Beating Driver Fatigue

City Workers and driver fatigue:
Colorado cities are faced with tough economic times. During these times, pressure to provide quality services increases while resources diminish. For city/town drivers, this sometimes means increased workloads, larger coverage areas, and longer hours behind the wheel. In this challenging environment, driver fatigue is inevitable, along with the increased risk of potentially fatal motor vehicle accidents. What causes driver fatigue? Is it preventable? What measures can be taken to reduce the risk?

Statistics:
The National Highway Traffic Safety Administration (NHTSA) conservatively estimates that 100,000 police-reported crashes are caused by fatigued drivers, resulting in more than 1,550 deaths and 71,000 injuries. This represents up to 17% of all fatal crashes. These reports may be significantly under-estimated since there is currently no universal report mechanism utilized by law enforcement during an accident investigation to measure and determine whether driver fatigue or drowsiness was a contributing factor to an accident.

According to a National Sleep Foundation survey, 60% of adult drivers in the United States – about 114 million people – say they have driven a vehicle while feeling drowsy in the past year, and more than one-third (37%) – or about 70 million people – have actually fallen asleep at the wheel! In fact, of those who have nodded off, 13% say they have done so at least once a month. Four percent – approximately 7.6 million drivers – admit they have had an accident or near accident because they dozed off or were too tired to drive.

Risk Factors:
Shift workers whose sleep is interrupted by working at night or irregular hours face the greatest risk of an accident. Long hours behind the wheel in a demanding job, such as snowplowing during heavy storm events, diminishes critical response time. Personal lifestyle, health, and wellness choices also contribute to the likelihood of driver fatigue.
Prevention requires pre-planning on the part of the operator to reduce the risk. There are other notable risk factors as follow:

1. **Medications and alcohol**
   Medications have long lasting effects to the body. After five nights of partial sleep deprivation, three drinks will have the same effect on your body as six would when you’ve slept enough.

2. **Diet and meal times**
   If your body energy is busy digesting a large, fatty or unbalanced meal, energy is taken away from pumping oxygen to the brain, which we need to keep us awake and alert.

3. **Caffeine and its effects**
   Although it can be beneficial, caffeine takes 30 minutes to absorb into the system and its effects last only 2-3 hours. Remember that as the effects of the caffeine diminish, withdrawal “crash” occurs, increasing the potential for drowsiness.

4. **Undiagnosed sleep disorders**
   Drowsiness or fatigue can also be caused by various medical sleep disorders, such as sleep apnea, narcolepsy, and insomnia. According to the National Institutes of Health, an estimated 50% of sleep disorders remain undiagnosed.

**Sleep Deprivation:**
In our fast paced society, lack of sleep is commonly the greatest risk factor. If you are like most people, you believe you can control your sleep. In one study, nearly 80% of people believed they could predict when they were about to fall asleep. This thinking keeps drivers unaware of their deteriorating condition and leads them to keep driving; however, sleep is not voluntary. If you are drowsy, you can fall asleep and never know it. It is also impossible to tell how long you have been asleep. Think about the times you felt drowsy watching TV and suddenly the program is over. So when you are driving, falling asleep for even a few seconds can kill you.

What is adequate sleep? Sleep experts recommend a range of 7-9 hours of sleep for the average adult to maintain optimal body functionality; however, sleep requirements vary by person and family. Adults who get less than 7 hours of sleep have been linked to health and safety problems including obesity and high blood pressure, negative mood and behavior, decreased productivity, increased risk of accidents, and generally higher mortality rates.

A study published in the Environmental & Occupational Health (vol. 64, No. 3) proves that the “combination of night work, overtime and shortened sleep can contribute to the development among police officers of the metabolic syndrome, a combination of
unhealthful factors that increase the risk of cardiovascular disease (CVD), primarily heart disease and stroke.”

While sleep patterns change as we age, the amount of sleep we need generally does not. Older people may wake more frequently through the night and may actually get less nighttime sleep; however, their sleep need is no less than younger adults. Because they may sleep less during the night, older people tend to sleep more during the day. Naps planned as part of a regular daily routine can be useful in promoting wakefulness.

**Warning Signs:**
There are generally one or more warning signs which accompany drowsy or fatigued driving. Drivers should learn to recognize these warning signs and take action when they occur:

- Feeling irritable, restless, or aggressive.
- Frequent yawning, rubbing eyes, or nodding head.
- Difficulty in focusing, frequent blinking and/or heavy eyes.
- Taking a “long blink” with the realization of having dozed off.
- Daydreaming, experiencing wandering or disconnected thoughts.
- Missing signs or driving past an intended exit.
- Drifting from your lane, drifting off the road, or tailgating.

**Prevention:**
In recent years, external controls have been developed in an attempt to control driver fatigue. These systems are commonly integrated into a vehicle by the manufacturer and use facial recognition, lane measurement, or behavior recognition to identify drowsy driving and alert the driver. Other driver alert systems include earpiece units which detect when the head of a driver has reached a preset degree of tilt. These systems can be effective in alerting the driver and preventing an accident. Rumble strips can also be an effective control; however, they are expensive and of little help use during snowplowing or other unique operations.

The surest method of prevention is for drivers to apply and practice personal controls to reduce the risk of fatigue and drowsiness. Some tips you can use to keep safe:

- Stay hydrated with water or hydrating sports drinks throughout the day.
- Use caffeine but beware of its limitations – it is preferable to use it during the last 2-3 hours of driving and avoid it during the early part of the shift. Overuse will result in reoccurring withdrawal “crashes.”
- Get a good night’s sleep. The average person requires about 7-9 hours of sleep a night, although it varies by person and family.
- Eat well-balanced, healthy foods. Start by replacing fast food and unhealthy meals with healthy snack options. Pack a cooler with trail mix, beef jerky, sunflower seeds, granola, or protein bars. Sugary foods, like candy bars, are a quick fix but will just leave you lagging in an hour.
- Eat in smaller portions at 1 to 2-hour intervals – this helps your body keep the blood and oxygen flowing to your brain instead of spending a lot of energy digesting food.
- Walk, bend, stretch, or perform other exercises to stimulate blood flow and reduce fatigue.
- Keep your body active by taking a micro-break. A good use of a micro-brake would be walking around your truck to check equipment when you are refueling instead of sitting in the vehicle. Periodically, swinging your arms, rolling your neck, or lifting and lowering your shoulders will help keep the body active and can be done while in the vehicle.
- If possible, drive with a companion on long trips. Passengers can help look for early warning signs of fatigue or switch drivers when needed. Passengers should stay awake to talk to the driver.
- Avoid alcohol and medications that impair performance. Alcohol and medication may interact with fatigue, exacerbating its effects.
- Consult a physician or a sleep disorder center for diagnosis and treatment if experiencing frequent daytime sleepiness, difficulty sleeping at night, and/or loud snoring every night.

**Summary:**
As resources dwindle and municipalities struggle to do more with less, fatigue is likely to increase and present and even greater danger among drivers. Determine the risk factors to which you are exposed. Learn to recognize the warning signs and take action when they occur. Several organizations provide information on drowsy driving including research studies, articles and prevention tips.

Finally, take the time to take care of yourself; preplan strategies for long driving trips, eat healthy, and always ensure a restful night of sleep. Following these simple guidelines will go a long way in reducing the risk of fatigued driving and keep you safe in the driver’s seat.

**References:**
- National Sleep Foundation
- Automobile Association of America (AAA) Foundation
- National Highway Traffic Safety Administration