

Standards of Coverage Assessment

City of Fremont

Presented on September 15, 2020



CITYGATE ASSOCIATES, LLC
FIRE & EMERGENCY SERVICES

The Business of Better Government



Fire Service Delivery Policy Choices

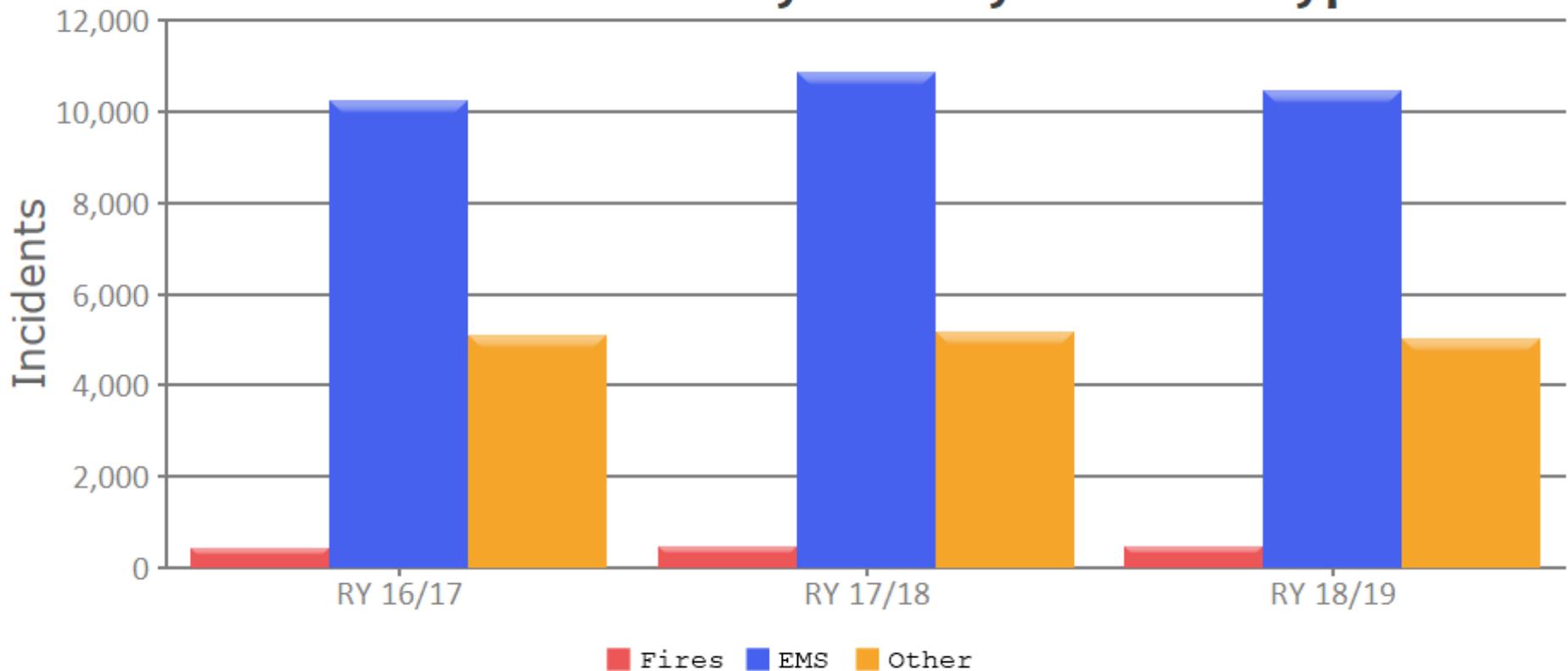
- There are no mandatory federal or state regulations directing the level of fire service staffing, response times, or outcomes. Thus, communities have the level of fire services they choose to “purchase” and can afford.
- The body of regulations on fire services state that *if fire services are provided at all, it must be with the safety of the firefighters and public in mind.*
- Deployment is about the **speed** and **weight** of the response:
 - **Speed** = single neighborhood-based units
 - **Weight** = multiple units amassing quickly enough to stop serious fires

Setting Service Level Goals

- Time-temperature curve in building fires
- EMS survivability in full arrest
- Suppress other outdoor fires before they spread to buildings and wildland areas
- Keep small fires small
- Save people with potentially fatal medical emergencies
- This study deals with response time goals for fires and technical rescue
- Policy goal – Provide adequate response times *to all similar risk and population density neighborhoods*

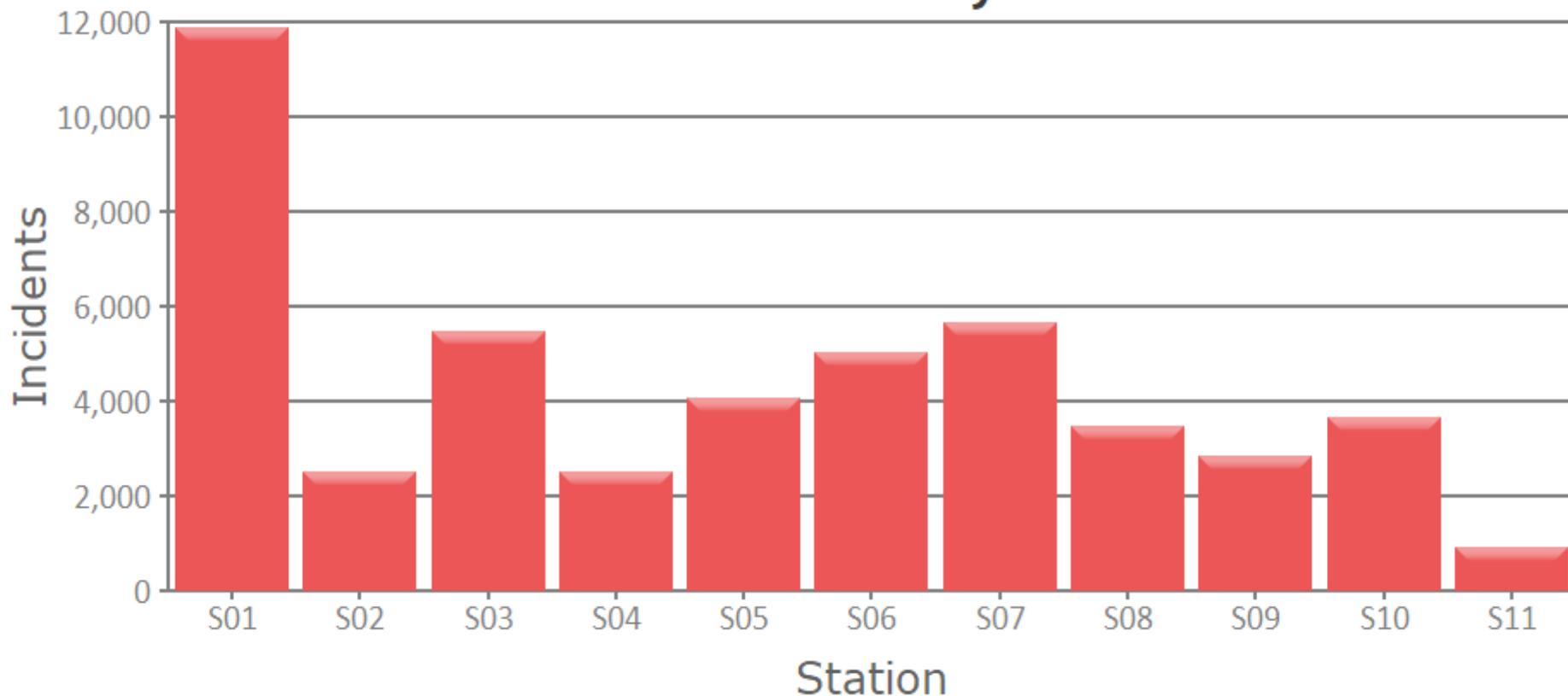
Service Demand by Year by Incident Type

Number of Incidents by Year by Incident Type



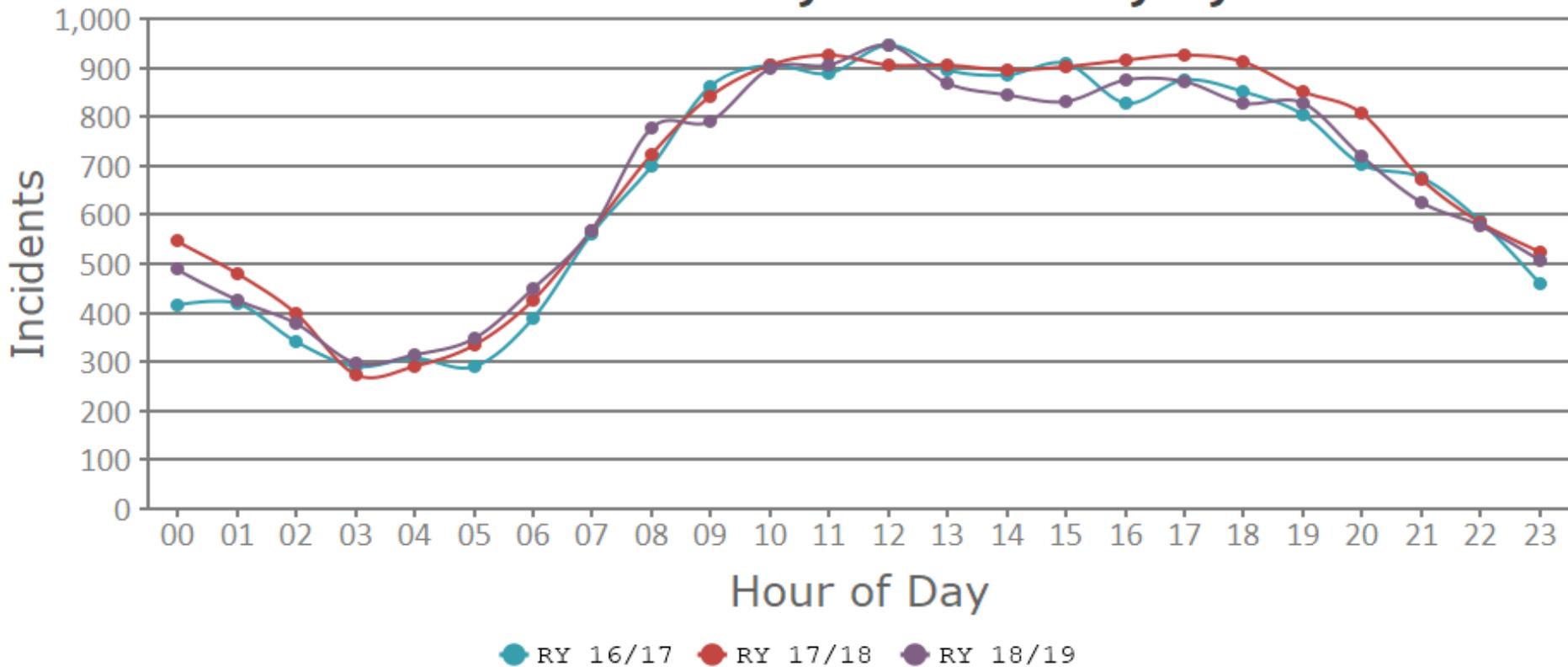
Service Demand by Station – RY 16/17 through RY 18/19

Number of Incidents by Station



Service Demand by Hour of Day by Year

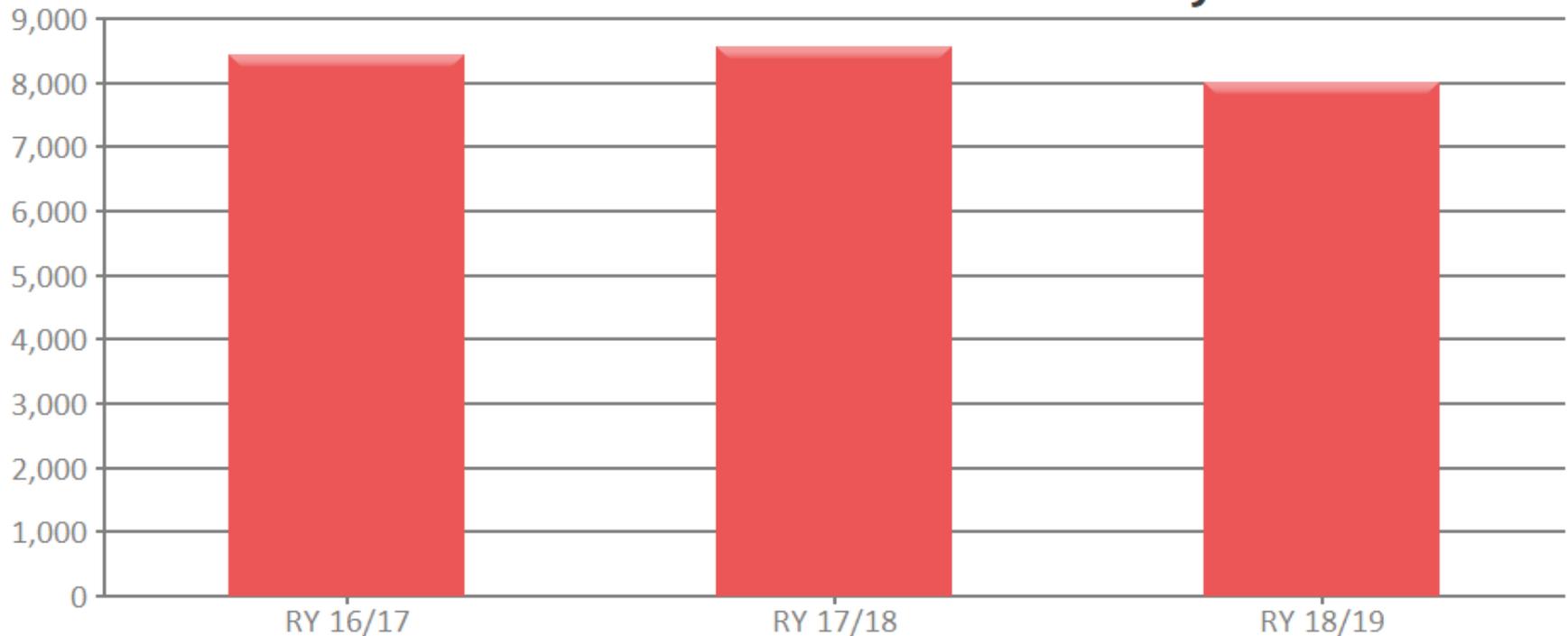
Number of Incidents by Hour of Day by Year



Simultaneous Incident Activity

- 1 or more simultaneous incidents 50.28 percent
- 2 or more simultaneous incidents 16.96 percent
- 3 or more simultaneous incidents 4.50 percent

Number of Simultaneous Incidents by Year



Unit Utilization Per Hour – Engines

Hour	E51	E53	E58	E56	E57	E55	E60	E54	E59	E52
00:00	7.75%	4.83%	3.26%	3.60%	5.08%	7.81%	3.47%	3.15%	3.29%	1.85%
01:00	8.65%	5.06%	9.79%	4.47%	5.55%	5.25%	3.34%	2.74%	3.65%	2.11%
02:00	6.76%	4.72%	4.25%	3.62%	3.98%	4.92%	3.09%	2.48%	2.88%	6.45%
03:00	5.62%	3.89%	3.06%	3.05%	2.84%	2.85%	3.31%	1.43%	2.55%	2.78%
04:00	4.98%	3.98%	3.37%	2.92%	2.36%	3.68%	3.46%	2.02%	1.94%	1.48%
05:00	7.79%	4.21%	2.96%	4.08%	3.92%	3.85%	3.89%	2.92%	1.22%	2.92%
06:00	7.36%	6.43%	2.87%	3.23%	4.40%	4.85%	3.57%	2.74%	3.14%	3.54%
07:00	8.27%	5.95%	9.25%	6.18%	3.63%	5.52%	6.79%	4.26%	3.21%	4.34%
08:00	13.03%	8.11%	8.08%	7.40%	6.82%	7.51%	6.36%	6.53%	3.91%	3.88%
09:00	12.33%	9.22%	7.07%	5.87%	7.51%	5.99%	6.04%	5.53%	4.82%	4.46%
10:00	14.66%	10.88%	8.20%	7.78%	7.44%	5.86%	6.12%	7.66%	7.81%	4.57%
11:00	14.79%	9.58%	8.61%	7.10%	8.40%	5.52%	5.36%	6.04%	9.44%	6.03%
12:00	14.70%	11.66%	8.55%	7.70%	10.78%	9.97%	6.61%	8.33%	5.54%	5.32%
13:00	13.51%	8.76%	8.52%	7.55%	7.85%	8.30%	6.50%	8.21%	5.96%	4.36%
14:00	25.79%	10.04%	12.86%	11.97%	9.57%	6.42%	6.39%	6.20%	5.99%	8.40%
15:00	14.49%	9.14%	8.88%	7.79%	6.91%	5.63%	6.20%	4.36%	7.78%	4.83%
16:00	14.27%	9.98%	9.19%	10.39%	10.93%	9.68%	7.72%	4.80%	5.37%	6.35%
17:00	14.73%	11.99%	8.43%	10.61%	12.13%	8.23%	7.17%	9.93%	6.27%	6.70%
18:00	13.05%	10.28%	7.90%	13.12%	7.79%	7.34%	7.70%	6.23%	5.47%	6.92%
19:00	21.06%	11.40%	6.94%	7.61%	6.79%	8.09%	6.62%	7.30%	3.60%	4.28%
20:00	12.85%	9.46%	6.97%	7.03%	8.79%	8.08%	8.93%	4.87%	4.24%	4.22%
21:00	11.42%	8.30%	6.47%	6.29%	5.25%	7.02%	10.88%	6.56%	6.88%	5.53%
22:00	12.23%	5.91%	5.45%	6.56%	6.60%	6.93%	5.94%	4.06%	3.09%	2.06%
23:00	9.18%	7.00%	6.42%	6.42%	4.80%	7.61%	5.49%	4.06%	2.72%	3.16%



Current Deployment Goals

- Council-adopted goal in 2011 General Plan
- Overall policy – *Provide an adequate level of fire equipment and personnel to protect the City in accordance with the adopted SOC*
- 6:40-minute response time below the Toe of the Hill (TOH)
- Clock start time not defined

National Best Practice Recommendations

Dispatch:	1:30 (NFPA)
Turnout:	2:00 (Citygate)
Travel:	4:00 to 8:00 (4:00/8:00 NFPA)
Total Response:	7:30 to 11:30 (NFPA/Citygate)

Response Performance

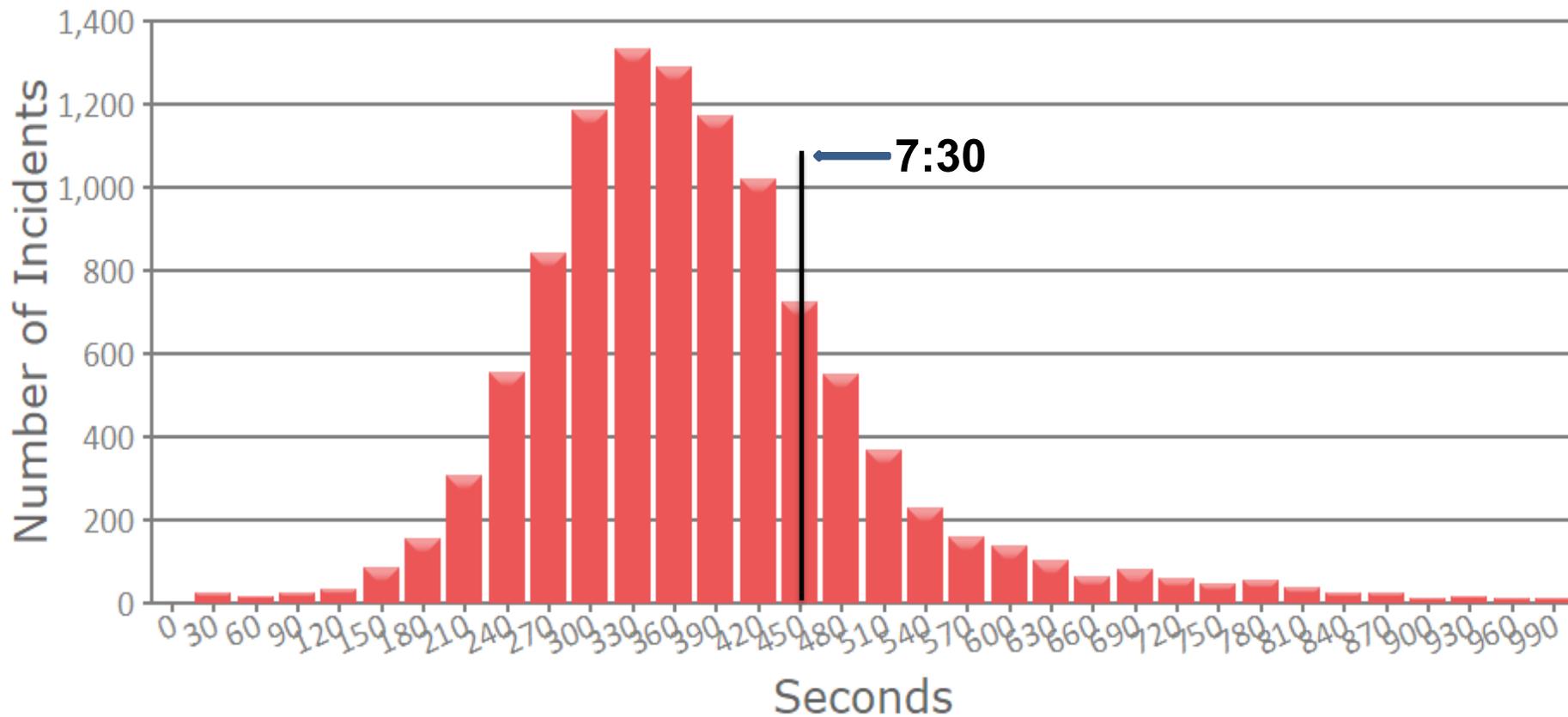
Response Component	2019	Best Practice Goal
Dispatch Process	1:35	1:30
Crew Turnout	2:13	2:00
First-Unit Travel	5:59	4:00
Call Received to First-Unit Arrival	8:38	7:30

Percent of Incidents Reached by 4th Minute of Travel by Year

Department-wide	2004	RY 16/17	RY 17/18	RY 18/19
Incidents Reached by Fourth Minute of Travel	79%	69.4%	67.9%	62.7%

Call to Arrival Total Response Time

Fractile for Incidents Call to 1st Arrival



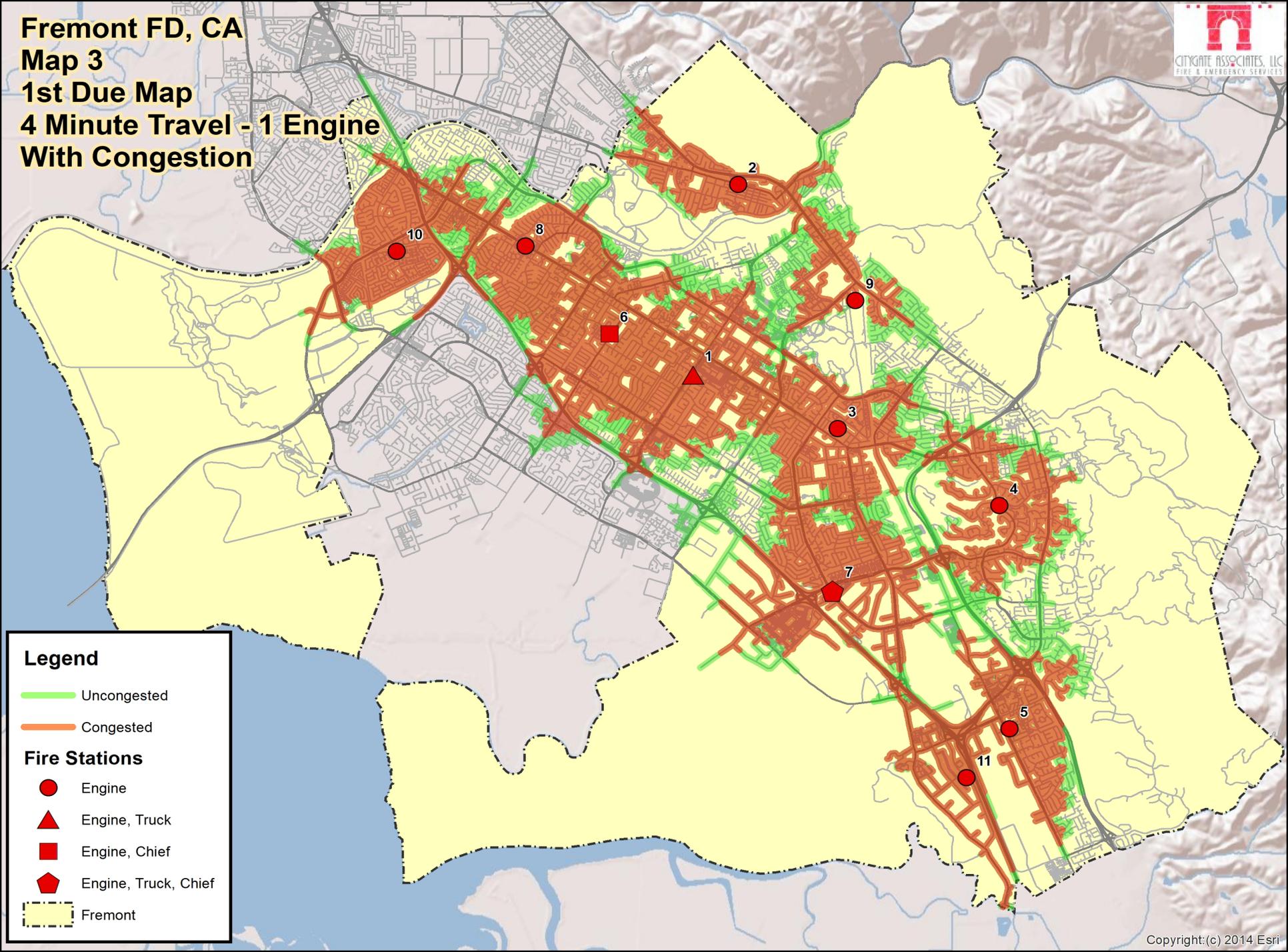
Fremont FD, CA

Map 3

1st Due Map

4 Minute Travel - 1 Engine

With Congestion



Legend

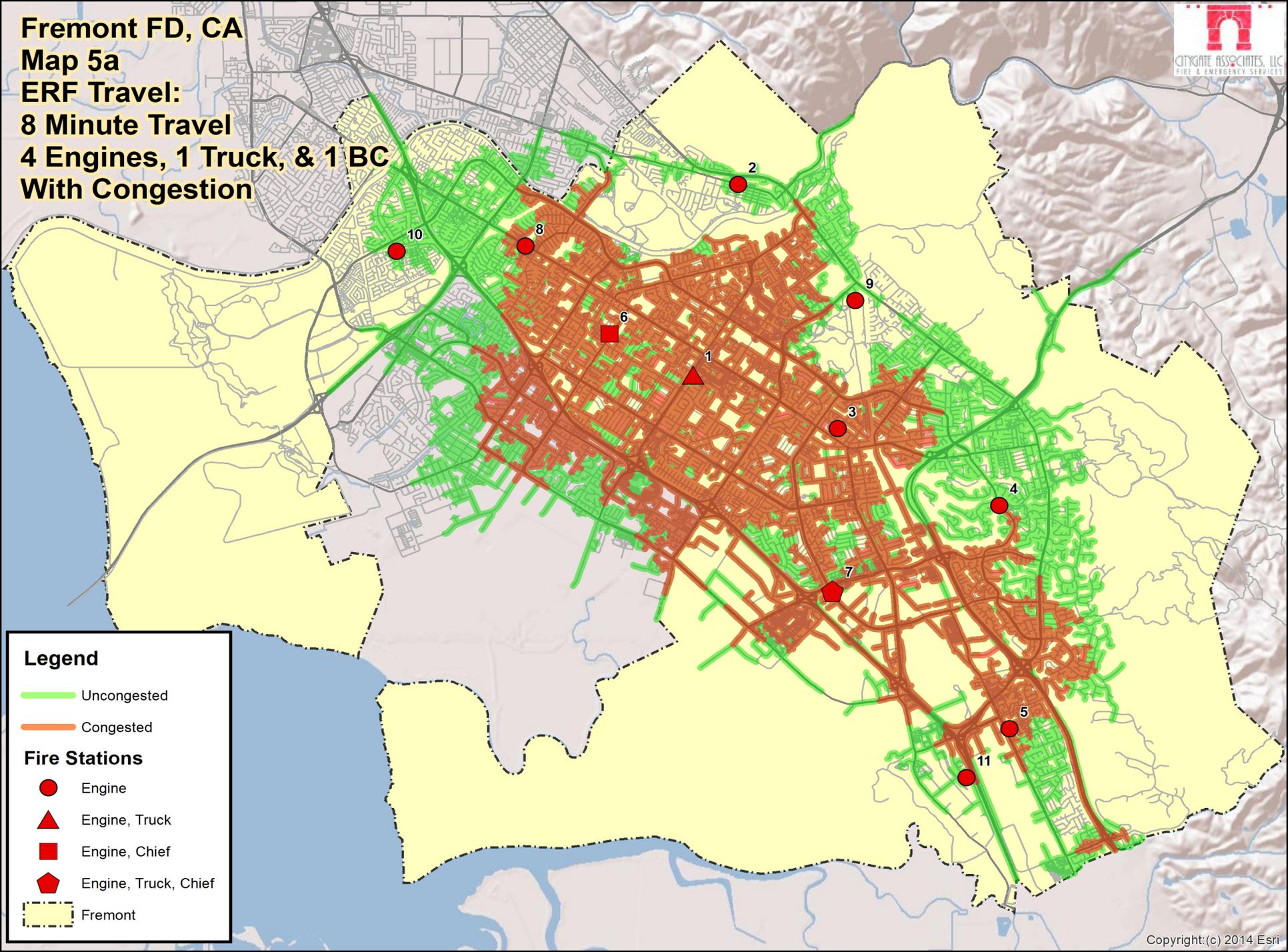
- Uncongested
- Congested

Fire Stations

- Engine
- Engine, Truck
- Engine, Chief
- Engine, Truck, Chief

Fremont

Fremont FD, CA
Map 5a
ERF Travel:
8 Minute Travel
4 Engines, 1 Truck, & 1 BC
With Congestion



Legend

- Uncongested
- Congested

Fire Stations

- Engine
- Engine, Truck
- Engine, Chief
- Engine, Truck, Chief
- Fremont

Fremont FD, CA

Map 5b

ERF Travel:

8 Minute Travel

4 Engines, 1 Truck, & 1 BC

With Congestion

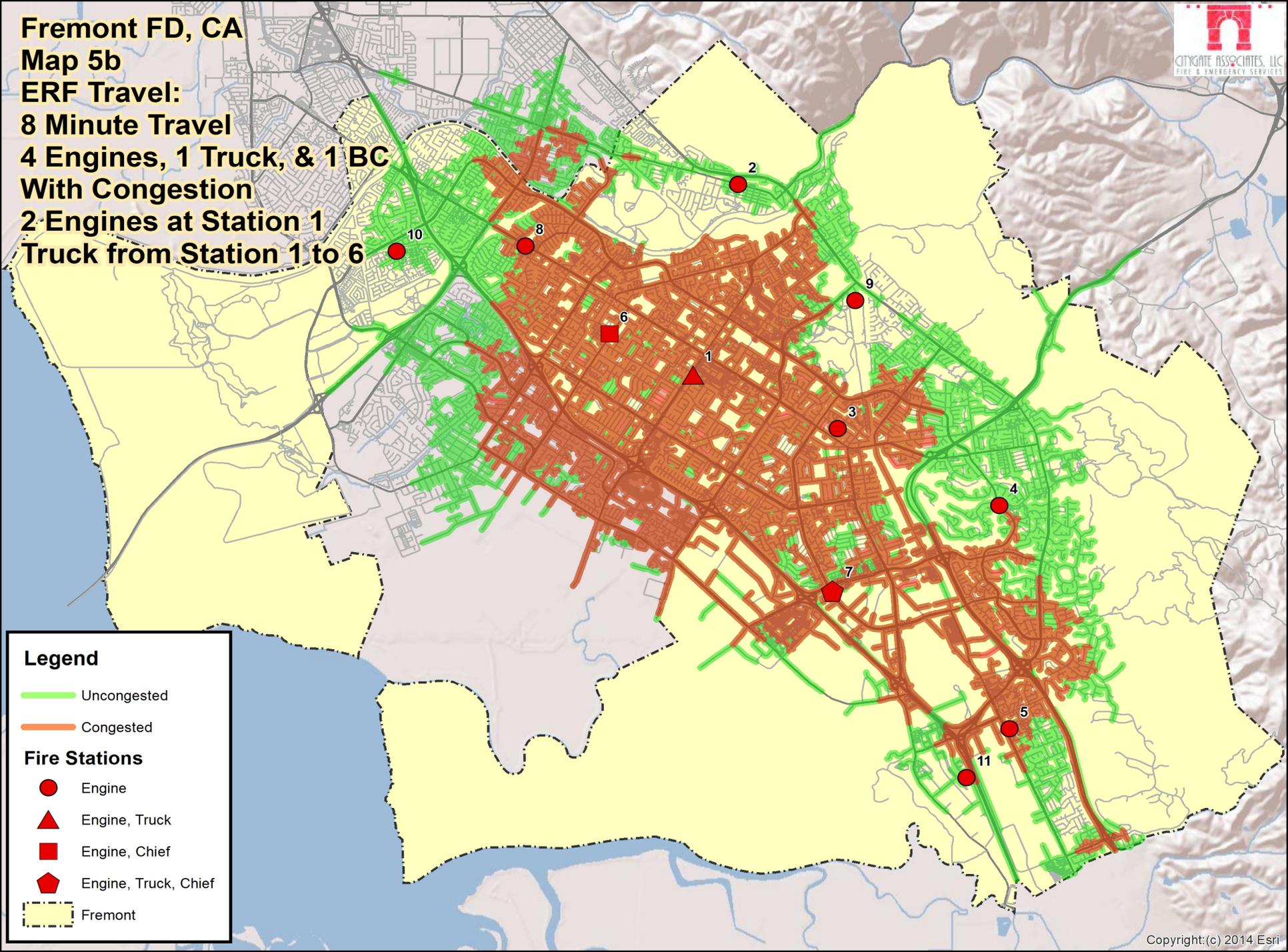
2 Engines at Station 1

Truck from Station 1 to 6

Legend

- Uncongested
- Congested

Fire Stations- Engine
- Engine, Truck
- Engine, Chief
- Engine, Truck, Chief
- Fremont

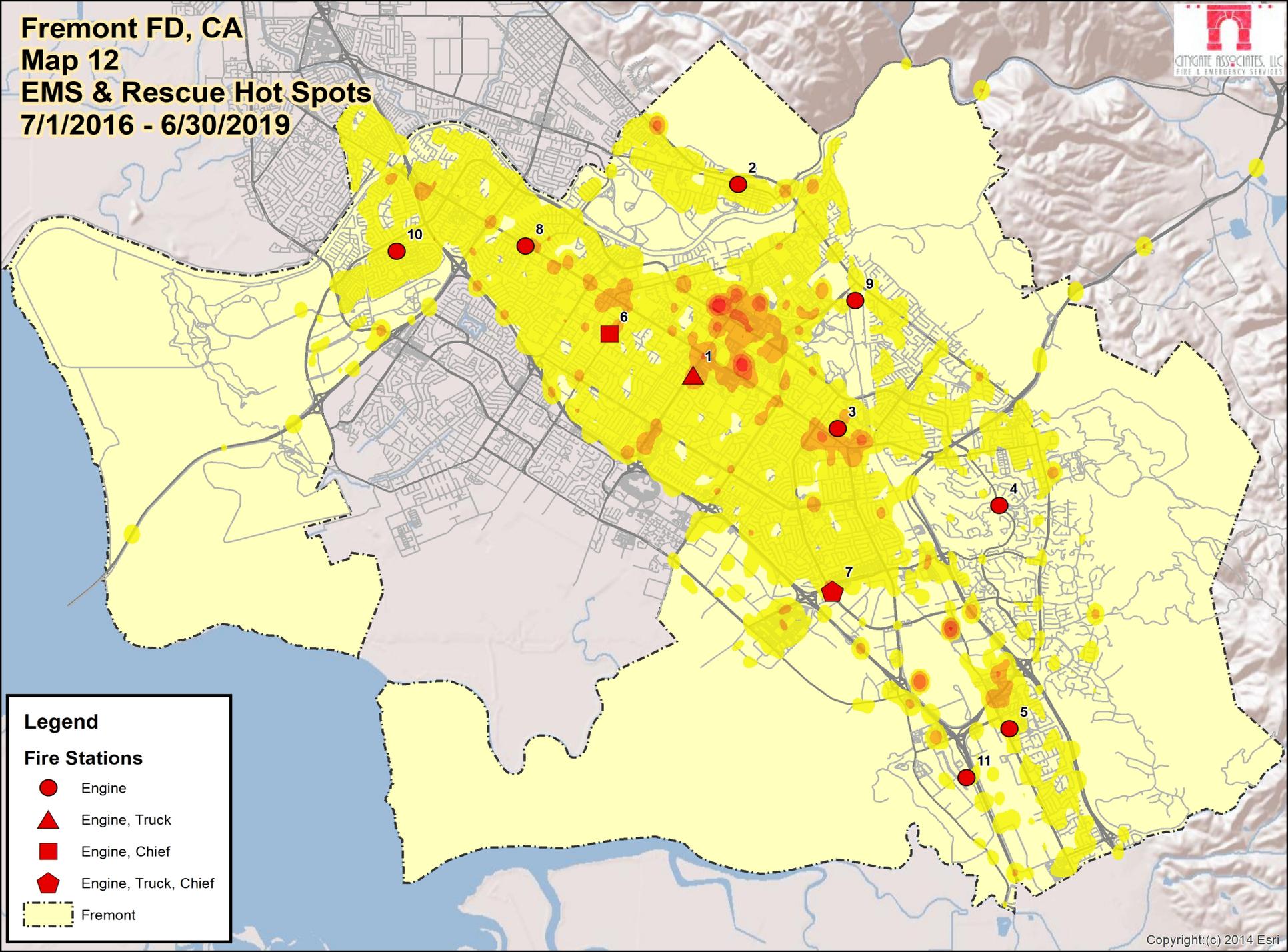


Fremont FD, CA

Map 12

EMS & Rescue Hot Spots

7/1/2016 - 6/30/2019



Legend

Fire Stations

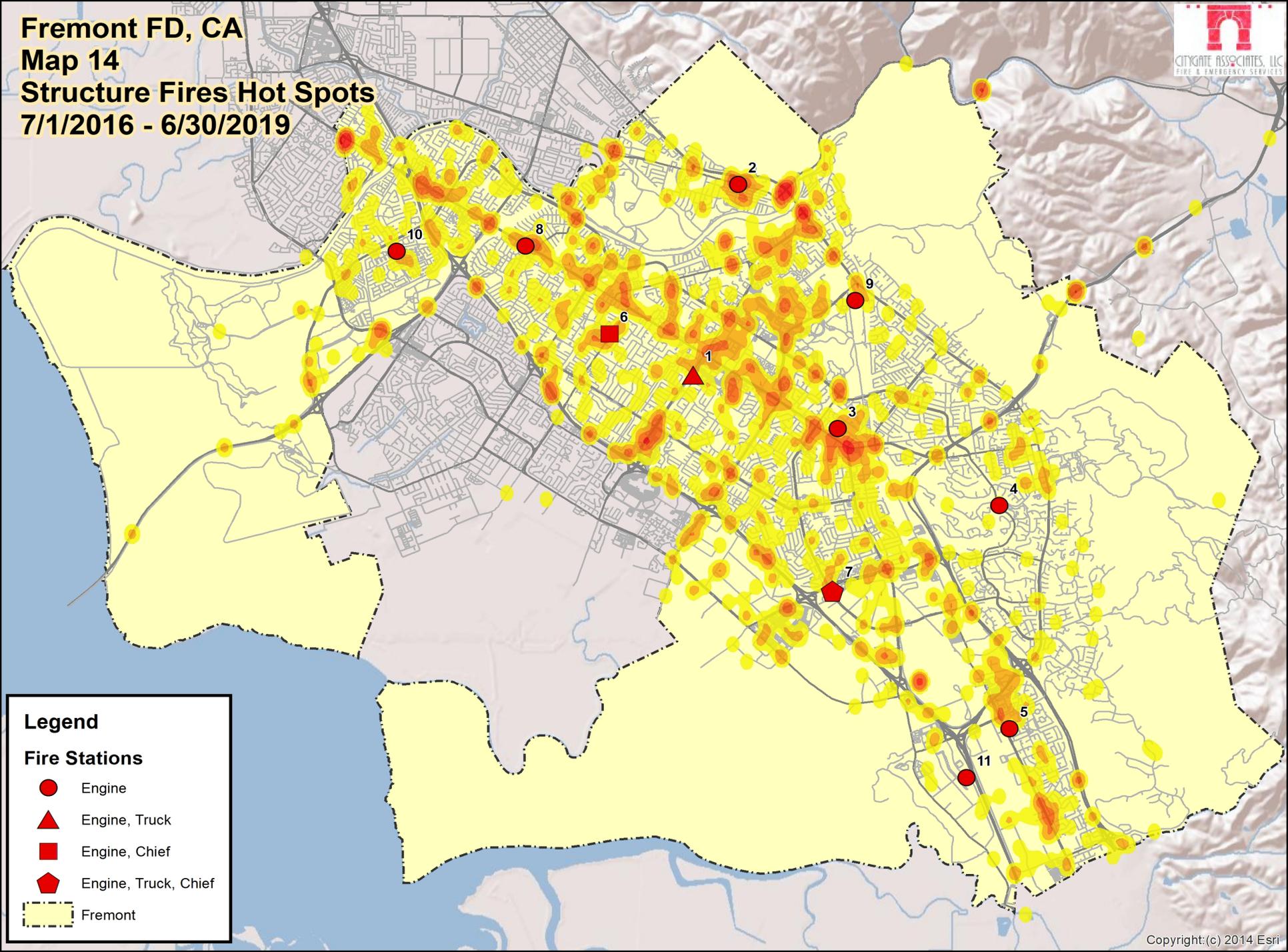
- Engine
- ▲ Engine, Truck
- Engine, Chief
- ⬠ Engine, Truck, Chief
- ⬡ Fremont

Fremont FD, CA

Map 14

Structure Fires Hot Spots

7/1/2016 - 6/30/2019



Legend

Fire Stations

- Engine
- ▲ Engine, Truck
- Engine, Chief
- ⬠ Engine, Truck, Chief
- Fremont

Deployment Findings

- Dispatch and crew turnout times are good
- Travel times are longer than desired due to simultaneous calls, the road network, and traffic congestion
- Adding more fire stations is not cost effective
- Add unit capacity to stabilize response time
- Need to adopt an updated and comprehensive response time policy

Significant Recommendations

- Given ladder truck coverage and high unit workloads in and near Station 1, a two-part deployment change is needed:
 - Relocate the Station 1 ladder truck to Station 6
 - Add a Paramedic fire company with three personnel to Station 1, increasing the Citywide coverage from 13 to 14 companies

Adopt an Updated First-Due Unit Response Time Policy

- **Distribution of Fire Stations:** To treat pre-hospital medical emergencies and control small fires, the first-due unit should arrive within 7:30 minutes, 90 percent of the time from the receipt of the 9-1-1 call at ACRECC. This equates to a 90-second dispatch time, a 2:00-minute company turnout time and a 4:00-minute travel time

Adopt a Multiple-Unit (First Alarm) Response Time Policy

- To confine building fires near the room of origin, keep vegetation fires under one acre in size, extricate trapped victims within 30:00 minutes, and treat multiple medical patients at a single incident, a multiple-unit ERF should arrive within 11:30 minutes from the time of 9-1-1 call receipt at ACRECC 90 percent of the time. This equates to a 90-second dispatch time, 2:00-minute company turnout time, and 8:00-minute travel time

Next Steps

- Review the content, findings, and recommendations of this report
- Adopt revised response performance goals as recommended
- Direct staff to return with a travel time improvement plan within 180 days and, as needed, modify an upcoming budget to implement the first phase

Improvements Underway

- Two unit stations (1 and 7) not sent together for training
- Microsoft Teams used more extensively for training and meetings to keep companies in district
- Quality improvement to monitor on-scene times for building fires
- Busiest units training in the morning (off peak hours)
- Power BI dashboard providing metrics in near real time
- Working with IT and Public Works on a next generation traffic pre-emption pilot project along Fremont Boulevard

Discussion

