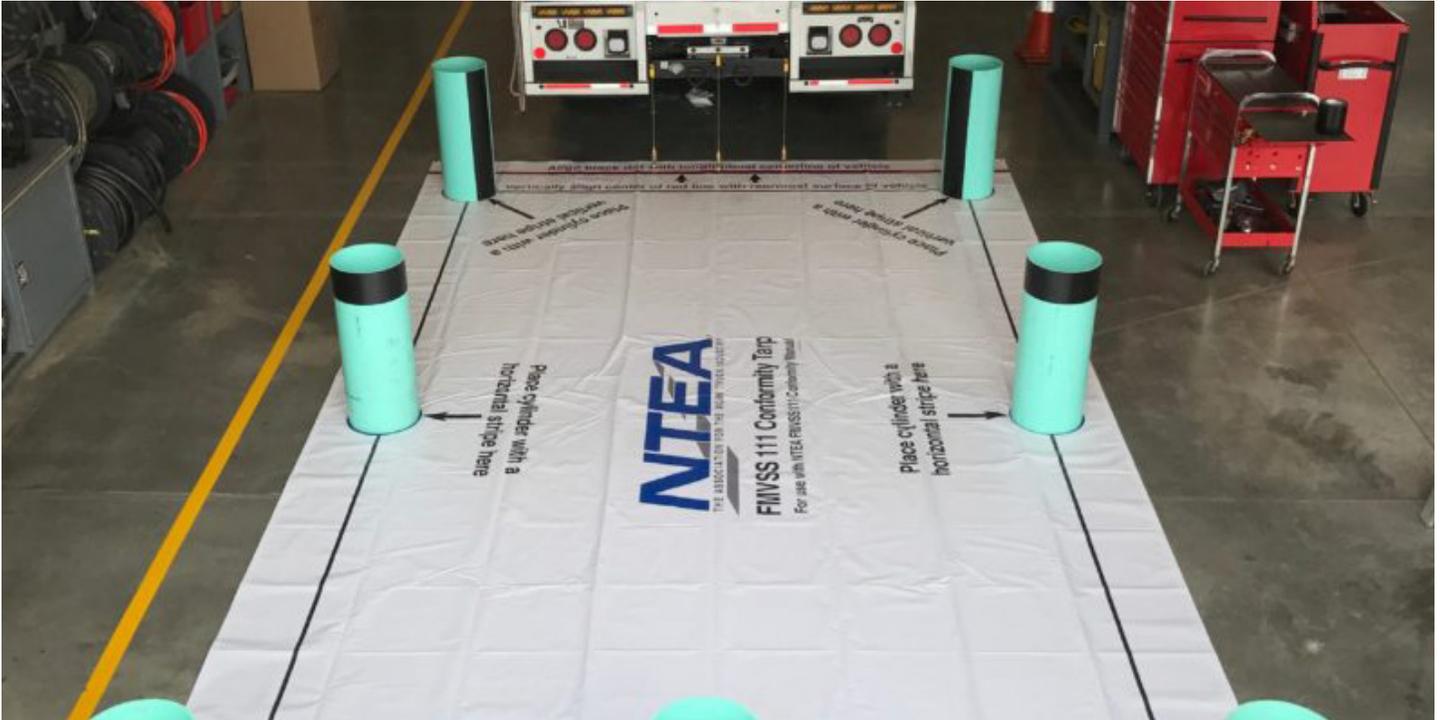




# An Oregon City Utility Tests Its Backup Cameras to Meet New Federal Regulations, and Is Surprised by the Results



**Eugene Water & Electric finds that some old cameras just don't make the grade anymore...**



Gary Lentsch, fleet manager for the Eugene Water & Electric Board (EWEB) in Oregon, knew that changes were coming to the rules governing vehicle backup cameras. NHTSA's final rule on Federal Motor Vehicle Safety Standard for Rear Visibility (FMVSS 111) doesn't require camera providers to certify that their products meet the new specifications. Instead, it is up to the entity installing the cameras on the vehicles to demonstrate compliance. Even though most of his fleet would be exempt from the new rules, Lentsch wanted to get ahead of the curve. He and the EWEB staff used the NTEA's FMVSS111 Field of View Conformity Kit to make sure the backup cameras they had already installed would meet the specs—only to discover that they would not. EWEB is now fitting and, in some cases, retrofitting its vehicles with PRECO's Mini Cams to comply with federal regulations and make fleet operations safer.

Eugene Water & Electric Board (EWEB) has a total fleet of about 350 vehicles. The fleet includes passenger cars, light-weight pickups, bucket trucks, cranes, dump trucks, backhoes, and motor graders—a typical utility fleet. As EWEB fleet supervisor, Lentsch's job is to acquire, retire, and otherwise manage the fleet. "I wear a lot of hats," he says. "I'm responsible for the shop floor, for hiring and recruiting, the maintenance programs, and just about every aspect of fleet operations."

## The Burden is On the User, Not the Manufacturer

In early 2017, Lentsch learned that National Highway Traffic Safety Administration amendments to its rule for backup cameras would take effect in May 2018. The final rule on Federal Motor Vehicle Safety Standard for Rear Visibility (FMVSS 111) specifies, among other performance requirements, that for all vehicles with a GVWR of 10,000 pounds or less, a 10-foot wide by 20-foot long area directly behind the vehicle must be visible to the operator when the vehicle is placed into reverse. Although many of the vehicles in his fleet exceeded that weight, Lentsch still wanted to make sure EWEB could meet that new standard.

One thing he quickly learned was that OEMs who build light-weight vehicles must use cameras that conform to FMVSS 111. Aftermarket companies, on the other hand, do not have to certify that the cameras they support would conform to the same rules. In other words, it is not up to suppliers to certify that their products meet the standard: That responsibility falls to the user—to organizations such as EWEB.

### Critical to Be Able to See What's Right Behind You



To test the cameras they had installed on fleet equipment, Lentsch and his team set up a 10 by 20-foot grid and used seven cylinders (see A through G in illustration below) placed along the perimeter to serve as targets for the test. The objective was for the operator to be able to see all five of the mid and rear cylinders (A, B, C, D, & E) and a 6-inch by 6-inch portion of each of the two front cylinders (F & G).

“We had been using two different brands of cameras on our vehicles,” Lentsch recalls. “Once we ran the test, we were surprised to learn that neither of them had a wide enough range of view to pass the test. So we started looking into the cameras used on OEM vehicles because we knew those vehicles had to meet the new standards. We discovered that the cameras the manufacturers used had little bubbles on them that expanded

the field of view, so we started looking for a camera like that.”

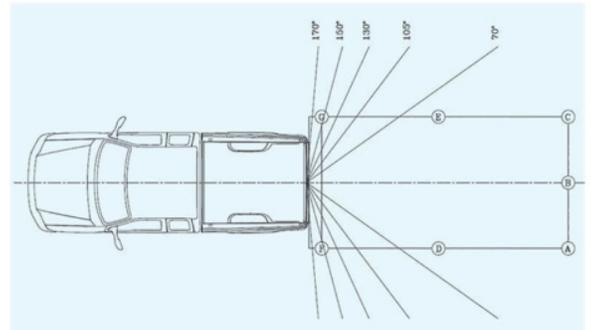
Lentsch says he also had to find a camera that conformed to FMVSS 111 standards regarding response time—how quickly, once the vehicle was put into reverse, the camera came on and presented the cab monitor with a view behind the vehicle.

### Buyer Beware

“About that time,” Lentsch says, “I went to a truck show and found all these companies saying, ‘Use our camera and be compliant with the new federal standard.’ Our calculations from the tests we ran showed that a backup camera’s view range needed to be at least 170 degrees to meet the new standards. These other cameras had ranges between 130-150 degrees—not enough to provide the required close-up view behind the vehicle. We did our research and found that PRECO’s PreView Mini Cam could go all the way up to 180 degrees—and met the response time criteria as well.”

With the realization that most cameras showed too limited a view, a little light went off.

“We’d been having just as many incidents even after we started installing backup cameras,” Lentsch says. “After we ran these tests, we realized those incidents were happening because of the cameras we had installed had this narrower view range. That meant you could put a truck into reverse and, even though you were staring into your monitor the whole time, back up right into something directly behind you.”



REC The Eugene Water & Electric Board found that it needed a wide-view camera, at least 170 degrees, to capture all the marked cylinders in its grid. Drawing courtesy of EWEB

That realization prompted Lentsch to look back at previous EWEB incident reports. When he did, he noticed that operators always blamed the camera. He says that probably not all those incidents were the camera’s fault, but he also remembers thinking to himself, “If our backup cameras had a wider view, maybe we could prevent more incidents.”

## Helping to Improve the Entire Industry



“We’re trying to educate other organizations like ours and we want them to know they have more than one choice. But the thing is, the standard has changed, and it takes a better camera to be able to perform under the standard. The old cameras just don’t cut it anymore. They were perfectly good in their day—and much better than what came before—in terms of presenting a better view behind a vehicle. But the rules and the technology are changing all the time. We need to stay ahead of the curve—and help other cities do the same.”

## Whether Your Vehicles Are Exempt or Not, Safety is Safety

Going forward, Lentsch says he has to be realistic, making sure all new vehicles comply and upgrading existing vehicles to the new cameras—but doing it as fast as a busy crew schedule and existing budgets will allow.

“Most of our equipment is technically exempt because the regulation pertains to vehicles 10,000 pounds and under, and most of our equipment is above that. We’re just trying to do our due diligence, upgrade the EWEB fleet to provide that better backup view, and share what we learn to make the whole industry safer.”

## Summary of Benefits:



- PRECO’s PreView Mini Cam meets FMVSS 111 requirements – field of view and camera/monitor projection, allowing the EWEB fleet to be mandate compliant.
- Extended camera field of view provides operators with better situational awareness.
- Once retrofitted, medium and heavy-duty equipment in the EWEB fleet will be prepared for federal vision mandates that are issued in the future.