Seattle Fire Department

2013

Emergency Response Report

Department Mission

The mission of the Seattle Fire Department is to save lives and protect property through emergency medical service, fire and rescue response and fire prevention. We respond immediately when any member of our community needs help with professional, effective and compassionate service.

Message from the Fire Chief

We strongly believe in community involvement. With 33 fire stations located throughout the city, we have a presence in every neighborhood.

Our value to the community is measured by the service we can provide. Every day our firefighters and paramedics strive to provide the best emergency and medical services possible to the citizens of Seattle.

Gregory M. Dean
Fire Chief

Department Overview

The Seattle Fire Department has existed as a fire department within the State of Washington since October 17, 1889, when the Seattle City Council passed an Ordinance No. 1212. The services provided by the Seattle Fire Department include:

- Critical fire suppression services and emergency medical care
- Technical teams. This includes technical and heavy rescue, dive rescue, tunnel rescue, marine fire response, and hazardous materials (HazMat) response.
- Fire prevention and public education.
- Fire investigation.
- Mutual aid response to neighboring jurisdictions.

SFD Personnel Profile (2013)

- Uniformed Personnel –974
- On-Duty Strength-207
- Department Chiefs-38
- Firefighter/Emergency Medical Technicians-974
- Firefighter/Paramedics-72
- Non-uniformed (Civilian) Personnel– 84

City of Seattle Profile

- Population-652,405 (2013 Census estimate)
- Population Density-7,775 square mile
- Land Area-83.9 square miles

Seattle Fire Department Emergency Response Totals

	2009	2010	2011	2012	2013
Basic Life Support (BLS)	44,373	45,712	45,822	49,696	53028
% Increase/Decrease	-0.5%	3%	0.2%	8%	6.70%
Advanced Life Support (ALS)	18,866	18,395	18,773	19,386	18920
% Increase/Decrease	-4.6%	-2.5%	2.1%	3%	-2.40%
EMS	63,239	64,107	64,595	69,082	71948
% Increase/Decrease	-1.8%	1.4%	0.8%	7%	4.10%
Fire	14,551	13,395	12,709	12,651	13388
% Increase/Decrease	-1.9%	-7.9%	-9.8%	0%	5.80%
Total	77,790	77,502	77,304	81,733	85336
% Increase/Decrease	-1.9%	-0.4%	-0.3%	6%	4.40%

House Bill 1756

Substitute House Bill 1756 (SHB 1756) was passed into law during the 2005 legislative session. This law mandates certain response criteria be established and measured by certain fire departments across the State of Washington beginning in 2007 with an analysis of responses in 2006. The requirement was passed and is now the law for all substantially career fire departments.

The purpose of this law is to report to the Governing Body of each fire jurisdiction, as well as to the citizens of any given area how the fire department is doing in meeting its established emergency response standards. These standards take into consideration a number of response types:

A) Fire Suppression

B) Emergency Medical Services-Basic Life Support (BLS)

C) Emergency Medical Services-Advanced Life Support (ALS)

D) Special Operations (i.e. Hazardous Materials response and Technical Rescue response)

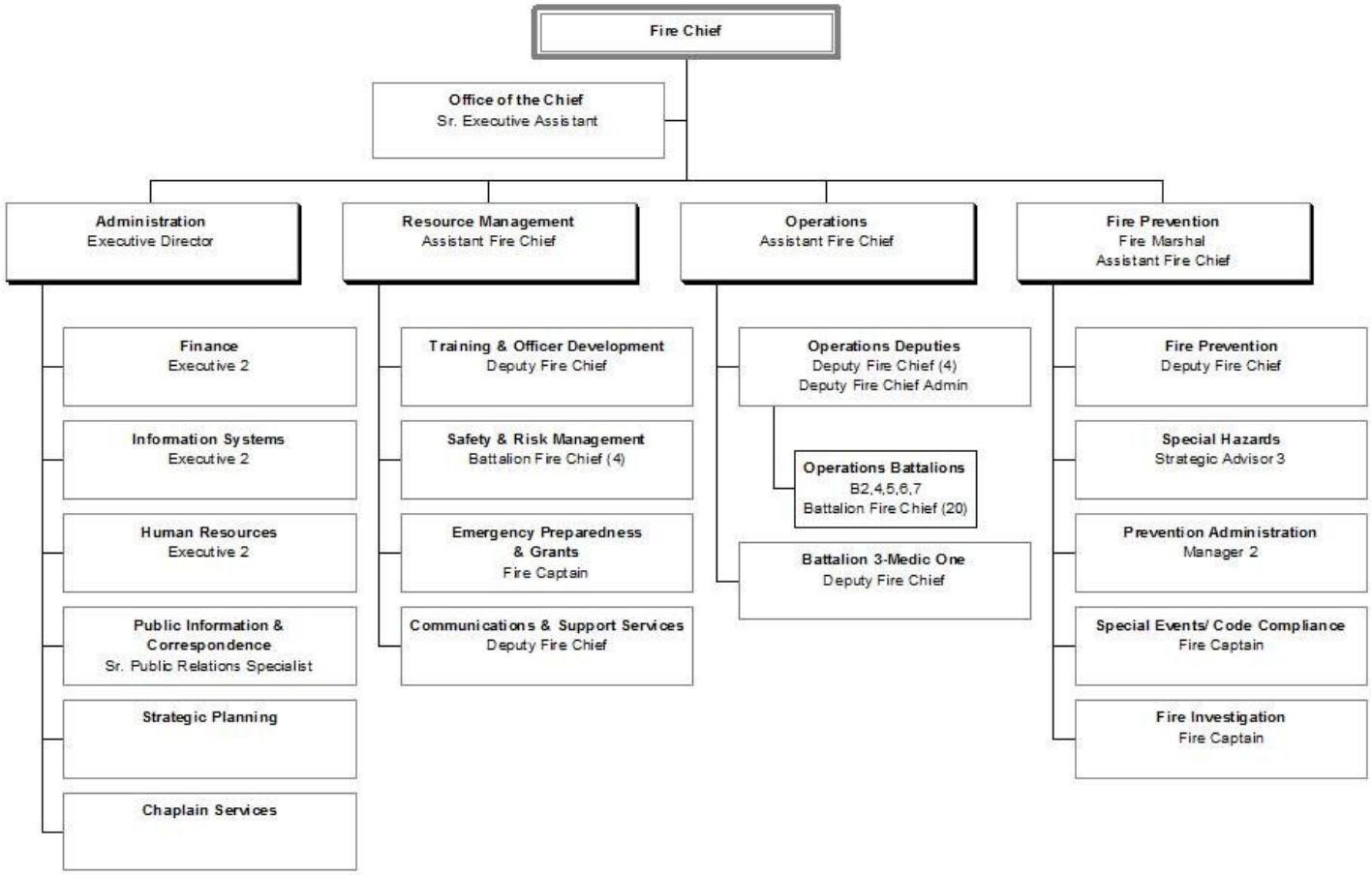
E) Aircraft rescue and firefighting

F) Marine rescue and firefighting

Department Organization Chart

The Seattle Fire Department is organized into four major divisions: Administration , Resource Management, Operations and Fire Prevention.

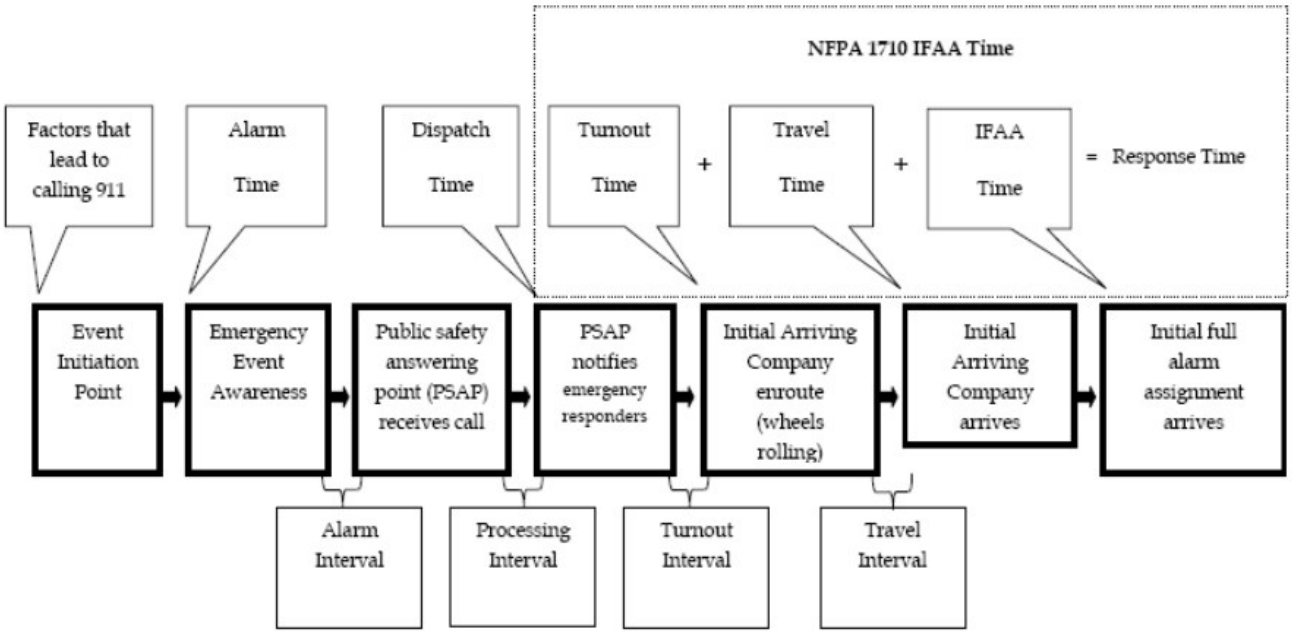
SEATTLE FIRE DEPARTMENT
2013 ORGANIZATIONAL CHART



Cascade of Events

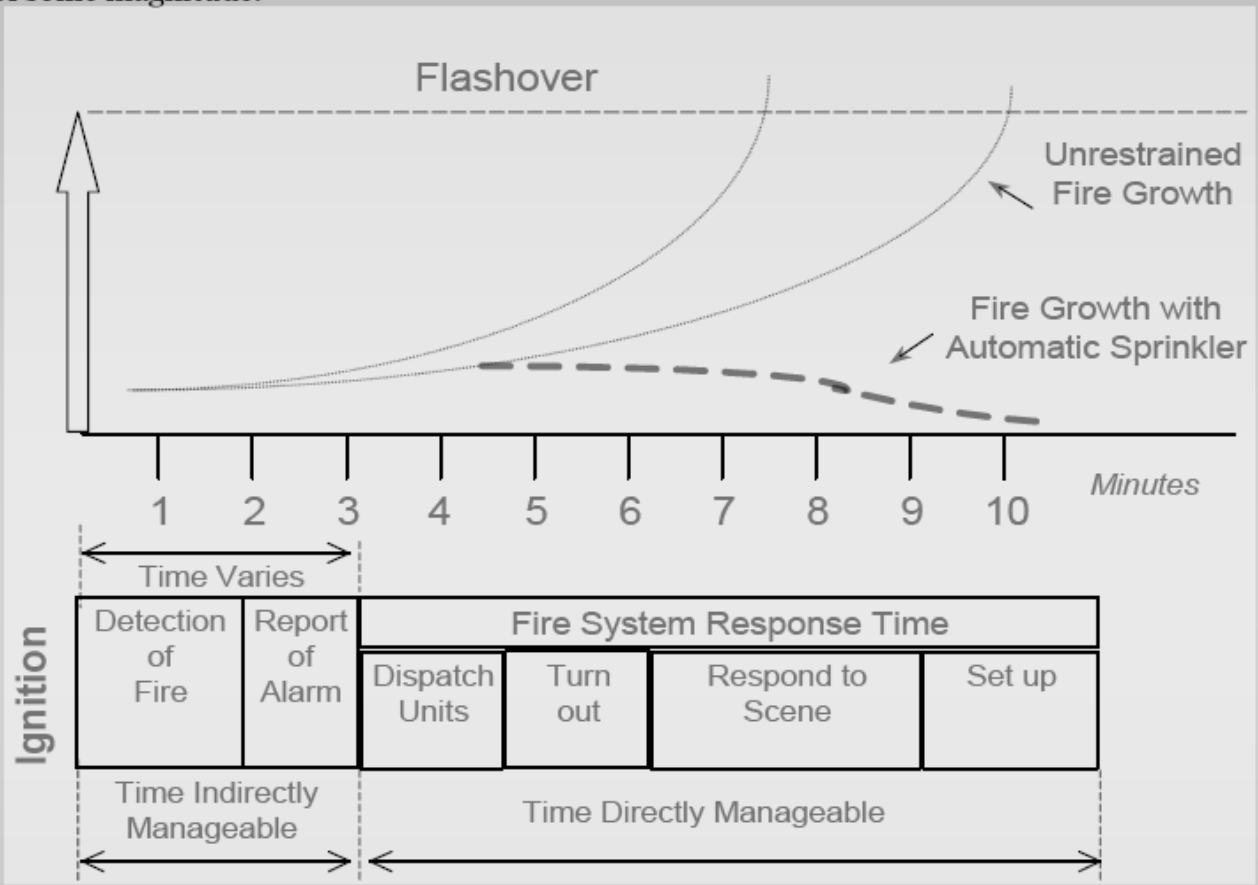
The Commission on Fire Accreditation International (CFAI) has defined response time elements as a cascade of events. This cascade is similar to that used by the medical community to describe the events leading up to the initiation, mitigation, and ultimate outcome of a cardiac arrest. It is imperative to keep in mind that certain intervals described, such as turnout and travel time, can be directly influenced by the fire service via station locations and design, staffing levels, as well as local rules and procedures for response. Others factors, such as the alarm interval, can be influenced indirectly through public education and engineering initiatives. The fire service can also influence the call-processing interval through its ability to define standards and compel performance by its dispatch centers.

Cascade of Events – General Overview



Time Temperature Standard

The "time-temperature curve" standard in the figure below is based on data from the National Fire Protection Association (NFPA) and the Insurance Services Organization (ISO), which have established that a typical point source of ignition in a residential house will "flash over" at some time between 5 and 10 minutes after ignition, turning a typical "room and contents" fire in to a structural fire of some magnitude.



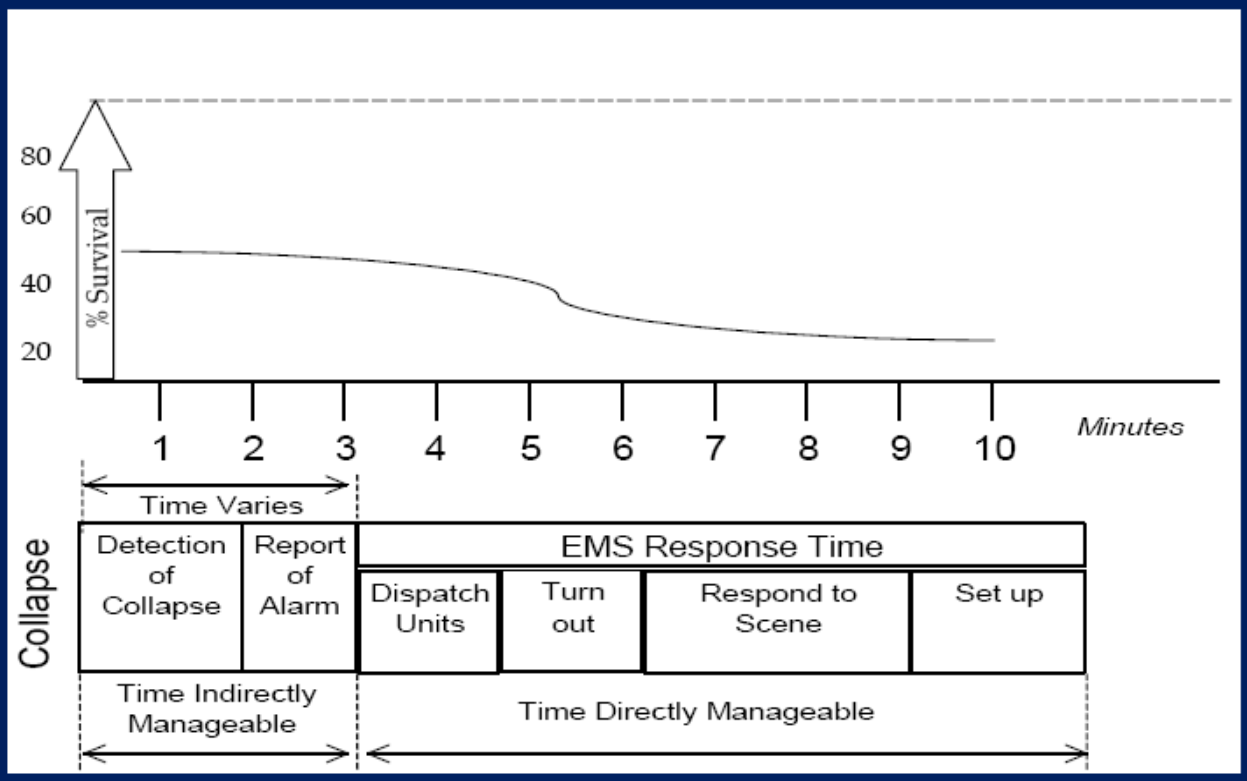
Time Temperature Curve

The utility of the time-temperature curve for fire station placement is limited to a number of factors, including but not limited to the following:

- It does not account for the time required for the existence of a fire to be "discovered" and reported to the fire department via the 911 system.
- The time from ignition to flashover varies widely (5-30 minutes depending on building characteristics); thus it cannot provide a valid basis for the allocation of resources.
- The curve is constantly shifting, given the numerous changes in building construction, built in suppression systems, the increased use of fire resistive materials for furniture, and other items typically found in the interior of occupied buildings.

Cardiac Arrest Survival Standard

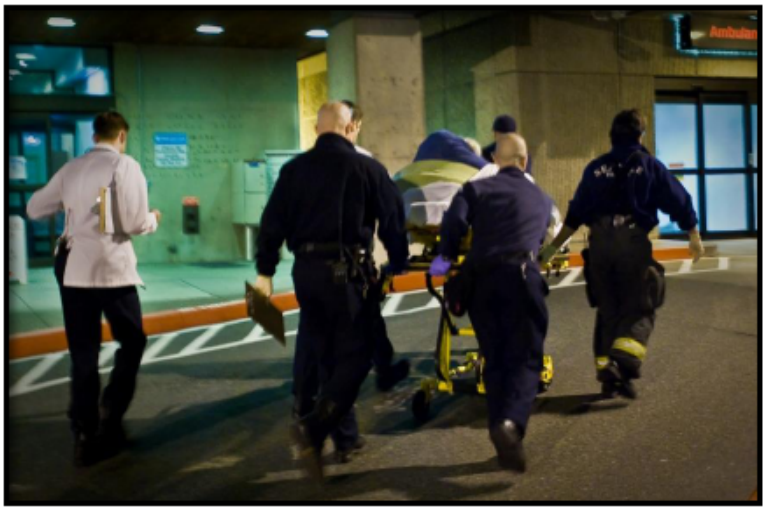
In communities where the fire service is the principal provider of Emergency Medical Services (EMS) first response, the "chain of survival" standard shown in the figure below was developed by the American Heart Association and is often used to provide guidance for distribution of resources. The chain of survival suggests that basic life support (CPR and defibrillation) should be available to the victim of a cardiac arrest within 4 minutes of the event, and that advanced life support (paramedic service) should be available within 8 minutes or less of the event. Early notification, distribution and concentration of emergency response services are thus paramount to successful resuscitation efforts.



Cardiac Arrest Survival

The Golden Hour Standard

In trauma events, the golden hour is the historic benchmark applied to victims with significant critical traumatic injuries. The golden hour reflects the concept that survivability decreases significantly if the patient isn't in the operating room within one hour of receiving a critical traumatic injury.



Seattle Fire Department Response Standards

The Seattle Fire Department Response Standards specify the minimum criteria needed to effectively and efficiently deliver fire suppression, special operations response, and emergency medical services. These Response Standards protect the citizens of Seattle and the occupational safety and health of the Seattle Fire Department employees. National Fire Protection Association Standard 1710- Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, was used as a guideline in the development of the Seattle Fire Department Response Standards.

Call Processing Time

(Phone pickup to first unit assigned)

Seattle Fire Department call processing time standard is 60 seconds, 90% of the time.

Year	Percentage of time call processing time standard met
2013	78%
2012	50%
2011	44%
2010	42%
2009	39%

Turnout Time

(Time unit assigned to en route)

Seattle Fire Department turnout time standard is 60 seconds, 90% of the time.

Year	Percentage of time turnout time standard met
2013	47%
2012	45%
2011	33%
2010	31%
2009	31%

First Arriving Engine at Fire

(En route to on scene)

Seattle Fire Department response time standard for the first arriving engine at a fire response is 4 minutes, 90% of the time.

Year	Percentage of time response time objective met
2013	84%
2012	83%
2011	85%
2010	85%
2009	84%

Seattle Fire Department Response Standards

Full First Alarm Assignment at Fire

(En route to on scene)

Seattle Fire Department response time standard for full first alarm assignment (15 firefighters) when responding to a fire is 8 minutes,90 % of the time.

Year	Percentage of time response time objective
2013	80%
2012	83%
2011	84%
2010	87%
2009	85%

Basic Life Support Unit

(to on scene)

Seattle Fire Department response time standard for the arrival of the first emergency medical unit with 2 EMT's is 4 minutes, 90% of the time.

Year	Percentage of time response time objective met
2013	85%
2012	85%
2011	86%
2010	85%
2009	85%

Advanced Life Support Unit

(to on scene)

Seattle Fire Department response time standard for the arrival of an advanced life support unit with 2 Paramedics is 8 minutes, 90% of the time.

Year	Percentage of time response time objective met
2013	85%
2012	85%
2011	85%
2010	85%
2009	85%

Special Operations Responses

The Seattle Fire Department has developed special operations response Policies and Operating Guidelines (POG) that specify the roles and responsibilities of the fire department and the authorized functions of members responding to incidents that meet the definition of "special operations" in accordance with NFPA 1710, which reads as follows:

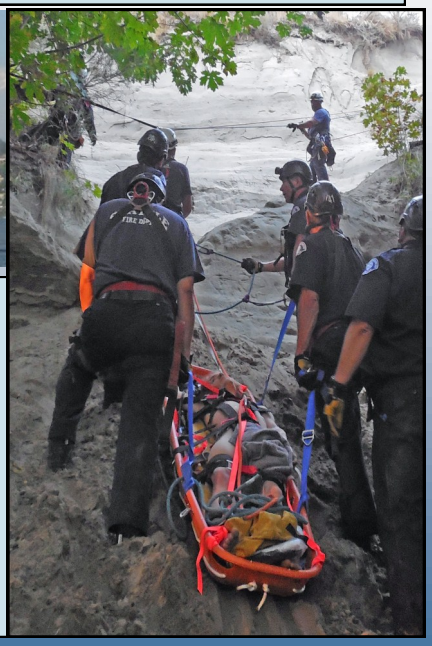
Those emergency incidents to which the fire department responds that require specific and advanced training and specialized tools and equipment.

These types of incidents include but are not limited to hazardous materials, technical and heavy rescue, marine fire response and rescue, dive rescue, wildland firefighting, and CBRNE response. However, in all cases, the fire department is limited to performing only those specific special operations functions for which responding personnel have been trained and are correctly equipped.

The Seattle Fire Department Firefighters are trained to Operations Level for response to special operations incidents within the Seattle Fire Department. The Seattle Fire Department's response time standard for operations level firefighters is the same as a fire suppression call. Arrival of technical or special operations level trained response teams has not historically been tracked.

Special Operations 2013 Response Totals

Unit	Response Report	Count	Average Travel Time
Ladder 7	Technical Rescue	198	8.1 minutes
HazMat 1	Hazardous Materials	44	8.5 minutes
Engine 36	Marine Emergency	24	11 minutes



Fire Boats 2013 Response Totals

Unit	Count	Average Travel Time
Engine 4 (Salt Water)	92	17.2 minutes
Engine 3 (Fresh Water)	n/a	No dispatches
Engine 1 (Fast Attack)	42	23.2

ANNEX A:

2013 Response Statistics/Performance Measures

Percentage of the time that the first engine company arrives within 4 minutes for any incident. NFPA 1710 is 90%

	Jan.	Feb	Mar.	Apr.	May	Jun	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	YTD
Incidents	4082	3358	3770	3825	4284	4361	4588	4476	4255	4201	4061	4283	49544
2013	85%	84%	84%	85%	83%	84%	83%	84%	84%	84%	85%	85%	84%
Incidents	3829	3614	3922	3791	4175	4219	4296	4419	4211	4125	3940	4196	48737
2012	81%	84%	84%	84%	84%	84%	83%	83%	84%	82%	84%	83%	83%
Incidents	3646	3405	3740	3582	3895	3859	3992	4178	3899	3769	3474	3666	45,105
2011	85%	86%	84%	86%	85%	85%	85%	84%	84%	85%	86%	85%	85%
incidents	3647	3365	3703	3553	3870	3795	4192	4068	3870	4009	3844	3691	45607
2010 baseline	86%	86%	84%	86%	86%	86%	85%	85%	85%	85%	81%	85%	85%
2009 baseline	84%	85%	86%	85%	83%	83%	83%	83%	84%	84%	83%	84%	84%

ANNEX A:

Percentage that a full-alarm assignment of firefighters (minimum of 15 members) is on scene within 8 minutes for fire emergency (NFPA standard does not include Battalion Chief)

(NFPA standard = 90%)

	Jan	Feb	Mar	Apr.	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2013 Incidents	25	26	18	18	34	17	21	12	11	14	22	18	236
2013 Results	80%	77%	94%	83%	85%	59%	76%	75%	83%	71%	82%	89%	80%
2012 Incidents	32	19	12	17	19	15	19	25	12	25	19	16	230
2012 Results	91%	63%	83%	88%	95%	100%	89%	68%	83%	76%	68%	94%	83%
2011 Incidents	19	13	20	25	21	15	25	32	21	24	30	16	261
2011 Results	89%	85%	80%	100%	90%	67%	84%	84%	71%	79%	83%	81%	84%
2010 Incidents	15	15	15	13	14	18	27	26	23	18	22	23	229
2010 Results	93%	87%	80%	87%	79%	78%	81%	92%	87%	89%	73%	91%	87%
2009 Baseline	93%	73%	80%	85%	94%	88%	64%	95%	100%	74%	75%	88%	84%

ANNEX A:

2013 Response Statistics/Performance Measures

Percentage of the time that any first unit arrives within 4 minutes for an EMS incident (BLS or ALS) NFPA 1710 is 90%

	Jan.	Feb	Mar.	Apr.	May	Jun	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	YTD
Incidents	5491	4901	5475	5248	5698	5791	6115	5999	5598	5482	5305	5513	66616
2013	85%	85%	86%	86%	85%	85%	85%	85%	86%	85%	86%	86%	85%
Incidents	4877	4739	5225	5119	5404	5469	5537	5839	5469	5275	5063	5594	63,610
2012	84%	86%	86%	87%	86%	86%	85%	85%	86%	84%	86%	95%	85%
Incidents	4719	4380	5036	4777	5196	5140	5279	5546	5052	4889	4593	4853	59460
2011	88%	88%	87%	87%	87%	87%	87%	87%	87%	86%	87%	86%	87%
incidents	4387	3988	4457	4257	4706	4587	5006	4849	4685	4878	4432	4741	54973
2010 baseline	87%	87%	85%	87%	87%	86%	86%	85%	86%	86%	83%	87%	87%
2009 baseline	86%	86%	86%	86%	85%	85%	85%	85%	85%	85%	84%	85%	85%

Percentage of the time that a first Advanced Life Support (ALS-paramedic) unit arrives within 8 minutes for an ALS incident. NFPA 1710 is 90%

	Jan.	Feb	Mar.	Apr.	May	Jun	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	YTD
Incidents	1394	1245	1310	1355	1398	1314	1444	1412	1294	1366	1248	1345	16125
2013	86%	77%	85%	86%	87%	84%	87%	83%	85%	86%	88%	87%	86%
Incidents	1349	1349	1454	1331	1391	1403	1418	1453	1403	1375	1331	1345	16602
2012	83%	87%	87%	84%	85%	82%	87%	83%	85%	82%	86%	85%	85%
Incidents	1295	1250	1405	1407	1435	1400	1358	1438	1324	1343	1297	1330	16282
2011	87%	85%	85%	86%	85%	84%	86%	87%	86%	87%	85%	86%	86%
incidents	1309	1256	1347	1316	1340	1338	1357	1293	1338	1365	1236	1236	15808
2010 base-line	87%	87%	86%	86%	85%	87%	85%	86%	87%	85%	83%	84%	85%
2009 baseline	85%	85%	86%	83%	85%	87%	84%	84%	86%	85%	83%	84%	85%

Annex B:

Emergency Response Totals by Company

Company	2009	2010	2011	2012	2013
Aid 2	5496	5830	6416	6817	62449
Aid 5	5717	5535	5364	5561	6194
Aid 14	1506	1606	1639	1575	1503
Aid 17	0	0	0	0	0
Aid 25	5018	5222	5372	5600	6381
Air 9	459	430	479	444	450
Battalion 2	861	837	188	n/a	n/a
Battalion 22	n/a	n/a	65	80	61
Battalion 3	0	1	0	0	1
Battalion 4	439	369	470	462	402
Battalion 5	739	692	911	958	848
Battalion 6	616	573	790	787	646
Battalion 7	289	274	437	441	364
B 22	n/a	0	65	83	61
Com Van	7	7	9	4	5
DECON1	2	0	0	2	1
Deputy 1	584	568	625	547	560
Engine 1	55	88	74	77	42
Engine 2	2775	3116	3321	3860	2825
Engine 3	22	1	9	0	0
Engine 4	185	193	194	192	92
Engine 5	3007	2675	2177	2342	3843
Engine 6	2534	2469	2500	2584	2292
Engine 8	1488	1446	1504	1619	1608
Engine 9	1830	1882	1845	1840	1729
Engine 10	2624	2610	2566	2549	2732
Engine 11	1839	1950	1875	2147	1962
Engine 13	1967	1928	1822	1833	2052
Engine 16	1858	1791	1814	1879	1876
Engine 17	2848	2923	3040	3110	3146
Engine 18	2301	2318	2223	2384	2526
Engine 20	1230	1205	1232	1257	1366
Engine 21	1872	1551	1498	1764	1834
Engine 22	1226	1281	1211	1281	1250
Engine 24	2457	2555	2711	2795	2731
Engine 25	2620	2648	2614	2790	2947
Engine 26	821	767	817	1148	1142
Engine 27	1123	1056	1084	1113	1280
Engine 28	3488	3310	3276	3448	3321

Annex B:

Emergency Response Totals by Company

Company	2009	2010	2011	2012	2013
Engine 29	1391	1399	1367	1403	1330
Engine 30	2010	1977	1974	2454	2123
Engine 31	2010	3317	3321	3472	3522
Engine 32	3141	1785	1826	1974	1924
Engine 33	2390	2381	2262	2421	2341
Engine 34	990	1001	1059	975	1018
Engine 35	1635	1536	1591	1569	1595
Engine 36	898	868	832	873	746
Engine 37	2164	2227	2112	2250	2497
Engine 38	1844	1908	1675	1659	1662
Engine 39	2471	2561	2670	2620	2619
Engine 40	1615	1603	1546	1582	1609
Engine 41	959	889	776	858	808
Ladder 1	1726	1636	1490	1508	1441
Ladder 3	1129	1010	1013	1029	939
Ladder 4	1696	1835	1912	2187	1376
Ladder 5	1561	1611	1573	1676	1617
Ladder 6	690	638	629	705	650
Ladder 7	950	856	855	903	839
Ladder 8	1005	904	929	868	1000
Ladder 9	1556	1493	1545	1644	1509
Ladder 10	1490	1494	1462	1580	1577
Ladder 11	863	802	708	864	879
Ladder 12	1284	1269	1268	1259	1245
Ladder 13	n/a	n/a	730	n/a	n/a
Medic 1	4157	4128	4195	4415	4265
Medic 10	4131	4055	4170	4374	4283
Medic 16	2856	2744	2859	2909	2789
Medic 18	2269	2030	2111	2161	2079
Medic 28	2712	2607	2615	2693	2570
Medic 31	2707	2683	2767	2878	2827
Medic 32	2315	2359	2442	2524	2537
Medic 44	503	515	854	847	721
Medic 80	19	95	27	7	17
Marshal 5	374	322	316	311	287
MARVAN	19	28	16	25	28
MCI 1	3	2	3	4	4
MVU 1	3	5	2	4	5
Patrol 4	70	71	80	0	65
P25	2	0	0	1	4
R1	5	215	233	156	216
Rehab 1	n/a	n/a	n/a	n/a	315
Safety 2	686	664	720	670	671
Staff 10	591	565	616	556	569
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ANNEX C:

DEFINITIONS OF TERMINOLOGY

Careful definition of terminology is essential to any conversation about response performance standards. It becomes even more critical when an organization attempts to benchmark its performance against other providers. The following definitions are standardized for discussion of response performance parameters within the Fire Service:

Event Initiation Point: The point at which factors occur that may ultimately result in an activation of the emergency response system. Precipitating factors can occur seconds, minutes, hours, or even days before emergency event awareness is reached. An example is the patient who ignores chest discomfort for days until it reaches a critical point at which he/she makes the decision to seek assistance (emergency event awareness). It is rarely possible to quantify the point at which event initiation occurs.

Emergency Event Awareness: The point at which a human being or technologic "sentinel" (i.e., smoke detector, infrared heat detector, etc.) becomes aware that conditions exist requiring an activation of the emergency response system. This is considered the emergency event awareness.

Alarm Interval: Measured time between emergency event awareness and the alarm time.

Alarm Time: The point of receipt of the emergency event at the Public Safety Answering Point (PSAP); the point where sufficient information is made known to the dispatcher so that applicable units can be deployed to the emergency.

Call Processing Interval: The first ring of the 911 telephones at the dispatch center and the time the Computer Aided Dispatch (CAD) operator activates station and/or company alerters, pagers, bells, etc. This can, if necessary, be broken down into two additional parameters: "*call taker interval*" (the interval from the first ring of the 9-1-1 telephone until the call taker transfers the call to the dispatcher), and "*dispatcher interval*" (the interval from the time when the call taker transfers the call to the dispatcher until the dispatcher (CAD operator) activates station and/or company alerting devices. The "call taker interval" also includes the time taken to transfer the call from the primary PSAP (Police) call taker to the secondary PSAP (Fire) call taker. Sixty (60) seconds is an industry standard.

- Measured time between alarm time and dispatch time.

Dispatch Time: Is the time when the dispatcher, having selected appropriate units for response with assistance from the CAD system, initiates the notification of response units.

Turnout Interval: Measured time between dispatch time and turnout time.

Turnout Time: When units acknowledge notification of the event to the beginning point of response time (wheels rolling).

- Measured component known as "Turnout Time" required by HB1756*

ANNEX C:

DEFINITIONS OF TERMINOLOGY

Travel Interval: Measured time between turnout time and on scene time of initial company.

- Measured component known as "Response Time" required by HB1756*

Initial Company Time: The point at which the initial company arrives on scene.

Initiation of Action: The point at which operations to mitigate the event begin.

Initial Full Alarm Assignment Interval: Measured time between initial company on scene time and arrival of the balance of the Initial Full Alarm Assignment.

Initial Full Alarm Assignment: Time when all of the personnel, equipment, and resources ordinarily dispatched upon alarm arrives on the scene.

- Measured component required by HB1756 for fire suppression responses*

Response Time: The combined measured time from dispatch time, and includes turnout and travel intervals, to initial company arrival time.

Controlled Time: The point at which fire growth has been stopped and/or when initial basic life support concerns have been addressed.

Termination of Event: The point at which units have completed the assignment and are available to respond to another request for service.