CITY OF
PORTLAND, OREGON
OFFICE OF NEIGHBORHOOD INVOLVEMENT

CHARLIE HALES, MAYOR
Amalia Alarcón de Morris, Bureau Director
Noise Control Program
1221 SW 4th Avenue, Room 110
Portland, Oregon 97204

Promoting a culture of civic engagement

Noise Review Board
January 13, 2016
Minutes

Present: Paul van Orden, Julie Greb, David Sweet, Carol Gossett, Melissa Stewart, Kerrie Standlee

Minutes: Kathy Couch

Call to Order: 5:59 pm

Review of request by Asphalt Pavement Association of Oregon, along with ODOT, to enact a pilot project for highway construction worker safety regarding spotters instead of back-up alarms
John Hickey, Executive Director, Asphalt Pavement Association
Mark Beeson, Oregon Department of Transportation

John Hickey says his understanding is that, in the City of Portland, a common noise permit condition, including Permits with ODOT, requires contractors disconnect back-up alarms. He is here to ask the Board to consider a pilot program, under which contractors would not disconnect alarms for mobile paving operations for the 2016 paving season. At that point, consider reassessing the pilot program.
He explained that for paving construction projects, disconnection of back up alarms creates a more dangerous work environment, spotters are ineffective in a noisy and quick-paced project such as a highway or major roadway. The Association is gravely concerned about worker safety. In 2015, there were 4 fatalities on roadway paving work zones, including a superintendent being backed over by a material transfer device. This is a critical issue for paving association members and for ODOT.

To summarize the packet provided, there is a description of a paving operation, vastly different from a stationary building work zone, where neighbors are affected for the entire work shift.
Pavement operations involve sites that cover a long area, with different pieces of equipment running at different times, different speeds, and other obstructions.

Steps include:
Traffic controls set up next to moving highway traffic with minimal barriers
Many pieces of equipment are involved; a grinder, sweeper, tack truck (bonds a glue layer) which puts glue sprayed on the surface, and delivery of hot asphalt, 3 different rollers moving at different speeds and patterns. Additionally, every paving project involves areas that can't be paved with equipment in all areas so laborers are used to manually placing asphalt, etc.
Roadway projects are unique from other kinds of construction projects. There is enough risk to workers to justify a yearlong pilot project.
Mark Beeson, ODOT project manager, who works closely with contractors, supervises a crew of 18 inspectors, who are also out on the road with asphalt contractors. He also plays a role as construction safety chair. He stated that ODOT strongly supports the Asphalt Pavement Association's request for the pilot project. High traffic volumes in Portland, pavers are forced to work nights during limited hours. With adjacent noise and traffic, smart alarms aren't that effective and spotters make it even more worse, with more people on the ground. It's already an unsafe work zone but backup alarms help significantly and national statistics prove it.
Per the research John did, OSHA (included in board packet and attached to minutes) says it's unadvisable practice to disconnect backup alarms for night paving work, and doesn't consider spotters as a viable option.

Paul van Orden states that, traditionally, when we have paving projects, the only problems he can recall about back up alarms was on Powell Blvd, due to close proximity to neighbors. There is not a record of complaints for paving operations, and feels that for these very specific types of work it makes logical sense.

After receiving questions from Carol Gossett, John indicates that he envisions paving projects don't include the condition regarding backup alarms, document any complaints, along with the response to the complaint and at the end of the year the board could look at it and reassess. He asks that, due to the dangers on all on major roadways next to traffic. John would suggest the Board consider the pilot program to be evaluated project by project and include more upfront work communicating with neighbors. He then clarifies a question raised by Melissa Stewart as to why smart alarms are not a viable option. He explains that smart alarm volumes adjust with background noise, but there is insufficient time for smart alarm to coordinate with background noise, and get to a sufficient volume and adjust to differences in sound levels.

Kerrie asks about last month's decisions that removed the condition about backup alarms for all 3 ODOT projects heard. David then explains that they adjusted the conditions after getting John's letter earlier in the month. Kerrie asks about the possibility of getting data on broadband versus tonal alarms types. He is told that data is available. They can provide data used on different types of equipment, and type of complaints. Possibly, Kerrie says, they can gather data on which type of alarm garners more complaints. He is informed by

Julie and John that the contractor has no ability to even know what type of alarm each delivery truck has.

There are contractors that don't bid when this condition is included. This means less competition and his association is here to promote competition and worker safety.

Julie asks if we need the pilot project.
David says that their work is figuring out what conditions they impose and they look at specific work at specific location and proximity, and isn't sure what they would learn from a pilot project. David is persuaded that, most especially on highways, it makes sense to allow backup alarms.

It makes sense on highway projects and they have to look carefully at each situation and adjust on a case-by-case basis.
Board is persuaded by argument.

Kerrie wants to know if we need to re- evaluate other previously granted permit.

Julie Greb proposes a resolution that the Noise Review Board no longer include disconnection of back up alarms for mobile paving operations from here on out and NRB takes it on a case by case basis instead.

Melissa Stewart seconds.

Resolution passes unanimously - 5-0

David informs Paul van Orden/Noise Office that "should ODOT or the Asphalt Pavers Association bring any previously issued variances to you that have not been constructed, you are authorized to make that change."

Hold for Noise Task Force
This did not happen

Discussion on the Noise Review Board work plan for 2016

General Open Public Testimony

Page Stockwell from the NorthWest District Association Board is here to support the study and possible code changes regarding garbage truck noise.

Gunnar Sacher from the Eliot Tower Homeowners Association is also here to support the NRB in looking at garbage truck noise. He also offers to help, and be a member of a subcommittee (If one is formed)

Paul van Orden gives a brief background on the issue, as follows:
Garbage truck dialogues first occurred in 1999 & 2000. Garbage noise issues were identified as a growing problem for Portland. It has only has gotten worse since then. When the problem was first identified, a Task Force worked for a year, went to Council with a set of recommendations. Although it was well received but Council was uncomfortable at that point with moving most of the recommendations forward (with exceptions of glass pick-up, and backup alarm limits). The concept of commercial franchises was looked at during this time. Council asked the NRB to look at the issue again later. Paul feels that this is a good opportunity to get more info and bring this back to Council.

Tonight's agenda item is to identify priorities and Paul recommends this one.

Gunnar Sacher

- It's hard to know where to get help as a citizen
- This issue keeps coming back
- Quality of living suffers with multiple pickups every night due to the different rules for residential, mixed use and commercial properties

Page Stockwell

- Every year, the NWDA Safety and Livability Committee passes a resolution dealing with garbage truck noise in their work plan. He feels this is one of the most frequent complaints he hears in the city.
- In 2008 NWDA sent a letter to Mayor Potter supporting a garbage franchise system. He also says that it makes sense from a non-noise standpoint, by reducing pollution and wear & tear on roads.
- NWDA recommended in 2014 that all residential and any mixed-use 100 feet from residential locations be limited to pick-up only between the hours of 7:00 am and 10:00 pm.

The Noise Review Board wants to study this again this year.

Next steps include:

- Inviting BPS staff to talk to NRB at an upcoming meeting to provide information as to how garbage issues are handled.
- Find out what other cities are doing. What are they actually enforcing?

- Collect policies, codes and the results of the previous task force study.
- Analysis of who the major players are, such as the Builders & Managers Association, Portland Business Alliance, Neighborhood Associations, and Business Associations.

Paul & David will get together to determine which cities to contact and how best to find the proper person in each city to obtain more details.

Kathy will send the Task Force Study link to NRB, along with Page & Gunnar tomorrow. She will also send the link to the Boards & Commissions application.

Approve minutes from the December 9, 2015 meeting of the Board

Kerrie Standlee has amendments and a recommendation that if there is no public testimony given, include in the minutes that no public testimony was received.
Amendments:
All conditions included by applicant (ODOT and BES, for example) shouldn't be cut and paste from their mitigation suggestions, and instead, be more tailored to the specific project. From now on remove areas not applicable to the project, instead of leaving them all intact as given.

Strike conditions I- and H from all 3 ODOT permits from January minutes.
He will approve the minutes with the understanding that changes be made that are not applicable in the specific project.

Julie Greb makes a motion to approve minutes as corrected. Carol Gossett seconds.
Motion passes 5 – 0

Adjournment: 7:30
Kerrie moves to adjourn
Carol Gossett seconds
Motion passes 5 - 0

Oregon
Kate Brown, Governor

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Oregon Occupational Safety and Health Division
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October 20, 2015

John Hickey
Executive Director
Asphalt Pavement Association of Oregon
5240 Gaffin Rd SE
Salem, OR 97317

Hello John,

Question:
This question is submitted by the Asphalt Pavement Association of Oregon, and the Oregon Department of Transportation (contacts for this issue being Joseph Squire, ODOT Construction and Materials Engineer, and Shelli Romero, Interim Area Manager Region 1).
Background: Some noise ordinances and permit conditions require paving contractors to disconnect manufacturer-installed backup alarms on vehicles and construction equipment for nighttime paving work. We want to know whether Oregon OSHA believes that disconnecting manufacturer-installed backup alarms is acceptable and advisable in light of the context of a paving project.
Whether OSHA believes it is acceptable and advisable to disconnect manufacturer-installed back-up alarms for night work on a paving project that is a mobile operation with numerous pieces if heavy equipment operating at different speeds and without fully enclosed barriers surrounding the workzone?

Answer:
Oregon OSHA generally considers disconnecting manufacturer-installed safety devices an unacceptable and unadvisable practice. The issue is typically addressed under 437-001-0760(1)(b)(D), where employers are required to ensure that employees do not remove, displace, destroy or carry off any safety device while its use is required by a safety and health rule. Under 1926.602(a)(9)(ii), earthmoving or compacting equipment that have an obstructed view to the rear must be equipped with an operational back-up alarm when used in reverse gear, or an employee who signals the operator that it is safe to do so. According to federal OSHA's Interpretation of 29 CFR 1926.602(a)(9)(ii) (January 21, 1987), "Obstructed view to the rear could include such obstacles as any part of the vehicle such as structural members, its load (gravel, dirt, rip-rap), its height relative to ground level viewing, damage to windows or side mirrors, etc. used for rearview movement of the vehicle; in addition, it could include restricted visibility due to weather conditions such as heavy fog; or work being done after dark, without proper lighting."

As mentioned, 1926.602(a)(9)(ii) provides employers two options to protect workers from struck-by material handling equipment hazards when traveling in reverse – an audible back-up alarm or a spotter. Given that the rule provides these two options, Oregon OSHA normally does not consider disconnecting a manufacturer-installed back-up alarm a violation of 437-001-0760(1)(b)(D) during times when the type of activities being performed with such equipment are conducive to the safe and effective use of spotters. In many cases, where there are multiple pieces of equipment in operation at one time and/or the level of background noise prevents equipment back-up alarms to be heard or distinguishable, Oregon OSHA considers the use of a spotter the safer option. However, in your description of the speed of a paving operation, you indicate that "Spotters cannot keep up with the fast moving equipment." In such cases, where the speed of the operation is too fast for a spotter to keep up with earthmoving or compacting equipment, Oregon OSHA would not consider the use of a spotter a viable option.
Please note, regardless of Oregon OSHA's determination of a rule violation in such matters, employers (end users) are still responsible for following equipment manufacturers' recommendations and specifications to prevent product warranty and liability issues.

Best regards,

Tom Bozicevic
Technical Specialist
Oregon OSHA
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ASPHALT PAVEMENT
ASSOCIATION OF OREGON

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September 30, 2015

Paul van Orden
Noise Control Officer
City of Portland
1221 SW 4th Ave Ste 110
Portland OR 97204

Re: Considerations for Pilot Program – Allowing Backup Alarms for Night Paving

Dear Paul,

This letter follows up on our meeting involving industry, ODOT, and your office, in which we talked about a possible pilot program for night paving operations within the City of Portland that would allow backup alarms.

As you know, the City Code has been interpreted to preclude backup alarms for night paving and a common paving project permit condition requires contractors to disconnect backup alarms at night. Because of City Code, ODOT contracts within the City specifically require contractors to disconnect backup alarms for night paving. For the reasons set forth below, we believe disconnecting backup alarms for paving work creates an unsafe work area and, although we appreciate that backup alarms can annoy local residents, preventing a possible annoyance is not worth the risk of killing or severely injuring a worker, and with proper notice local residents can prepare. We have contacted other agencies to gather more information regarding the importance of backup alarms in construction work areas, and will forward any relevant information we receive.

Industry and ODOT ask that you consider the points below and let us know if the City will adopt a pilot program allowing backup alarms for night paving. At the end of this letter is one possible response to people who call to complain about backup alarms for night paving.

Description of Typical Paving Operation: Typical paving projects involve multiple-miles of roadway next to active traffic lanes. Various vehicles and pieces of equipment operate within the workzone at different speeds, with some constantly entering and exiting (e.g., trucks delivering asphalt pavement).

The most common type of project includes a pavement grinder that grinds off the top of the existing road surface. The grinder is followed by a sweeper that cleans the surface. Next, is the tack truck, which is a vehicle with a relatively large tank that sprays a type of liquid emulsion on the existing surface to help bond the existing surface to the new asphalt pavement. The grinder, sweeper and tack truck operate relatively fast (more than 5 mph).

Large trucks drive from an asphalt plant with hot-mix asphalt pavement and dump the asphalt mix on top of the bonding layer between the tack truck and the paver. The paver moves over the dumped asphalt and spreads it into a relatively uniform asphalt layer. Where there is no room for trucks to dump asphalt mix in front of the paving machine, the trucks will dump the material into a material transfer vehicle and the material transfer vehicle is used to transport the asphalt mixture from the dumping spot to the paver.

Approximately three rollers follow the paver, operating in separate sections. The first is called a breakdown roller. The breakdown roller will roll in a back-and-forth pattern parallel to the roadway being paved. The breakdown roller covers anywhere from 300 to 500 feet. After the breakdown roller covers a section, it moves to the next section, and the intermediate roller then rolls the same section. When the intermediate roller is finished with that section, the finish roller then rolls the section. Each roller rolls each section at different times and operates at speeds that are all significantly faster than a walking pace. The breakdown and intermediate rollers also vibrate as they roll, which creates a loud humming-type noise.

Almost every paving project will have areas where paving cannot be done by machine (e.g., sharp corners and areas with posts or other features that would block a paver or roller). Laborers pave those areas by shoveling and tamping asphalt pavement with hand tools. Often, the laborers are working directly adjacent to the paving machine and the rollers.

It is critical for a paving operation to move quickly because typical hot-mix asphalt pavement must be placed and compacted while it is very hot. Minutes matter. As such, trucks carrying asphalt from the asphalt plant to the project, must get to the project quickly, deliver the asphalt mix, and then get back to the plant quickly to get another load of asphalt mix. Everyone on a paving project is aware that time is of the essence.

Important Factors

1. **Night Work & Lights:** To lessen the impact on the traveling public caused by active construction workzones, paving is increasingly being performed at night, especially in urban areas. Often, paving contractors cannot shut down a travel lane until traffic has dropped below a certain level because owners want to minimize traffic delays and it is dangerous to have workers setting up traffic control devices when any more than a few vehicles are traveling a roadway. Once traffic has dropped below an acceptable level, the contractor will set up traffic control devices and begin the paving operation. Travel lanes typically must be open before traffic levels start to rise for the morning commute (about 5:00 am).

   The restrictions on when work may start and stop severely restricts the amount of paving that may be performed in a night shift. Essentially, paving contractors are left with one-half of a typical work day when performing night paving. Additionally, under the standard Oregon specifications, paving typically must be completed by September 30 of each year. As a result, paving crews work with urgency that does not exist on other construction projects.

During night paving operations, contractors typically mount bright lights on the paver because it is important for the paver operator to be able to see the edges of the area to be paved. The rollers also operate with bright lights because it is important for the roller operators to see the texture of the asphalt pavement they are rolling. As a result, there are sections of night paving operations that are very well lit and sections in-between that are not. Near the paver, rollers, and some of the other equipment, strobe warning lights are ineffective because of the bright light from the lights mounted on the equipment.

2. **Varying Background Noise:** Paving projects typically happen next to live traffic lanes – cars and trucks drive within inches of most paving workzones. On a highway, for example, large trucks commonly travel at night and ignore speed restrictions. The background noise in those areas goes from almost nothing to extremely loud in seconds and with varying frequency throughout the night. Even when projects are on city streets that have smaller vehicles operating at lower speeds, adjacent buildings tend to block the dispersion of noise generated by passing traffic and amplify it in the workzone.

   The loud and varying background noise limits the effectiveness of smart alarms (alarms that vary their volume based on background noise) and spotters. The smart alarms do not have time to adjust to the wide variations (in terms of volume and timing) in background noise. Additionally, in an environment of varying background noise, the workers do not have time to recognize the backup alarm sound relative to other sounds (i.e., it is confusing to hear widely varying alarm sounds).

   Moreover, because of the background and equipment noise, some paving contractors ask their workers to use hearing protection (e.g., ear plugs). Except when background noise is at its loudest, smart alarms are ineffective when hearing protection is used. Similarly, it is very unlikely that workers or other individuals in a workzone would be able to hear a warning from a spotter in many cases whether or not they were wearing hearing protection.

3. **Speed of Operation:** As described above, paving projects cover large distances where different parts of the work get performed in different and varying locations within the work zone. Every part of the operation moves and equipment must act quickly because asphalt must be placed hot and it cools quickly, especially at night. Spotters cannot keep up with the fast-moving equipment. In most instances, the grinder, tack truck, rollers, material transfer vehicle, and mix delivery trucks all move faster than any spotter. Spotters are also difficult to see at night, especially behind the larger vehicles and pieces of equipment (e.g., the tack truck, material transfer vehicle, and mix delivery trucks), and the number that would be required would, in our view, create a more hazardous situation.

4. **Limited Safe Zones:** Paving workzones often have no safe zones. Most highways and roads must remain open to traffic during paving. Contractors are typically allowed to block off one lane using barrels and signs or other traffic control devices, and traffic either merges into any remaining lanes or uses the opposite lane to pass by the workzone. In some instances, there is active traffic on both sides of a paving operation, and in other instances, the workzone is

abutted by private or fenced property on one side and active traffic on the other. Within the workzone, heavy equipment and vehicles are used at different sections of the workzone such that the equipment and vehicles move through the workzone at varying speeds that most would consider "fast."

The constraints on the size of the workzones as well as the need for heavy equipment and vehicles to move quickly within the workzone, limit available safe zones for workers and inspectors. There is nowhere in a paving workzone that can be considered completely safe. We believe that because of the limited availability of safe work areas, the number of individuals present in the workzone should be limited.

The use of spotters as an alternative to backup alarms would significantly increase the number of workers in a paving workzone. Almost all of the equipment has some view obstruction. Unlike building or bridge construction sites where construction operations are confined, a paving operation is spread out (often over a mile or more), and spotters would be needed at multiple locations and would need to move with fast-moving equipment, which is possibly impossible and, at a minimum, not practical. Requiring spotters increases the number of individuals that might get injured or killed in a paving workzone and does not, in our view, create a safer environment.

A related concern is pedestrians unexpectedly crossing the workzone. Almost no paving project is fenced, which makes it accessible to pedestrians. Even with night paving work, pedestrians commonly cross paving workzones. Most pedestrians have no knowledge of paving or the speed of the equipment used in paving, and it is impossible for workers concentrating on performing paving work to always be in a position to safely escort pedestrians through the workzone. Spotters and smart alarms would, in our view, be even less effective in protecting pedestrians as opposed to workers from getting crushed by paving equipment.

5. **History of Backover Fatalities:** There is a history of backover fatalities in paving workzones. Of the fatalities in and around paving workzones in Oregon this year, to our knowledge one was a backover where a worker was crushed by a material transfer vehicle operating in reverse without a backup alarm. National analyses of roadway workzone fatalities show that people die too frequently because they are backed over by construction equipment and that a significant percentage of the deaths occur when no back-up alarm was functioning. We believe that the statistics show that disconnecting backup alarms can lead to deaths.

   The Roadway Work Zone Safety and Health Partners Alliance analyzed roadway workzone fatalities and found that "in about one-third (31.1%) of backover fatalities, no back-up alarm was functioning," and about 20% of workers who were killed were wearing high visibility clothing (https://www.workzonesafety.org/files/documents/crash_data/Alliance_roadway_fatalities_graphic.pdf).

Steve Pegula of the Office of Safety, Health, and Working Conditions, U.S. Bureau of Labor Statistics, analyzed fatal injuries at road construction sites from 2003 to 2010, and reported:

> Approximately seven out of every eight workers who incurred a fatal occupational injury at a road construction site were working at the site at the time. The largest single event that led to fatal occupational injuries for these workers was being struck by a vehicle or mobile equipment. In the 8-year period from 2003 to 2010, 442 workers (53 percent) were killed at the site after being struck by a vehicle or mobile equipment.
>
> Workers are roughly as likely to be struck by construction- or maintenance-related equipment (dump trucks, bulldozers, graders, etc.) as by cars, vans, tractor-trailers, buses, and motorcycles. Workers were fatally struck 152 times by construction- or maintenance-related equipment and 153 times by the other vehicles.
>
> Vehicles or mobile equipment that was backing up posed a particular hazard. Of the 143 cases in which a worker was fatally struck by a backing vehicle or mobile equipment, 84 involved a dump truck striking the worker. This statistic is particularly notable because section 6D.03, subpart D, of the MUTCD specifically identifies limiting backing-up maneuvers as a factor in minimizing worker risk
>
> Back-up alarms were noted in 39 cases in which the worker was struck by a backing vehicle or mobile equipment. Twenty-five workers were struck by a vehicle or mobile equipment with a functioning back-up alarm; in 17 cases, the vehicle was a dump truck. Of the 14 workers who were struck by a vehicle or mobile equipment without a back-up alarm or with a nonfunctioning back-up alarm, 11 were struck by a dump truck.
>
> Workers were flagging or performing other traffic control duties in 92 cases. Of these workers, 20 were noted as wearing reflective or brightly colored clothing, such as vests, to increase visibility. Only 32 of the workers were employed as flaggers; the other 60 worked in other occupations, such as construction laborers (23), highway maintenance workers (9), and operating engineers (7).

Steve Pegula, Monthly Labor Review, November 2013 (footnotes and table references omitted) (http://www.bls.gov/opub/mlr/2013/article/an-analysis-of-fatal-occupational-injuries-at-road-construction-sites-2003-2010.htm).

Possible Response to Complaints: We understand why you are upset and appreciate the importance of a good night's sleep. However, most paving work cannot be performed during the day and workers have been killed too frequently on paving projects by vehicles without backup alarms. Because paving projects do not stay in one area for very long and because of the tragic history of deaths, the City, ODOT, and the construction industry chose to allow backup alarms for night paving work. Although it may take

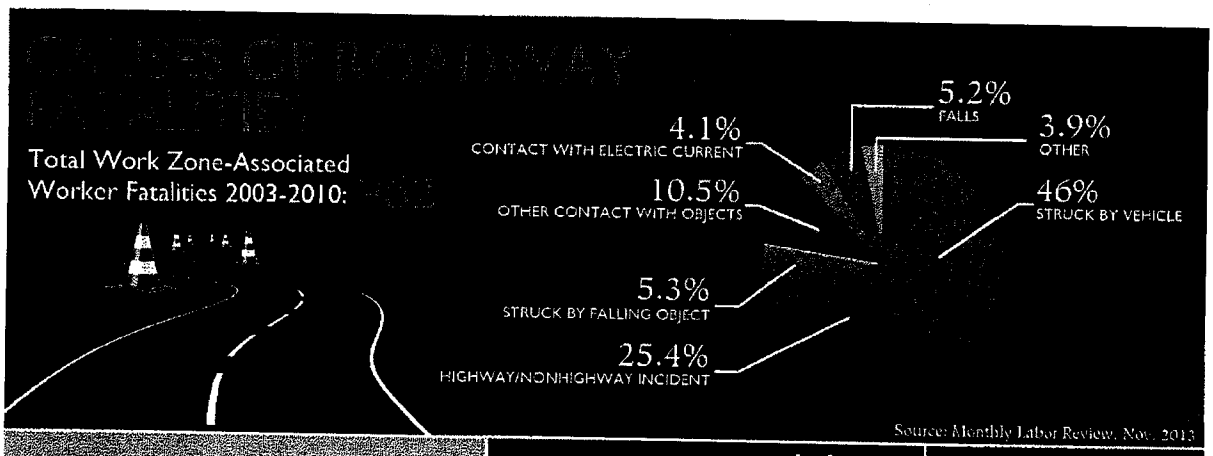
a night or two to get used to, ear plugs are effective at blocking out the noise and might be an option for you. We are willing to share the information we have about the project with you and we can have someone get back to you with the specifics of how much longer backup alarms will be used on the project.

If you have any questions or concerns, please do not hesitate to contact me.

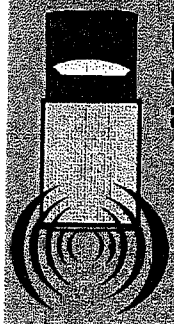
Sincerely,

John J. Hickey, P.E., Esq.
Executive Director
Asphalt Pavement Association of Oregon

cc: Joseph Squire, ODOT Construction and Materials Engineer
Shelli Romero, ODOT Interim Area Manager – West
Mark Bauer, Baker Rock Resources
Dave Alexander, Lakeside Industries
Garrett Frey, Knife River

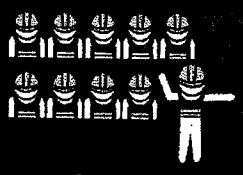


Source: Monthly Labor Review, Nov. 2013



More than half (58.7%) of backovers involve a dump truck

In about one-third (31.1%) of backover fatalities, no back-up alarm was functioning



In about fatalities, workers were flagging (3.3%) or performing traffic control duties (6.3%)

About were wearing high visability clothing

4% KILLED BY CONTACT WITH ELECTRICITY

TRENCH COLLAPSES KILLED 2.4% OF ROAD WORKERS

LESS THAN 2% OF WORKERS WERE KILLED BY A DRUNK DRIVER

FALLS TO LOWER LEVEL KILLED OF WORKERS

YET

Through the OSHA and the Roadway Work Zone Safety and Health Partners Alliance, the Alliance participants developed this graphic for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor.

alliance
An OSHA Cooperative Program