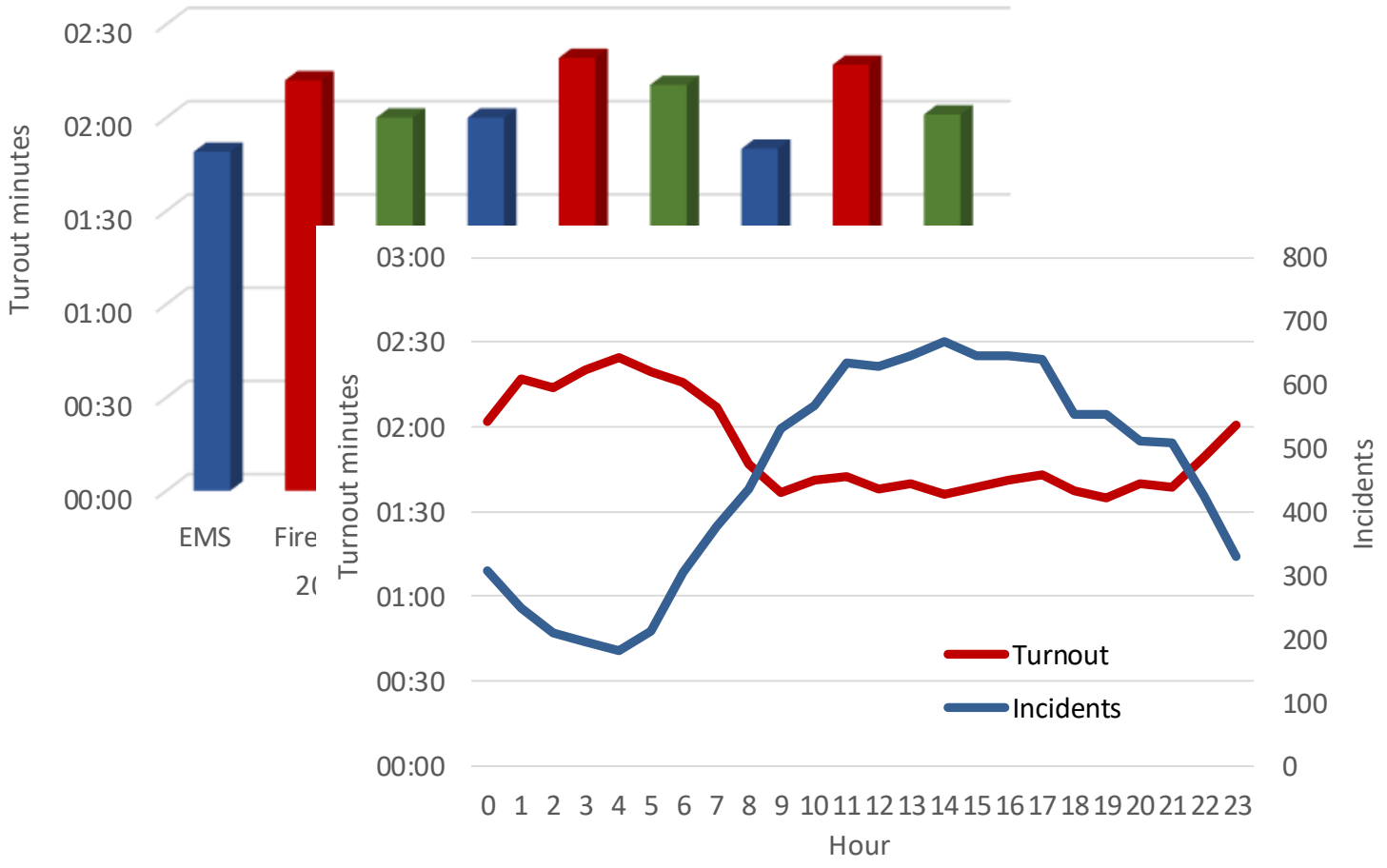
Historic System Performance – Call Processing Time

Call answer time

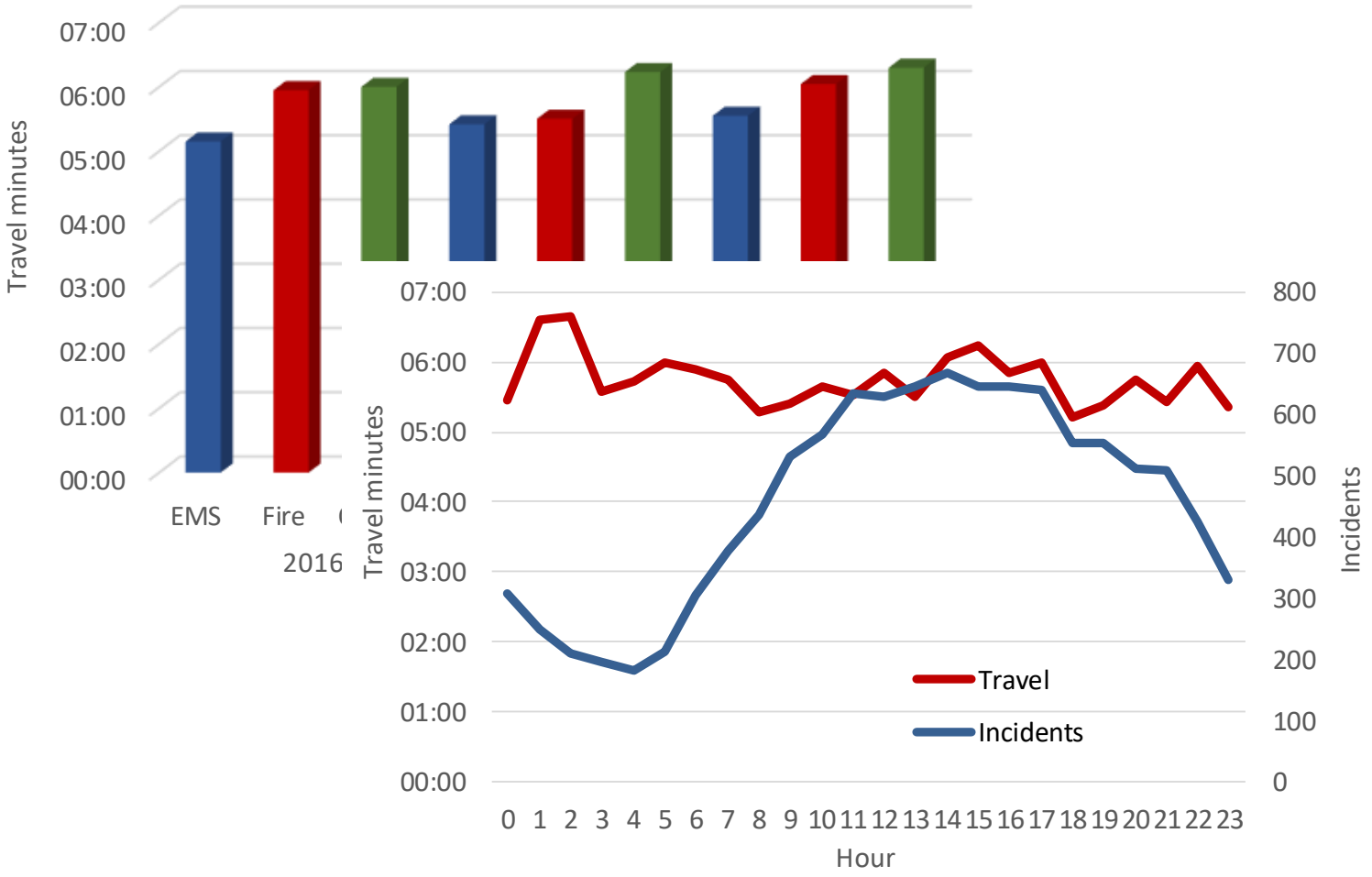
- Not known



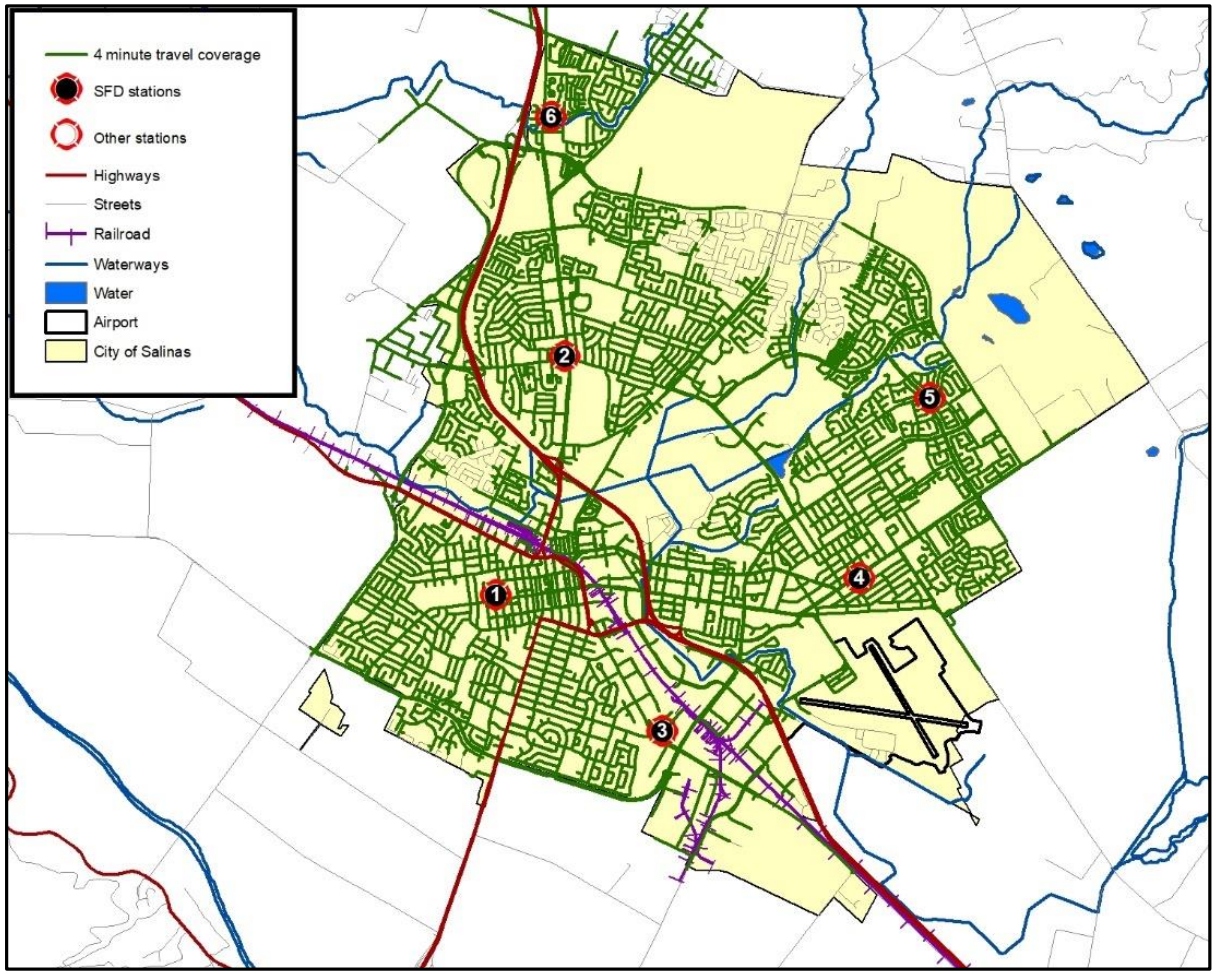
Historic System Performance – Turnout Time



Historic System Performance – Travel Time

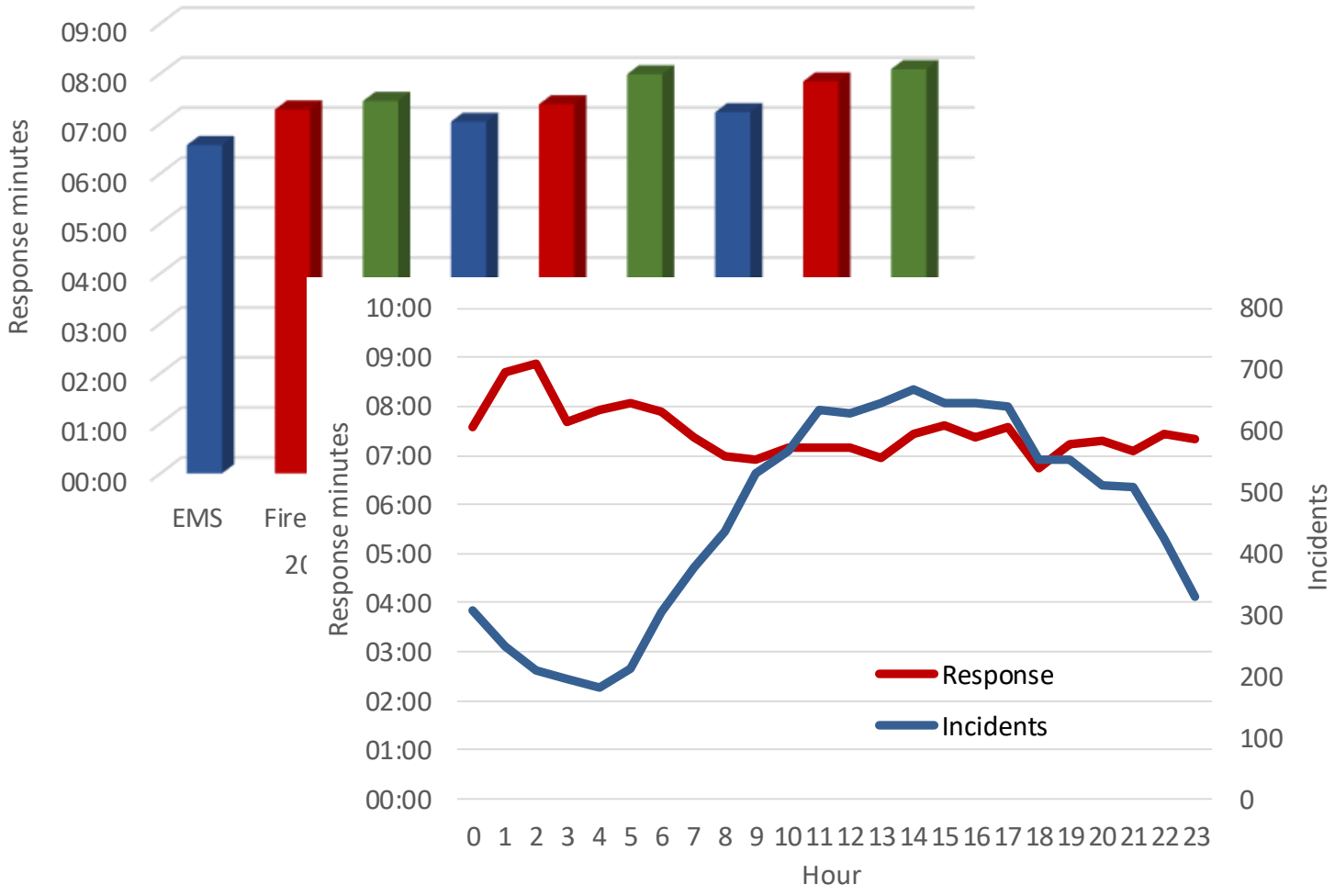


Historic System Performance – Travel Time

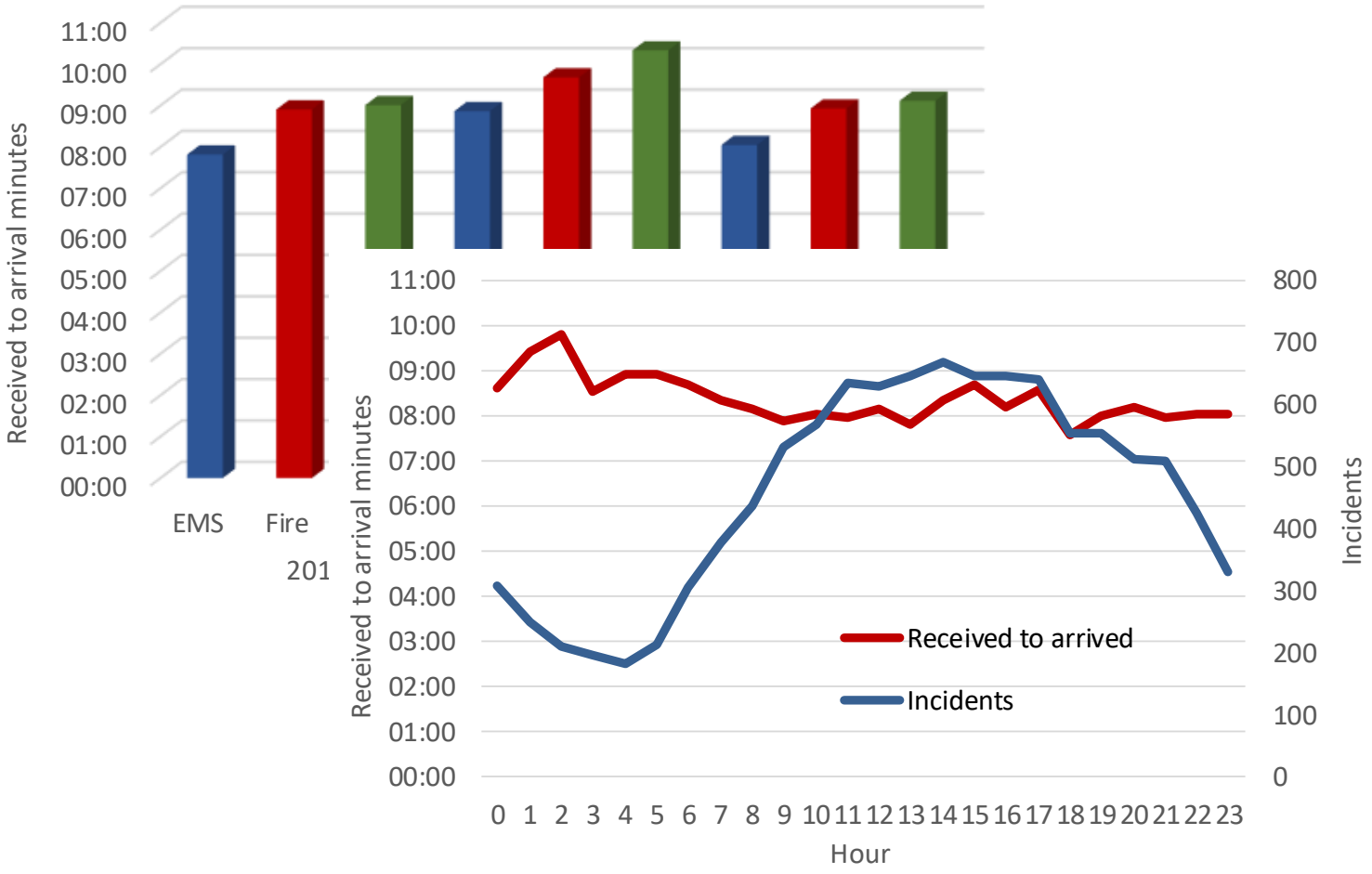


94.6% of incidents within 4 travel minutes of a fire station

Historic System Performance – Response Time

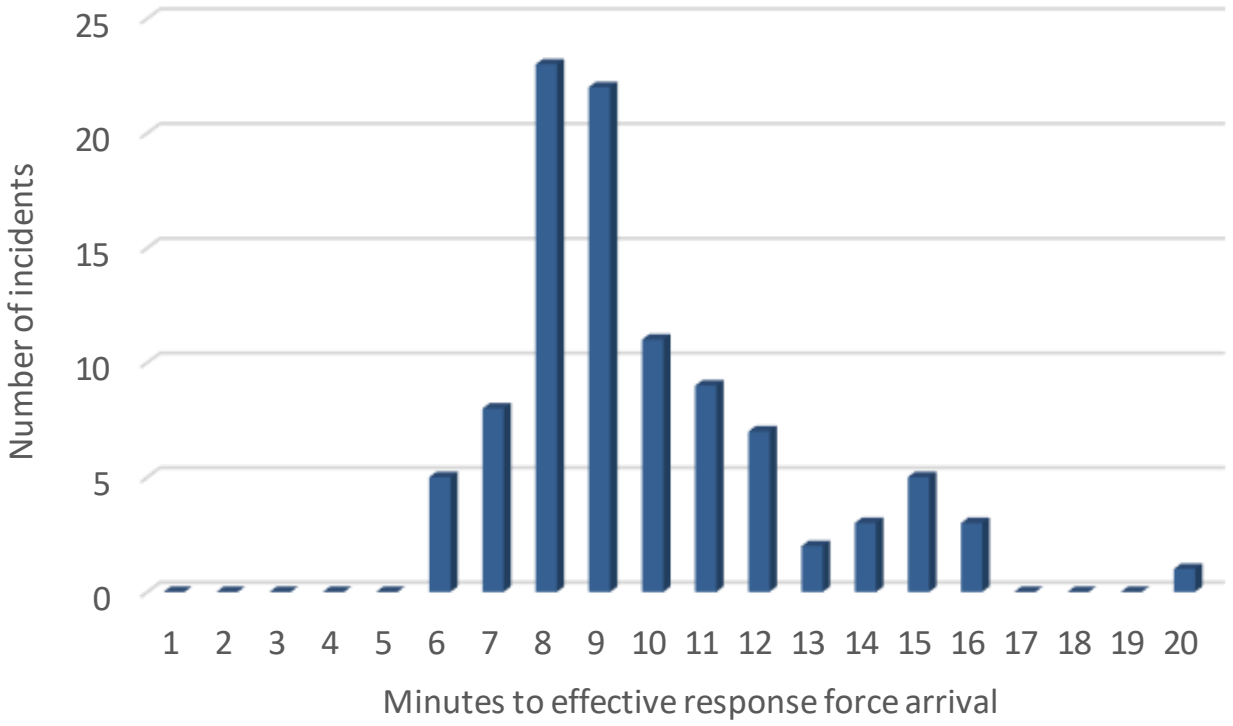


Historic System Performance – Received to Arrival Time



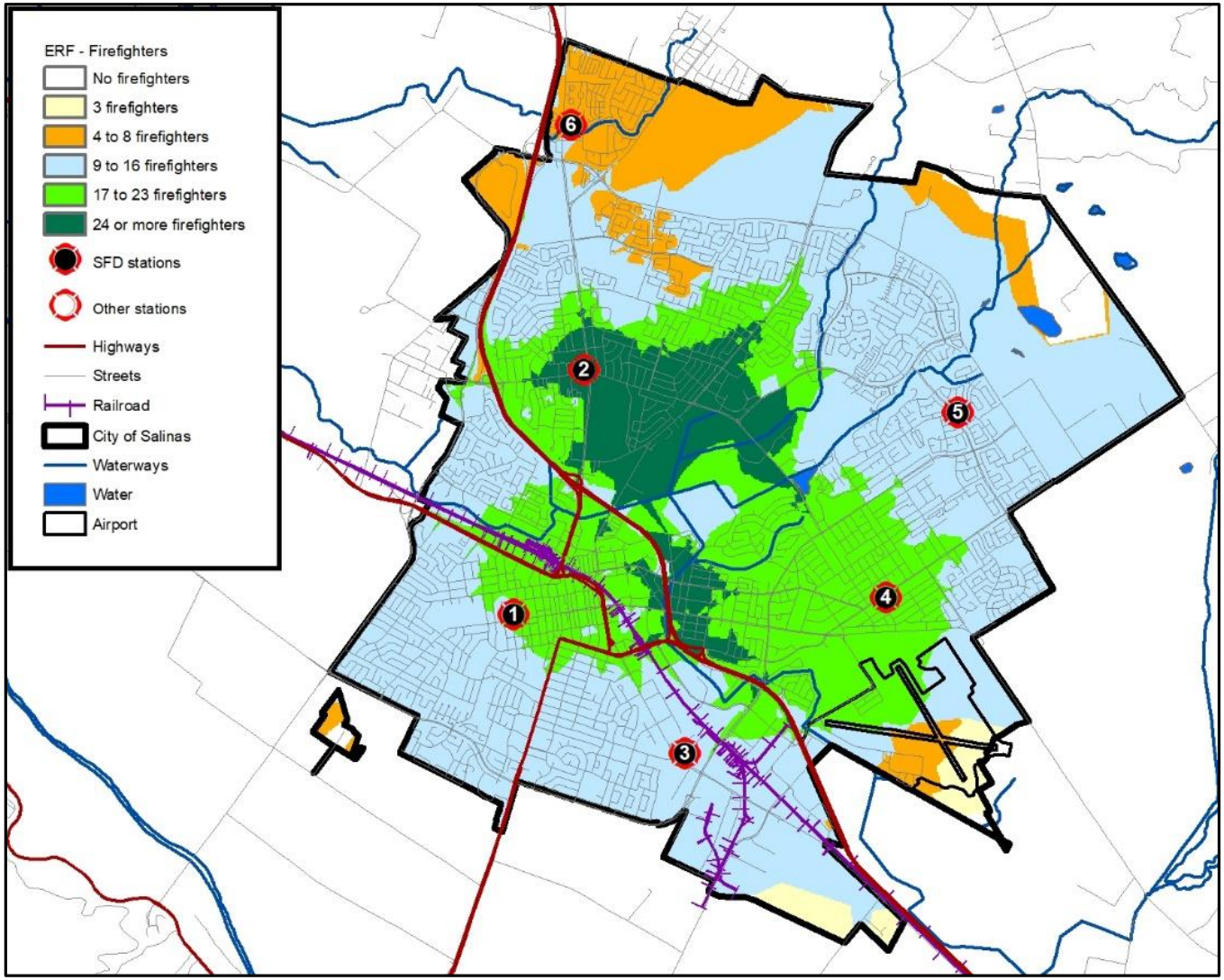
Historic System Performance - Effective Response Force

	2016	2017	2018
Number of fires with full ERF	29	23	27
Time to deliver the full ERF	15:00	11:24	13:09



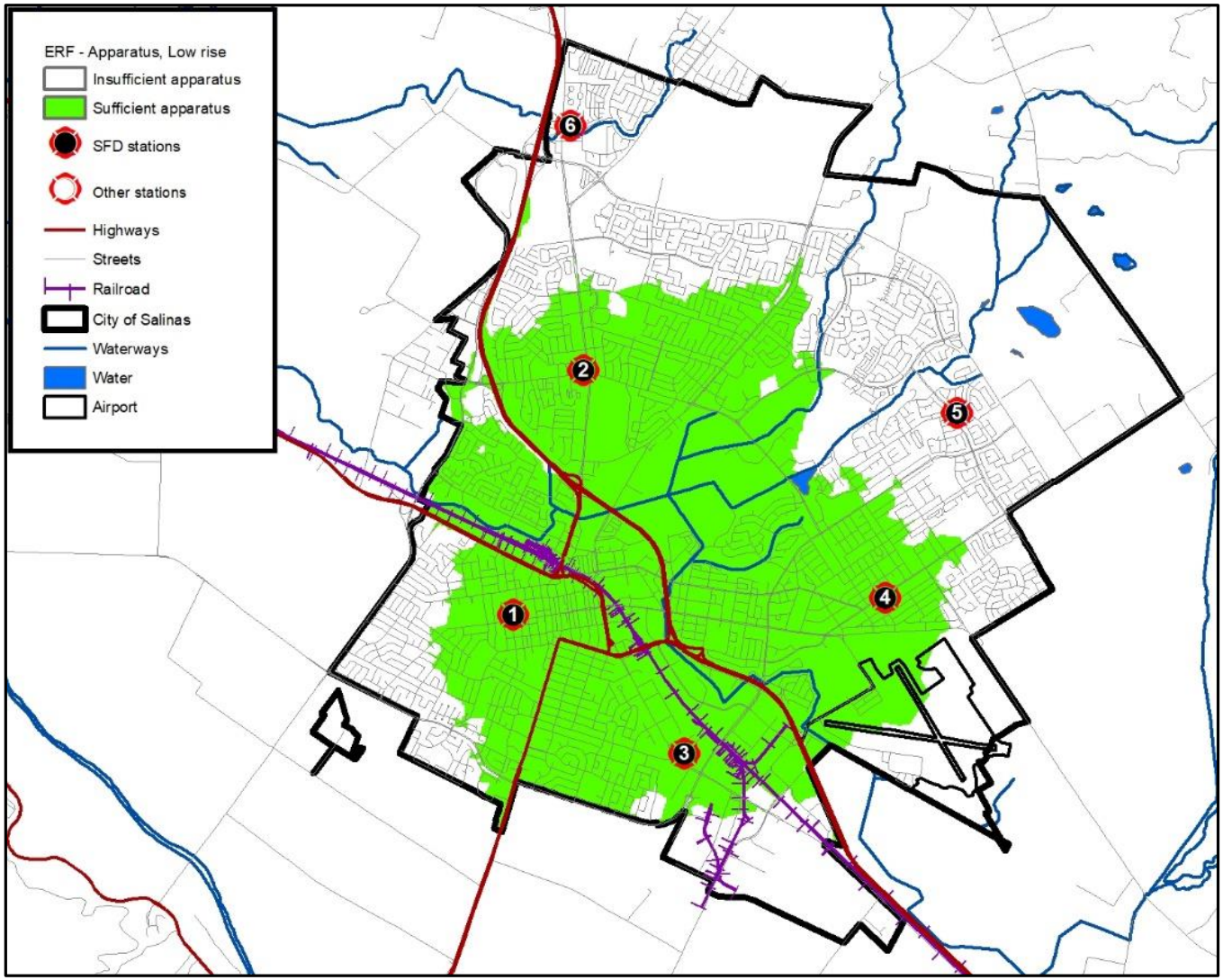
Historic System Performance - Effective Response Force

Firefighters



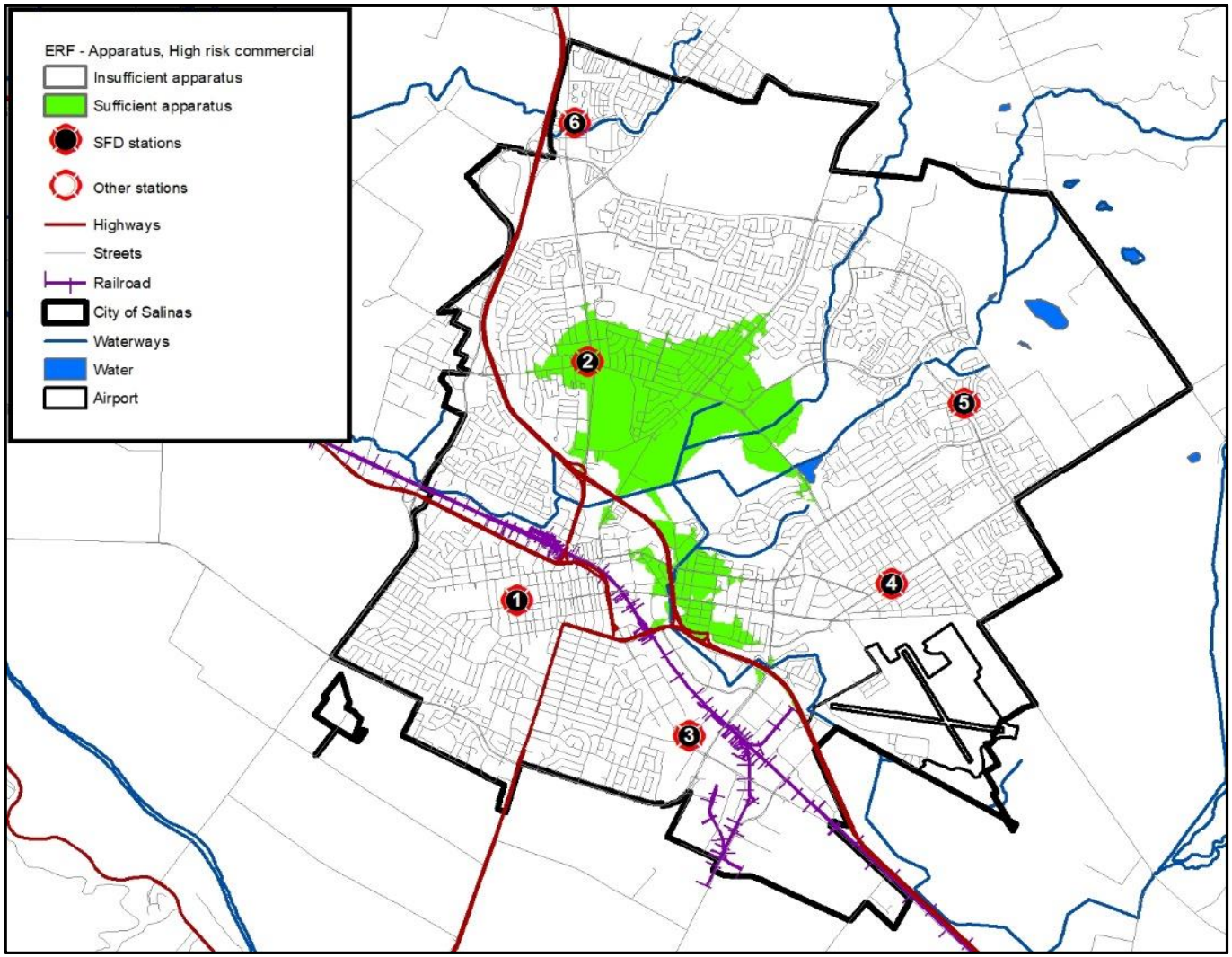
Historic System Performance - Effective Response Force

Apparatus
Low rise
fire



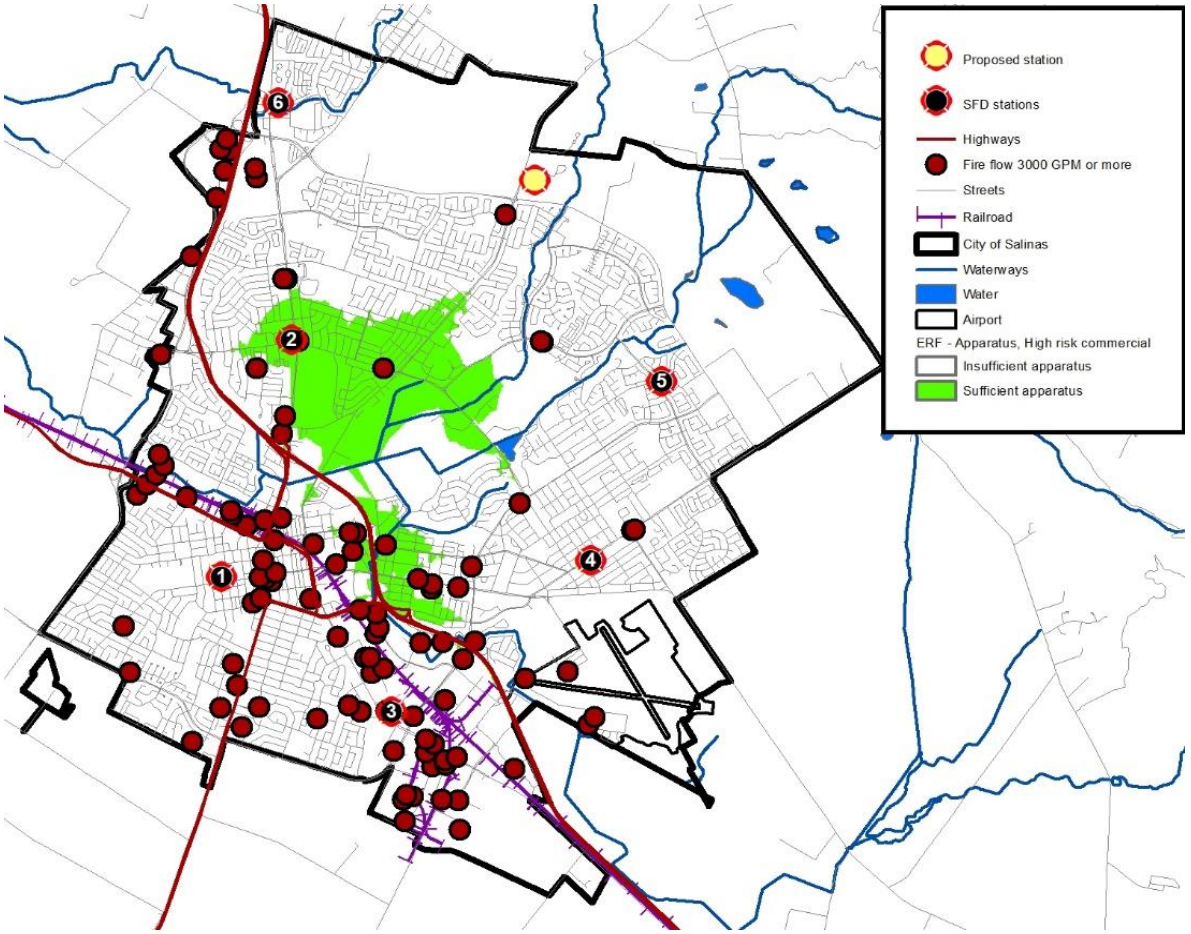
Historic System Performance - Effective Response Force

Apparatus
High risk
commercial
fire



Historic System Performance - Effective Response Force

Apparatus
High risk
commercial
fire



EMS

Response time

SFD – 7 minutes 90 seconds 90% of the time

AMR – 8 minutes 10 seconds 90% of the time

First to arrive

SFD – 63 percent of the time

AMR – 37 percent of the time

Concurrency

Concurrent Incidents	2016	2017	2018
1	6,824	6,573	6,979
2	4,205	4,352	4,401
3	1,560	1,606	1,523
4	435	435	368
5	90	112	69
6	25	35	13
7	8	9	3
8	3	3	0
9	1	0	0

Concurrency

Concurrent Unit Responses	2016	2017	2018
1	7,392	7,583	7,728
2	4,712	4,841	5,199
3	2,136	2,108	2,632
4	1,032	1,035	1,447
5	523	542	747
6	285	295	399
7	159	134	227
8	75	74	101
9	39	38	47
10	24	12	19
11	7	4	12

Recommendations – Improvement Goal A

Adopt response performance goals that are achievable

Incident Interval	Performance Goal
9-1-1 call answer time (time from first ring to answer)	Within 15 seconds, 95% of the time
Call process time (time from acceptance at the dispatch center until notification of response units)	Within 64 seconds, 90% of the time
Turnout time (time from notification of response personnel until the initiation of movement towards the incident) Fire incidents Emergency medical incidents Other emergency incidents	 Within 80 seconds, 90% of the time Within 60 seconds, 90% of the time Within 80 seconds, 90% of the time
First unit travel time (time from initiation of response until arrival of the first unit at the incident)	Within 4 minutes, 90% of the time
First unit response time (time from dispatch until arrival of the first unit at the incident) Fire incidents Emergency medical incidents Other emergency incidents	 Within 5 minutes, 20 seconds, 90% of the time Within 5 minutes, 90% of the time Within 5 minutes, 20 seconds, 90% of the time
Full effective response force travel time (Time from dispatch until all units initially dispatched arrive at the incident. Response resources needed for a moderate risk building fire are used for the evaluation.)	Within 9 minutes, 20 seconds, 90% of the time

Recommendations – Improvement Goal B

Improve the collection and analysis of incident data

1. Ensure all needed data is being collected
2. Improve data retrieval capability
3. Integrate data with GIS tools
4. Provide regular management reports

Recommendations – Improvement Goal C

Implement community risk reduction strategies

- Conduct a detailed review to determine types and locations of frequently occurring emergencies
- Develop strategies to reduce these occurrences
- Identify other risks that should be mitigated

Recommendations – Improvement Goal D

Improve SFD unit turnout times

- Reduce obstacles to quick turnout in fire stations
- Monitor and enforce crew performance standards

Recommendations – Improvement Goal E

Limit the Use of Traffic “Calming” and Other Measures that Increase Travel Time

- Determine priority response routes that should not receive traffic calming features
- Consider alternate designs that impact travel time less

Recommendations – Improvement Goal F

Update traffic signal pre-emption equipment

- Install up to date signal pre-emption equipment at all signal-controlled intersections

Recommendations – Improvement Goal G

Add additional response units during periods of high incident activity

Station	Current Units Day	Current Units Night	Current Probability of Wait—Day	Current Probability of Wait—Night	Proposed Units Day	Proposed Units Night	Proposed Probability of Wait—Day	Proposed Probability of Wait—Night
1	2	2	2.9%	1.0%	2	2	2.9%	1.0%
2	1	1	16.8%	10.2%	2	1	1.3%	10.2%
3	1	1	9.6%	4.9%	1	1	9.6%	4.9%
4	1	1	11.8%	6.5%	2	1	0.7%	6.5%
5	2	2	0.4%	0.1%	2	2	0.4%	0.1%
6	1	1	12.7%	6.8%	2	1	0.8%	6.8%
Total	**8**	**8**		**Total**	**11**	**8**		

3 additional small 2-person staffed units needed from 9:00 am to 9:00 pm

Recommendations – Improvement Goal H

Improve the efficiency of response to emergency medical incidents

- Implement emergency medical dispatch triage protocols
- Differentiate what is dispatched based on the severity of the medical emergency

Recommendations – Improvement Goal I

Address administrative and support needs

- Conduct a workload analysis at the Administrative and Support staffing levels to quantify needs and gaps.

Recommendations – Improvement Goal J

Plan for the addition of a staffed fire station as the North of Boronda future growth area develops

- Currently identified future station site will provide good coverage of the to be developed area
- The station should be built as part of the infrastructure development
- The station should be staffed when people begin to occupy the new buildings

Questions/Discussion