

User Story

Clackamas County Sheriff's Office

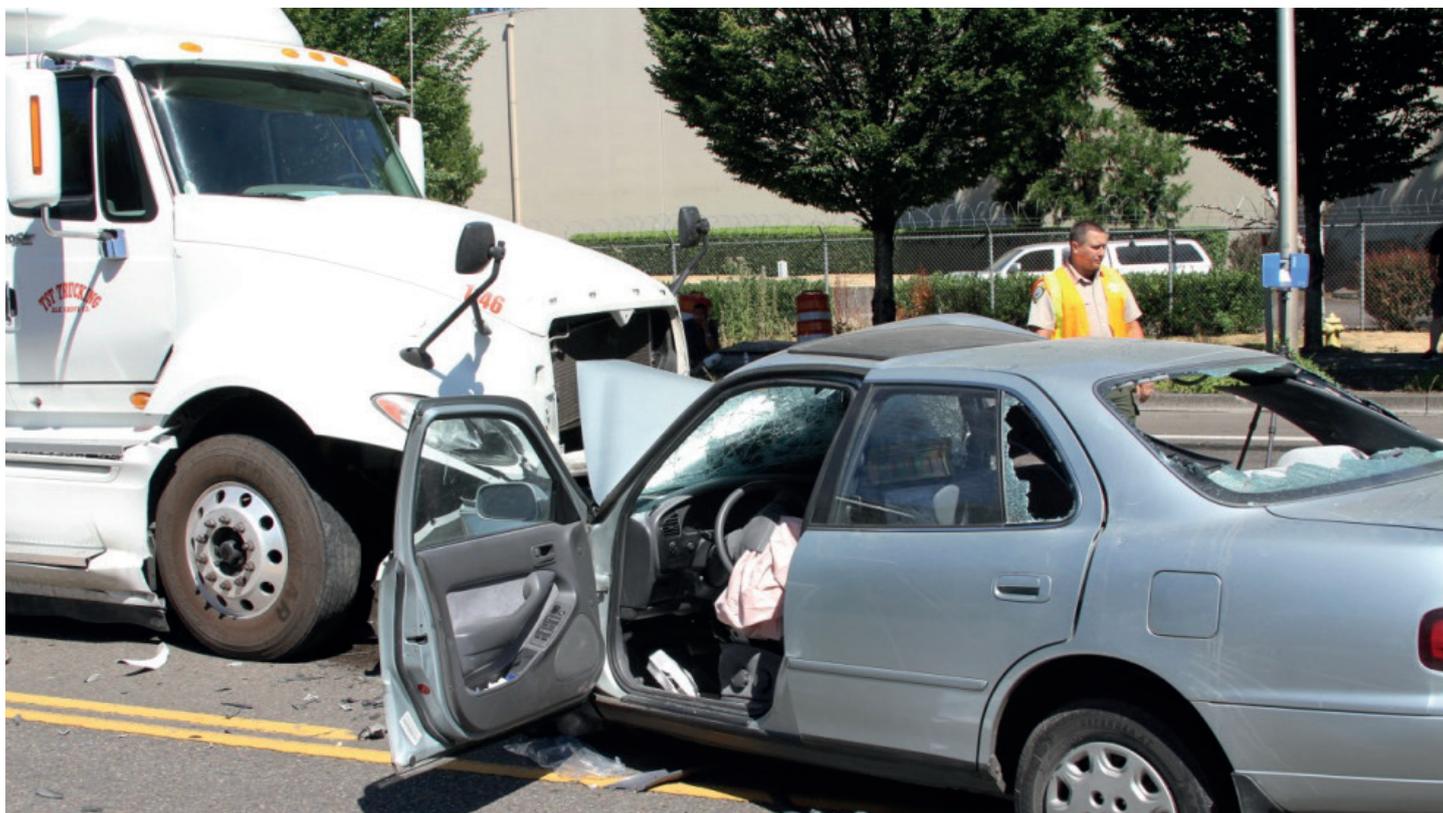


Figure 1. Crash Scene

Using 3D Laser Technology Results in Significant Savings for Interagency Investigation Team

PUBLIC SAFETY/ CRASH INVESTIGATION The capabilities of the laser scanner have allowed for a more flexible approach. Implementing the scanner has reduced roadway closure times and saved the Clackamas County Sheriff's Office significant overtime costs in just under 16 months of operation.

CHALLENGE

Fatal and serious injury crashes were causing lengthy roadway closures. The Clackamas County, Oregon CRAFT team was challenged with limiting road closure time and opening roadways faster.

SOLUTION

The interagency team with one full-time and 18 on-call reconstructionists purchased the FARO Focus^{3D} X 330 Laser Scanner.

RESULTS

The capabilities of the laser scanner have allowed for a more flexible approach to utilizing the CRAFT resources on a variety of calls, including those they otherwise had not been able to respond to prior to adopting the scanning technology. Implementing the scanner has indeed reduced roadway closure times and saved the Clackamas County Sheriff's Office more than \$28K in overtime costs alone in just under 16 months of operation.

FARO FOCUS^{3D} X 330 SCANNER ALLOWS CRAFT TO BE UTILIZED MORE OFTEN

The Clackamas County Sheriff's Office (Oregon) leads an inter-agency Criminal Reconstruction and Forensic Team (CRAFT) that includes Reconstructionists from eight different police agencies. In the past, the team used a total station to map crash scenes and a handheld distance meter for interior scenes. Today, their measurement device of choice is a Focus^{3D} X 330 laser scanner.

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www.clackamas.us/sheriff

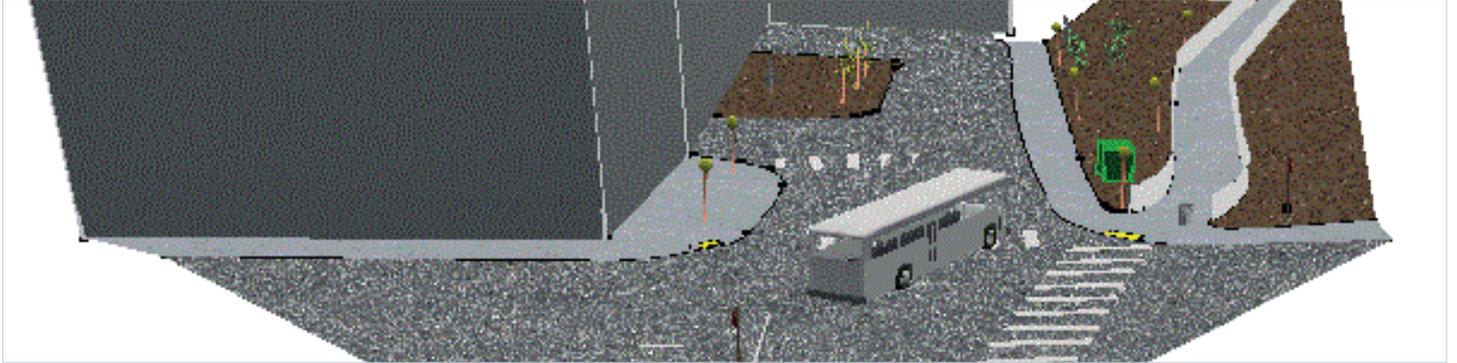


Figure 2. 3D diagram of a scene, completed in Crash Zone.

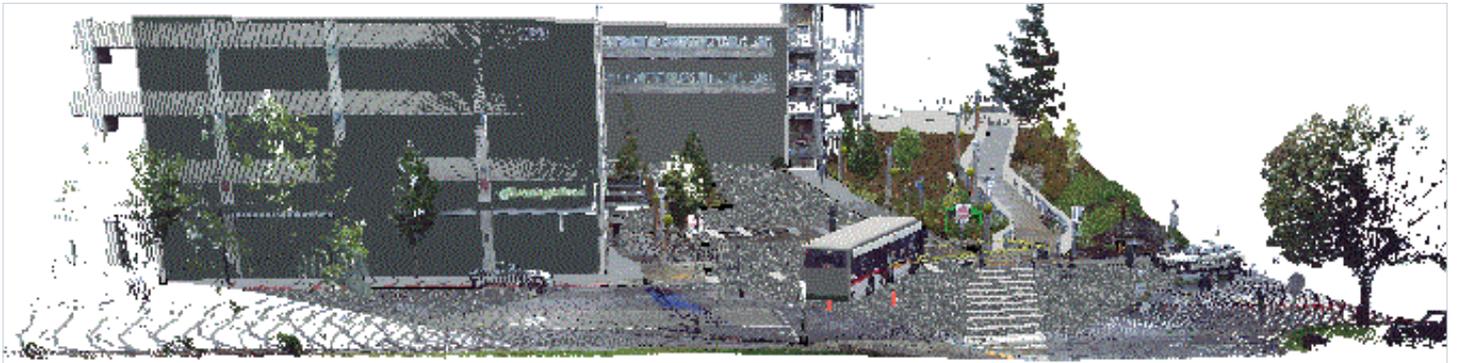


Figure 3. Point cloud of a bus-skateboarder crash scene, as captured with the scanner.



Figure 4. Bus Driver's view, as shown in the point cloud.

The Clackamas CRAFT is an inter-agency team with one full-time and 18 on-call Reconstructionists. They have traditionally been called in to investigate fatal and serious injury crashes in Clackamas County and to assist with crime-scene investigations. Now that they use the FARO Focus3D X 330 scanner, CRAFT members are able to be involved in more investigations than ever before.

The CCSO has a web page that introduces CRAFT to the community and explains their goals (www.clackamas.us/sheriff/craft.html)¹. FARO laser scanning technology helps to limit this road-closure time by speeding up the pro-

cess while at the same time making it more accurate — and at a higher level of detail — than any other method being used around the country.”

The Lake Oswego Police Department is one of the CRAFT member agencies. Lake Oswego Sergeant Clayton Simon, explains how his police agency has benefited. “The capabilities of the scanner have allowed for a more flexible approach to utilizing CRAFT resources on a variety of calls. The ability to work a scene with fewer resources and at a more efficient rate, have opened up the possibilities for more frequent use of the team. Past incidents that may not have fit CRAFT call out criteria, but were still incredib-

ly important to participating agencies, can now utilize CRAFT resources without a large cost in time or resources. As a smaller agency, this has proven incredibly valuable,” Simon said.

CRAFT is now called out to scan scenes whenever there is an officer-involved shooting, an officer-involved crash, or where a county or city liability may exist. The scanner provides the investigators with a unique ability to accurately verify line of sight issues in a crash or shooting incident. According to Criminalist O’Neil, “In an officer-involved shooting, you can position the view of the point cloud to be at the officer’s eye level. As you move through the cloud, you can see the scene exactly as they saw it.”

¹ THE SHERIFF'S OFFICE RECOGNIZES THE INCONVENIENCE THAT ROADWAY CLOSURES MAY CAUSE, AND MAKES EVERY EFFORT TO REROUTE TRAFFIC AND RE-OPEN THE ROADWAY AS SOON AS POSSIBLE.

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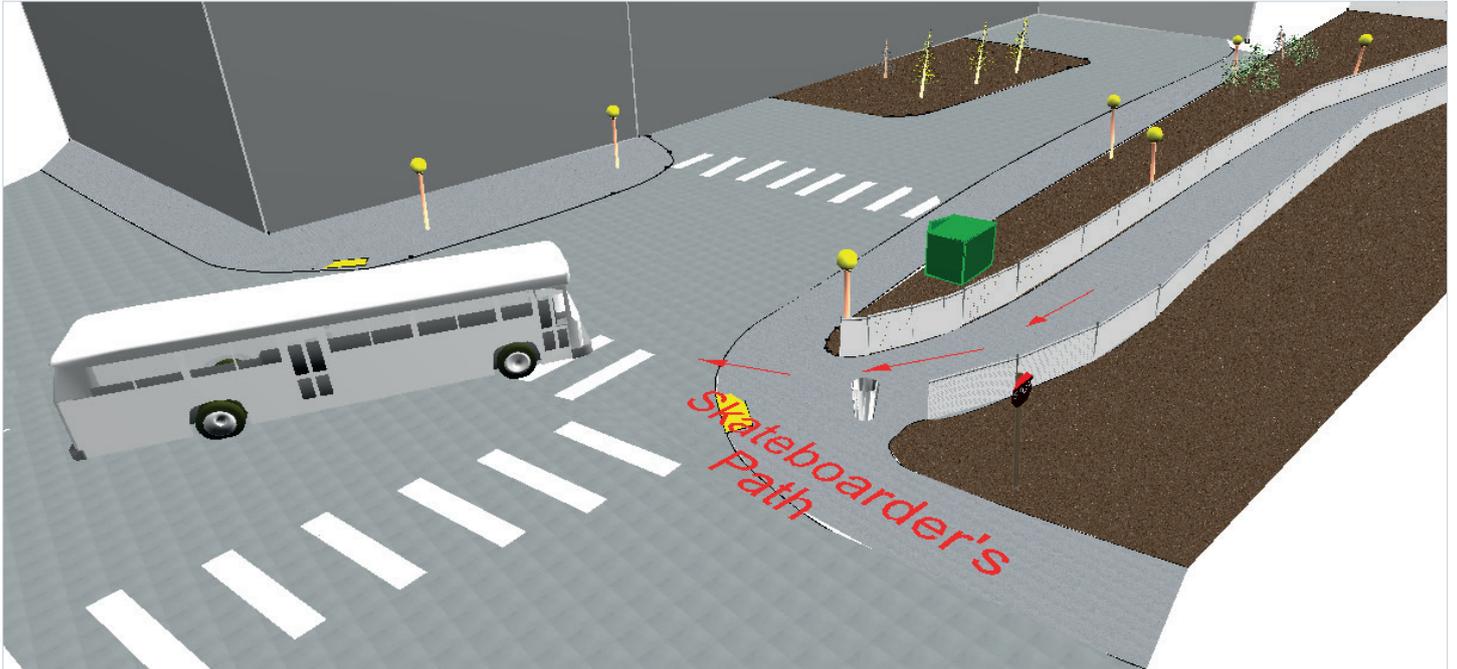


Figure 5. View of accident scene, created in Crash Zone.

O'Neil also commented on how effective the FARO scanner is at capturing crash and crime scenes, "By using the scanner, we spend less time on the scene, we get better data, and we can use a smaller crew. I prefer to have two people to set targets and move the scanner, but, if necessary, I can do it all myself." O'Neil calculated that using the FARO Focus3D X 330 scanner has saved the Clackamas County Sheriff's Office (CCSO) more than \$28,000 in overtime costs in just 16 months of operation." Better courtroom presentations created with point clouds

Two dimensional diagrams are an important part of courtroom presentations, but sometimes the case requires more. O'Neil explains, "I like to use my 2D diagrams as a quick reference in court because it's easy to explain what we found at the scene, and 2D diagrams are always accepted. When we need to show more details, like line of sight, we bring up the point cloud on a big monitor that is set up in the courtroom."

Clackamas CRAFT also purchased the FARO CAD Zone Point Cloud module add-on with their FARO Focus3D X 330 scanner. This add-on allows them to utilize their Crash Zone software to quickly create accurate, 2D, and 3D diagrams, as well as animations from the point clouds they capture in the field with their Focus3D X 330 scanner.

„Running an animation through the point cloud is my new favorite thing to do. It's so quick and easy to do in Crash Zone. When we present it in court, the animation is much more realistic. The point cloud adds a big impact and the grand juries just love it.“

BRYON O'NEIL, CRIMINALIST

CCSO investigators utilize the data that they capture with their FARO Focus3D X 330 scanner to create crash animations in FARO Crash Zone software. Officers at the scene use evidence placards to mark important data points, such as the start and end of skid marks or gouges, then investigators create their animations in the Crash Zone software so the vehicle symbols pass through each data point. This allows them to step through the animation and verify its accuracy. They can also run the animation through the point cloud of the actual scene, which creates a realistic digital replication.

O'Neil has presented some animations to grand juries, that included the point cloud data, with favorable results. He comments, "Running an animation through the point cloud is my new favorite thing to do. It's so quick and easy to do in Crash Zone. When we present it in court, the animation is much more realistic. The point cloud adds a big impact and the grand juries just love it."

CLACKAMAS COUNTY SHERIFF'S OFFICE

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SUMMARY

The Clackamas CRAFT is an inter-agency team with one full-time and 18 on-call Reconstructionists. They have traditionally been called in to investigate fatal and serious injury crashes in Clackamas County and to assist with crime-scene investigations. Now that they use the FARO Focus3D X 330 scanner, CRAFT members are able to be involved in more investigations than ever before.