

**Kitsap County Fire District
18/Poulsbo
*2010 Annual Report
of Service Level Objectives***



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INTRODUCTION:

The Revised Code of Washington (RCW) 52.33 requires substantially career fire districts to adopt and annually report response time objectives for certain services. The purpose of this legislation is to measure the time it takes for the first emergency response unit to arrive at a fire before flashover or to an emergency medical incident to prevent brain death. This is critical to the survivability of the patient and the reduction of fire losses in the interest of public safety and welfare. It is also critical for emergency responders to arrive as fast as possible to reduce the impact of disabling injuries and disease process's from incidents like head injuries, strokes, heart attacks, or diabetic problems.

The District, through a resolution of the Board of Fire Commissioners, has adopted service level objective goals in Policy 1004. This report reviews the District's performance in achieving these goals during year 2010.

EMERGENCY RESPONSE BREAKDOWN AND TOTALS IN 2010:

The general emergency alarm information for emergency response requests in Kitsap County Fire District 18 are outlined below. This information is presented in the same format as the monthly "Operations Report" provided to the Board of Fire Commissioners.

INCIDENT BREAKDOWN BY TYPE, BY STATION, TOTALS AND PERCENTAGES:													
Station - 71			Station - 72			Station - 73			Station - 77			Totals	%
Fire Calls	30		Fire Calls	12		Fire Calls	5		Fire Calls	13		60	2%
EMS/Rescue	1337		EMS/Rescue	161		EMS/Rescue	124		EMS/Rescue	430		2052	65%
Haz Cond	54		Haz Cond	8		Haz Cond	8		Haz Cond	15		85	3%
Service Call	265		Service Call	43		Service Call	27		Service Call	75		410	13%
Good Intent	205		Good Intent	30		Good Intent	54		Good Intent	83		372	12%
False Call	117		False Call	19		False Call	11		False Call	22		169	5%
Other	13		Other	3		Other	7		Other	7		30	1%
First Due:	2021	64%	First Due:	276	9%	First Due:	236	7%	First Due:	645	20%	3178	100%
STATION UNIT ACTIVITY:													
Station - 71			Station - 72			Station - 73			Station - 77			Totals	
Aid-71	124		Aid-72	310		Aid-73	10		Aid-77	111		555	
Medic-71	1531		Medic-72	34					Medic-77	1200		2765	
Engine-71	2109		Engine-72	75		Engine-73	1		Engine-77	265		2450	
Tender-71	33								Tender-77	20		53	
Marine-71	8											8	
D/C 71	429											429	
Brush 71	0											0	
Totals	4234	68%	Totals	419	7%	Totals	11	0%	Totals	1596	25%	6260	
TOTAL CALL BREAKDOWN EM: PRIORITY EVENTS:						MUTUAL-AID BREAKDOWN:							
EMS Breakdown			Suburban			90% Fractal Turnout and Travel			Mutual - Aid	Recd	Given	Total	
BLS	1117	41%	Priority 1, 2 & 3	1605		2:06	7:44	CKFR	74	11	85		
ALS	1634	59%						BIFD	9	84	93		
Total	2751	100%						NKFR	152	222	374		
TRANSPORTS:			Rural			90% Fractal Turnout and Travel			JCFD3	5	9	14	
BLS	740	47%	Priority 1, 2 & 3	1355		3:47	12:57						
ALS	827	53%											
Total	1567	100%											
Previous Year Tx	1605								Total	353	358	711	
										50%	50%	100%	

Incident Breakdown by Type, Station, Totals, and Percentages:

Incident information is organized on the basis of a station's response area. All alarms are categorized by the type of incident found when responders arrived on the scene of an emergency. This categorization may be different than the incident type initially dispatched.

Fire- Includes fires that are extinguished before arrival and gas vapor explosions.

EMS/Rescue- Includes medical assist, emergency medical incidents, lock in, search for lost person, extrication, water and ice related rescue, standby, and other related events.

Hazardous Condition- Includes events dealing with flammable liquid spills, chemical releases, radioactive releases, electrical wiring issues, biological hazards, and explosives and bomb removal.

Service Calls- Includes events dealing with persons in distress like ring removal and locked vehicles, water problems, smoke removal, animal problems or rescue, public agency assists, unauthorized burning, and cover assignments and move ups.

Good Intent- Includes cancelled en-route, wrong locations, authorized controlled burning, steam or gas mistaken for smoke, EMS events where a non-fire service agency transported, and hazmat release investigation-nothing found.

False Call- Includes fire alarm activations, bomb scares, system malfunctions, sprinkler system activation with no fire, and biohazard scare.

Other- Includes severe weather, and natural disasters and citizen complaints.

Station Unit Activity:

This data reflects the activity of each unit assigned to a station regardless of the location that the event occurred.

EMS Breakdown:

Reports the number of emergency medical calls based upon the dispatch type, how many of those calls were transports and the level of medical care needed for that specific medical illness or injury.

TIME- THE CRITICAL FACTOR

For emergency response to be effective, interventions must occur within identified time frames in order to create the most opportunity to save lives and property. Generally speaking, the faster the intervention the more positive the outcome. The arrival of first responders with automatic external defibrillator capability before the onset of brain death or the arrival of adequate fire suppression resources before flashover are time critical events during the mitigation of an emergency, which is in the best interest of the public (RCW 52.33.010). The arrival time of properly trained and equipped personnel is the single most significant factor in reducing the impact of serious emergencies.

Medical Emergencies / Cardiac arrest: According to the American Heart Association, irreversible brain death begins within four to six minutes after cardiac arrest.

Fire Suppression / Flashover: The national average for a fire to generate enough heat to ignite the contents of a room and cause flashover is approximately eight minutes. When a flashover occurs, the fire rapidly spreads into adjoining rooms which

can cause occupant injury and/or deaths to increase dramatically. In addition, the property dollar-loss may increase due to the increased fire spread.

CASCADE OF EVENTS

To determine response effectiveness: the overall “Response Time” is divided into incremental categories to identify areas where performance can be enhanced. Through critical analysis evaluating the Cascade of Events, an Action Plan (Page 12) can be implemented to improve overall response times.

The following time-stamps are used to analyze the efficiency and effectiveness of the 9-1-1 dispatch center (CenCom) and Kitsap County Fire District 18/Poulsbo’s emergency response:

- The discovery of the emergency
- First ring to the 9-1-1 dispatch center
- Phone picked up by the dispatch center
- Dispatch center enters the event into the system
- Information is dispatched to a fire station via radio and/or printer
 - **Time Stamp-Turnout Time**
- Apparatus initiates response, leaving their current location to the emergency
 - **Time Stamp-Response Time**
- First-due unit arrives on the scene
- Subsequent units arrive on the scene
 - **Time Stamp-Full First Alarm Assignment Response Time**
- Emergency is declared under control and situation returned to a state of normalcy
- Units leave scene and become available for next alarm

SERVICE LEVEL RESPONSE REPORTING

This report reflects the performance of the District in relation to its service level objectives as directed in Policy 1004. All time based metrics are reported utilizing a 90% fractal measure; “N/A” indicates there were no calls of this nature in 2010.

	<u>Goal</u>	<u>Actual</u>
Turnout time:		
Priority 1 and 2 events	2 min	2:19 min
Fire events	2 min	2:48 min
Emergency Medical	1.5 min	2:15 min

Response time for the arrival of the **first arriving unit** for all priority 1 and 2 events.

Suburban	8 min	7:17 min
Rural	11 min	12:42 min

	<u>Goal</u>	<u>Actual</u>
Response time for the arrival of the first arriving engine company at a fire suppression incident to include structural, wild-land, and vehicle.		
Suburban	8 min	3:18 min
Rural	11 min	6:34 min

Response time for the arrival of a full first alarm assignment at a fire suppression incident.		
Suburban	14 min	12:36
Rural	18 min	17:02

Response time for the arrival of a unit with first responder or higher level capability at an emergency medical incident.		
Suburban	8 min	7:21
Rural	11 min	12:08

Response time for the arrival of an advanced life support unit at an emergency medical incident.		
Suburban	8 min	6:51
Rural	11 min	11:51

Response time for the arrival of the first arriving unit at a special operations incident .		
Suburban	8 min	N/A
Rural	11 min	N/A

Response time for the arrival of a technician level team at a special operations incident .		
Suburban	2 hours	N/A
Rural	2 hours	N/A

Response time for the arrival of the first arriving unit at a Marine rescue or firefighting incident .		
Suburban	8 min	N/A
Rural	11 min	4:16 (1 Incident) N/A

Response time for the arrival of the first arriving unit at an Aircraft rescue and firefighting incident .		
Suburban	8 min	N/A
Rural	11 min	N/A

	<u>Goal</u>	<u>Actual</u>
Response time for the arrival of the first arriving unit at a hazardous materials incident .		
Suburban	8 min	N/A
Rural	11 min	N/A

Response time for the arrival of a technician level team at a hazardous materials incident .		
Suburban	2 hours	N/A
Rural	2 hours	N/A

2010 RESPONSE DATA SUMMARY

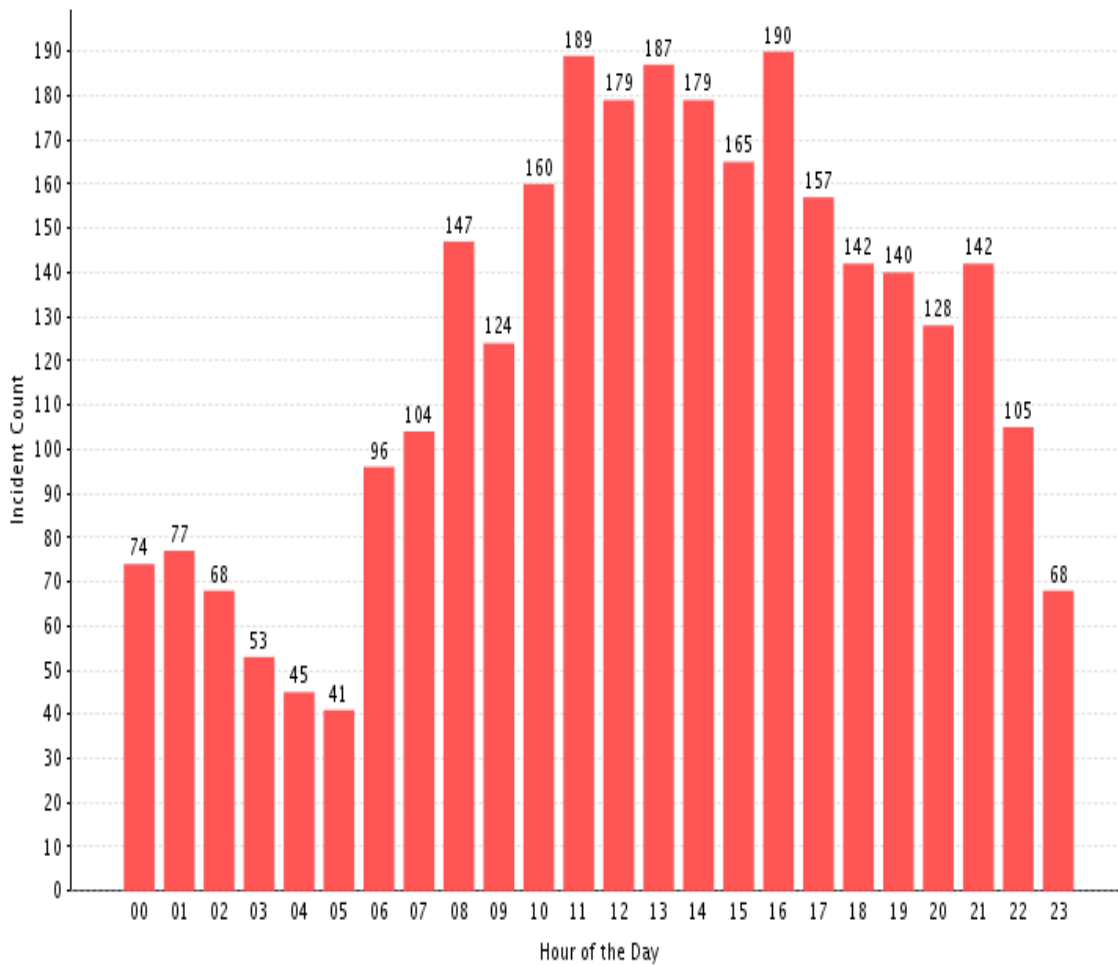
<i>Turnout Time</i>	Turnout Adopted	Turnout Actual	Disposition	2009
Priority 1&2 Events	2:00	2:19	Failed	2:33
Fire	2:00	2:48	Failed	2:58
Medical	1:30	2:15	Failed	2:26

<i>Response Time</i>	Turnout Adopted	Turnout Actual	Disposition	2009
<i>Suburban:</i>				
First Unit- Priority 1&2 Events	8:00	7:17	Passed	6:40
First Engine- Fire Event	8:00	3:18	Passed	6:45
Full First Alarm Assignment	14:00	12:36	Passed	12:49
BLS Unit- Medical Event	8:00	7:21	Passed	7:11
ALS Unit- Medical Event	8:00	6:51	Passed	7:17
First Unit- Special Ops	8:00	N/A	N/A	N/A
Tech. Team- Special Ops	2 hr	N/A	N/A	N/A
First Unit- Marine Event	8:00	N/A	N/A	N/A
First Unit- Aircraft Event	8:00	N/A	N/A	N/A
First Unit- Haz-Mat Event	8:00	N/A	N/A	8:19
Tech. Team- Haz-Mat	2 hrs	N/A	N/A	N/A

<i>Rural:</i>				
First Unit- Priority 1&2 Events	11:00	12:42	Failed	10:23
First Engine- Fire Event	11:00	6:34	Passed	10:48
Full First Alarm Assignment	18:00	17:02	Passed	13:37
BLS Unit- Medical Event	11:00	12:08	Failed	10:59
ALS Unit- Medical Event	11:00	11:51	Failed	10:54
First Unit- Special Ops	11:00	N/A	Passed	9:18
Tech. Team- Special Ops	2 Hrs	N/A	N/A	N/A
First Unit- Marine Event	11:00	N/A	N/A	8:53
First Unit- Aircraft Event	11:00	N/A	N/A	N/A
First Unit at a Haz-Mat	11:00	N/A	N/A	N/A
Tech.Team- Haz-Mat	2 Hrs	N/A	N/A	N/A

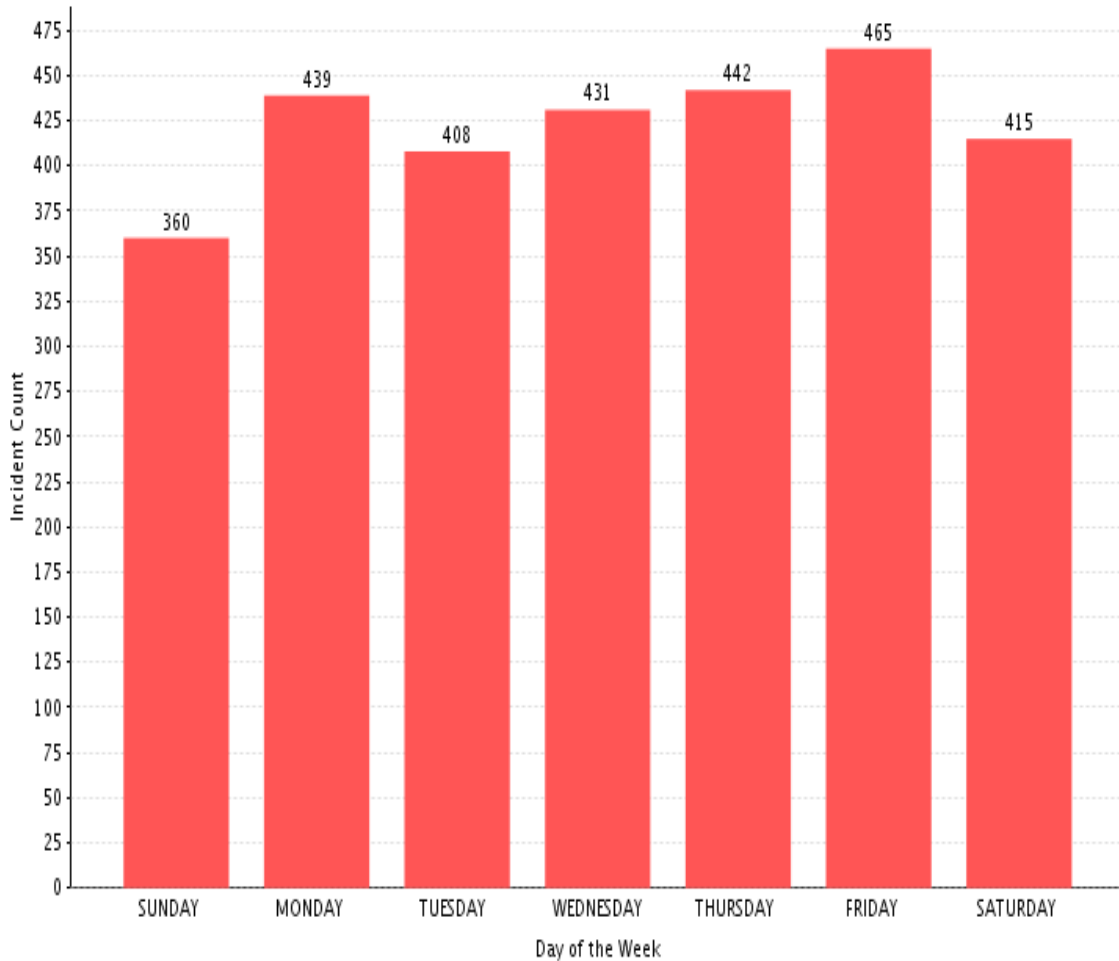
EMERGENCY EVENT INFORMATION: TIME OF DAY, DAY OF WEEK, and MONTH OF YEAR:

Total Incidents by Time of Day



The analysis of time of day produces results that are more pronounced than most fire agencies in the United States. Within the 12-hour period from 08:00 to 20:00, a total of 1959 alarms occurred resulting in 69.17% of all requests for service. Correspondingly, only 30.82% of events occur between 20:01 and 07:59.

Incidents by Day of Week Total Incidents *

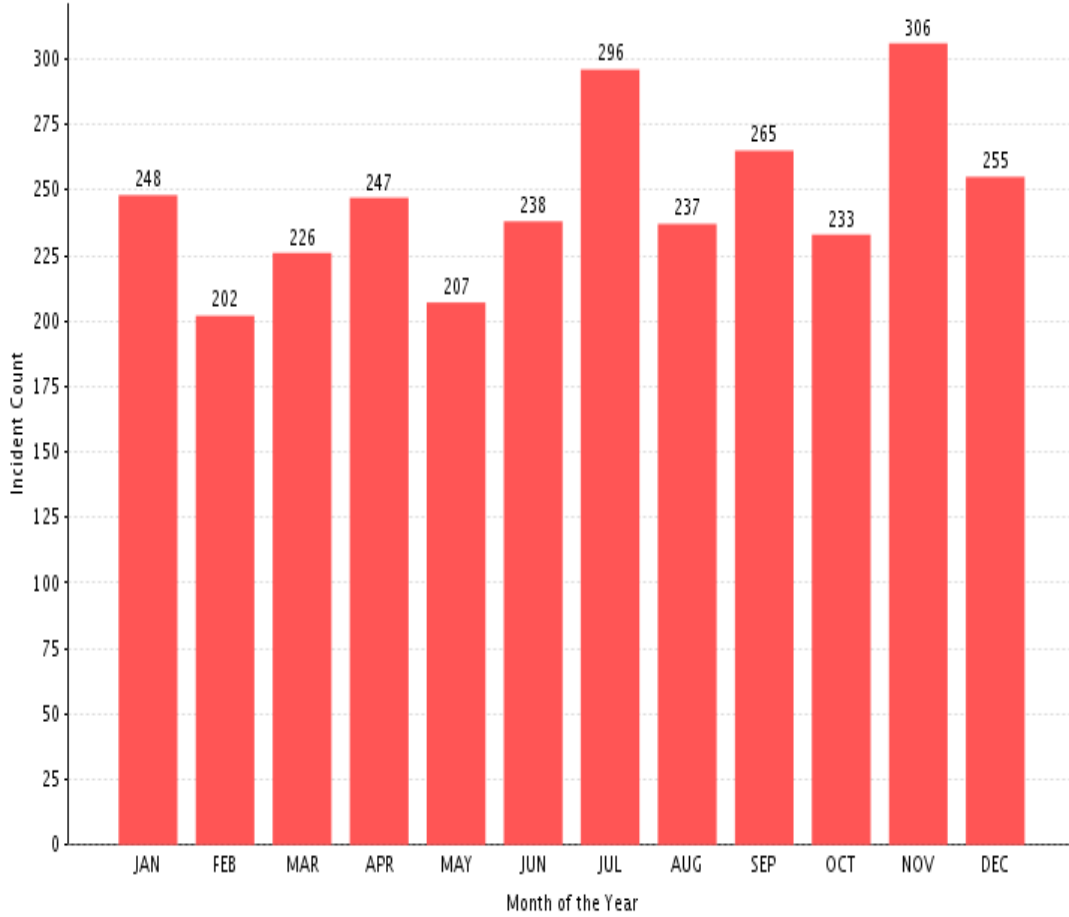


Day of week identifies:

- Sunday = 12.16%
- Monday = 14.83%
- Tuesday = 13.78%
- Wednesday = 14.56%
- Thursday = 14.93%
- Friday = 15.7%
- Saturday = 13.97%

A base probability for distribution is 14.28% per day. Monday, Wednesday, Thursday, and Fridays are all above this base with Friday having the most calls at 8.94 calls per day. Sunday has the lowest call volume at 360 calls for the year, 6.9 calls per day.

Incidents by Month of Year Total Incidents



Month of year reflects a fairly even distribution with a slight increase in July and November. The November increase is attributed to a winter storm causing exceptional alarm activity levels.

STATION RESPONSE TIMES:

Station Response Times Rural and Suburban-Priority 1&2 Events				
Station	Rural	2009	Suburban	2009
Station 71	10:40	8:49	7:23	6:05
Station 72	12:10	10:47	N/A	N/A
Station 73	12:32	12:32	N/A	N/A
Station 77	11:22	9:12	8:14	N/A

Individual Station data reflects an increase in the rural travel times possibly caused by the flex staffing of station 72.

CRITICAL EMERGENCY RESPONSE TIME TARGET DATA:

The two performance targets identified throughout current response time literature as critical to outcomes includes the arrival of the first response unit to a cardiac arrest victim and the arrival of the first engine to a structure fire incident. The current literature suggests for cardiac arrest, a six minute or less travel time is essential and at structure fires, an eight minute or less travel time is needed. For 2010 the following data reflects the percentage of calls that these benchmark times were attained:

- Cardiac Arrest: 6 minutes 66% of the time.
- Structure Fire: 8 minutes 72% of the time.

PERCENTAGE OF USE FOR ALL APPARATUS:

This data reflects the amount of time an apparatus is out of service because of attending emergency alarms. The current literature reflects a 20% usage of total time for any emergency response vehicle will impact the crews ability to achieve training, station, maintenance, wellness, and other requirements. Some suggests that when nearing this point, concentration needs to increase by adding additional response units to the station.

E71 9.7%	E72 0.03%	E73 0.5%	E77 .08%
M71 8.5%	A72 2.9%	A73 0.01%	M77 11.6%
A71 .13%			A77 .11%

PERCENTAGE OF RELIABILITY FOR EACH STATION:

The percentage was derived by identifying when a unit from the station response area where the call originates is the first unit on the scene. The percentage reflects how often this occurs. Analysis needs to occur to ensure the closest units are actually identified correctly as first due.

Station 71	80.1%
Station 72	26%
Station 73	0%
Station 77	53.3%

MEAN AVERAGE OUT OF SERVICE TIME FOR EMS TRANSPORTS:

The mean average out of service time for all transports was 1 hour and 31 minutes.

PREDICTABLE CONSEQUENCES

The arrival of first responders with automatic external defibrillator capability before the onset of brain death and the arrival of adequate fire suppression resources before flashover are both time critical events during the mitigation of an emergency, and are in the best interest of the public (RCW 52.33.010).

Response analysis and literature suggests that the arrival time of properly trained and equipped personnel is the single most significant factor in reducing the impact of serious emergencies.

From an analysis of the District's annual reporting, the service levels and initial unit response times are beyond the six minutes for brain death and the eight minutes for flashover when utilizing the 90% fractal method. A conclusion may be drawn that a percentage of these alarms are not meeting national response recommendations. The data also reflects an extended time for a full first-alarm assignment to arrive at structure fires within recommended guidelines.

For those events with extended response times, there is an increased risk to life and property loss. Both fire and emergency medical response time deficiencies in the wrong circumstance could lead to the following results:

- *An increased risk to life safety for both the citizens and firefighters.*
- *Inability to intervene with Basic Life Support (BLS) and/or Advanced Life Support (ALS) measures prior to brain death.*
- *Inability to safely perform rescue and interior fire attack / suppression at industrial, commercial and residential structure fires prior to flashover.*
- *Potentially larger loss for industrial, commercial and residential structure fires.*

The District's chief officers and elected officials are reviewing methods to improve factors that reduce all stages of the Cascade of Events such as:

- *Analyzing trends for high call-volume areas.*
- *Reduced times for call answering and information gathering at the 9-1-1 dispatch center through cooperation with 9-1-1 officials at CenCom.*
- *Automatic mutual-aid agreements with local jurisdictions.*
- *Reduced turnout times for firefighters.*
- *Analyzing trends for locations of emergencies.*
- *Review of community growth patterns for future station locations.*

ACTION PLAN-2011

- *Continued work with 9-1-1 (CenCom) officials to reduce call answering and information gathering times.*
- *Conduct an analysis of how to safely reduce turnout times.*
- *Conduct an analysis of all the components and steps needed to assure that every event is properly documented in the Records Management System.*
- *Review Station 73 response times. Determine if there are methods to reduce.*
- *Work with state and local officials regarding roads and access issues.*
- *Conduct an analysis of station response areas reflecting the closest station to respond to an incident.*
- *Evaluate the increase in travel time to rural designated areas.*

CLOSING STATEMENT

This report is intended to keep the Board of Fire Commissioners and the citizens informed of the District's ability to meet its identified service level delivery objectives as well as to identify limitations for fire and EMS responses.

This annual report will be used to facilitate improvements within the confines of the revenue given to us by the public. We are committed to provide accurate and revealing data to keep both the Board of Commissioners and citizens we serve informed.

Respectfully submitted,

Daniel Olson, Fire Chief
Kitsap County Fire District 18/Poulsbo