



**West Metro Fire Protection District  
Nine-Month Trial Study of the 48/96 Schedule  
11-1-2006**

Background:

The West Metro Fire Protection District is located in the west and southwest suburbs of the Denver metropolitan area. With 15 fire stations and more than 310 uniformed personnel, West Metro provides fire and emergency medical services to an excess of 240,000 people over a 100-square mile area. In 2005, West Metro responded to 22,151 calls. West Metro maintains seven on duty ambulances and all apparatus are Advanced Cardiac Life Support (ACLS) as approximately 70% of responses are emergency medical calls. Engine 1 is West Metro's busiest engine running about 3,485 calls per year. Engine 15 has the lowest call volume with approximately 311 calls each year. West Metro is heavily involved in a variety of special operations including: Dive and Swift Water and Ice Rescue, Wildfire Operations, Technical Rescue (including the sponsorship of the Colorado Urban Search and Rescue Task Force 1), Hazardous Materials, Fire Investigations, Tactical Emergency Medical Services, and Special Events Medical Care.

Prior to 2006, West Metro line personnel worked a "Berkley" Schedule (day on, day off, day on, day off, day on and then four days off). In February of 2005 the Union Membership began formal discussions specific to the 48/96 work schedule. A committee was established to research the new schedule of 48 hours on duty followed by 96 hours off. The committee recommended a one year trial. The union membership then voted to conduct a trial of the new schedule with approval of 64% of the members voting. The Union Officials and the Administration requested the trial to the West Metro Board of Directors who denied the proposal by a 4-3 vote. The Union then brought the request to the 2006 contract negotiations and was successful in getting the trial implemented. Prior to the Trial, the Physician Advisor for West Metro, Dr. Peter Vellman of St. Anthony's Hospitals was contacted. Dr. Vellman recommended Dr. Allison Hawks conduct a study of the new schedule beyond what West Metro was able to track. Dr. Hawks completed her own research and gathered information from Dr. Neale Lange specific to sleep research. Please see the "Evaluation of the 48/96 Shift for West Metro Fire" by Dr. Allison Hawks and the "West Metro Fire Focus Group Report". In September of 2006 the Union voted to retain the schedule with an 86% approval.

The Data:

The District tracked injuries, vehicle accidents, exposures, complaints, damage reports, response times, corrective actions, and sick leave. Physical fitness scores and citizen feedback were both examined and showed no significant change between the two schedules. All data is relative to a nine-month period. Some historical data is provided as a percentage of the year and not broken down by month.

## Injuries

Injuries were broken down into work comp. (directly related to work) and non work comp. (not directly related to work).

	2004	2005	2006
Work Comp. Injury	35	19	20
Non-Comp Injury	22	11	14

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	No Shift
Work Comp. Injury	8	7	5
Non-Comp. Injury	7	6	1

2006 showed an increase in the number of injuries relative to that of 2005 but a significant decrease relative to 2004. It should be noted that 2005 was an exceptional year for West Metro specific to low numbers of injuries and vehicle accidents. No significant relationship between the 1<sup>st</sup> and 2<sup>nd</sup> shift of the 48 hours was noted. No injury was found to be directly or indirectly related to fatigue. It is important to note that West Metro has seen dramatic improvement in injury prevention and injury recovery through the programs designed and implemented by the Safety Division and Wellness / Workers Compensation Manager. This has also resulted in insurance premium savings of over 1.1 Million Dollars over the last three years.

## Vehicle Accidents

Vehicle accidents are specific to accidents involving West Metro vehicles and broken down into avoidable and un-avoidable. The Safety Captain at West Metro looks at each accident and makes an objective determination based on the investigation of each incident.

	2004	2005	2006
Total Accidents	25	17	19
Avoidable	21	13	12
Unavoidable	4	4	7

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	Administrative
Avoidable	3	8	1
Unavoidable	3	3	1

Avoidable vehicle accidents in 2006 were actually less than that of 2005 and 2004, however; the second shift of the 48 hours shows a significant increase relative to the first shift. It should be noted that all of the accidents in 2006 were minor in nature, non resulted in injury, nor were any found to be directly or indirectly related to sleep deprivation.

## Exposures

Exposures include both medical exposures to communicable diseases as well as other exposures that can cause long term health issues such as asbestos or PCBs.

	2004	2005	2006
Exposures	14	11	12

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	Administrative
Exposures	5	5	2

## Citizen Complaints

Citizen Complaints were divided as EMS related and all others. Historical data on complaints was limited at best until 2006 at which time they were aggressively tracked. The vast majority of citizen complaints were unfounded after being investigated.

	2005	2006
Complaints	31	42

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift
EMS Related Complaints	16	26
Non-EMS Related Comp.	4	2

West Metro uses an internet based survey in order to get citizen feedback which is advertised through the billing for ambulance transports. In the first nine months of 2005 there were 70 responses and in the same time frame of 2006 there were 93 responses. Over 90 percent of all the surveys were overwhelmingly positive and no significant differences were noticed between the two years.

## Damage Reports

Damage Reports are broken down into EMS and Non-EMS Related. Prior to 2006 the majority of damaged EMS equipment was not tracked.

	2005	2006
Total Damage Reports	11	28
Non-EMS Damage Reports	6	8

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	Administrative
Total Damage Rep.	10	14	4

The damage to EMS equipment relative to 2005 and 2006 is not a fair comparison as the records for 2005 are not accurate. The damage to Non-EMS equipment is a more reasonable comparison and 2006 did show a slight increase compared to 2005.

## Response Times

Three different areas of average response times are noted. Turnout times are the time from alert to en-route, response time is from en-route to arrival, and on-scene time is from arrival until they clear the call.

	2005	2006
Ave. Turn-out Time	:57	:54
Ave. Response Time	3:56	4:05
Average On-scene Time	23:44	23:54

The turn-out times show improvement from 2005 to 2006, however; it should be noted that one of the organizations annual objectives specifically addressed the improvement of turn-out times. Response times were slightly slower which could be attributed to less aggressive driving. Initial concerns of personnel trying to clear scenes early due to fatigue proved not to be an issue according to the average on-scene times which went up slightly.

## Corrective Actions

Corrective Actions include disciplinary reports specific to the performance or lack of performance by any employee. These only include formal disciplinary action.

	2005	2006
Corrective Actions	12	11

2006	1 <sup>st</sup> Shift	2 <sup>nd</sup> Shift	No Shift
Corrective Act.	2	3	6

The majority of corrective actions could not be identified to a Shift; these include actions off duty or long term performance issues. 2006 saw a slight decrease in disciplinary reports which was likely insignificant.

## Sick Leave

In mid 2005 West Metro changed its procedure to allow employees to use sick leave for the care of sick family members. Had the schedule not changed, it was expected that sick leave use would have increased. In 2006 the procedure was changed to require that any employee using over 100 hours of sick leave in one year is now required to contact their Officer and District Chief anytime the leave is used. This procedure may have been a contributing factor to the decreased the use of sick leave but the possibility is unlikely.

	2004	2005	2006
Hours of Sick Leave	13,277	11,637	8,246

2006 saw a decrease in sick leave use by 29% when compared to the use in 2005 and a 38% decrease when compared to 2004. This improvement was directly related to a significant savings in overtime for the year as well as an increase in staffing levels.

### Management:

All Chief Officers and Captains were required to provide written documentation specific to how the new schedule affects their responsibilities. With few exceptions the officers noted challenges in communications. Administrative Personnel found it very difficult to contact Line Personnel when their shifts fell on a Saturday/Sunday. The problem was even worse if the previous week included a holiday on that Monday putting their shift on a Sunday/Monday and then a Saturday/Sunday rotation. Scheduling Training and other activities became more of a challenge as well. Many Administrative personnel find themselves calling Line personnel at home during the week and also working more on weekends in order to complete timely communications. Most personnel have adjusted to this requirement and no significant issues have been noted.

Line Personnel change shifts  $\frac{1}{2}$  as often and they always relieve the same shift. Captains have started using other means of communicating with the opposing Lieutenants as they meet less frequently. Pass-Down Books, E-mail, and memo's are much more prevalent. The majority of Captains like the new schedule and all have found ways to communicate effectively.

West Metro has 12 Chief Officers not including the Fire Chief. Of these Chiefs, six are assigned to the Line and six are assigned to the Administration. An informal poll showed that six approved of the new schedule and six did not. Of the six that approved of the schedule, four were assigned to the Line. The Chief Officers all recognized the challenges in communication and shared a concern of personnel becoming fatigued during the 48 hour shift. The fatigue is presently managed by rotating personnel from busier units to slower units when their 1<sup>st</sup> Shift is overwhelming. In the first nine months of 2006 this was reported on only three occasions. Fatigue was considered significant when a member did not receive five hours of inactivity during the last 12 hours of the first shift. Officers are required to evaluate their crew members and identify those who might be fatigued and in turn notify the appropriate District Chief of the situation.

### Membership:

The increase in the percentage of personnel wanting to change to the 48/96 schedule is impressive going from 64% before the trial to 86% after the trial. Many personnel were concerned about the effects on families and especially those families including children with special needs. It appears that those concerns were relieved during the trial period. Please see the report: "Evaluation of the 48/96 Shift for West Metro Fire" by Dr. Allison Hawks and the "West Metro Fire Focus Group Report". It should also be noted that some divorced employees had to take legal action in order to adjust their child visitation rights and felt significant hardship from having to do so.

### Conclusion:

West Metro can only provide limited data in a nine-month period in regards to the schedule change to 48/96. The work of Dr. Allison Hawks and Dr. Neale Lange should be considered by

any agency researching this schedule change. Recognition of management rights and a good working relationship between labor and management are important in addressing concerns should this schedule change be considered.

Challenges to management including communications can be anticipated and reasonably overcome. Benefits to the fire department and citizens can be reasonably expected in the form of a significant decrease use in sick leave and a slight decrease in long term employee fatigue. As with any schedule change, some personnel may face hardship if they are dependent on their current schedule for activities such as child visitation or part time employment outside the fire service. The benefit to the employee with the 48/96 schedule is realized through less travel to and from work and more continuous days off. It can be argued that a benefit to the employee is also a benefit to the organization. At this time the administration recommends that the West Metro Line Personnel remain on the 48/96 Schedule.