

# Enhance the accuracy of evidence gathering with a 3D laser scanner

Learn how to find and apply for grants to purchase 3D laser scanners for crime or accident scene mapping and analysis

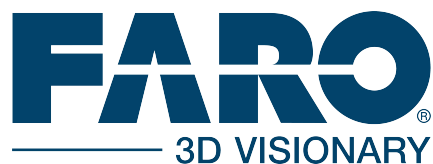


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# EDITOR'S NOTE:

Our team at [PoliceGrantsHelp](#) has put together this grant guide to better inform you and your agency where to find grants to fund the purchase of 3D laser scanners for crime or accident scene mapping and analysis and how to prepare and apply for these grants.

Following the grant writing tips and other best practices noted in this guide will help ensure that you prepare a competitive application to capture the interest of these funders.

We are your partner through this process, and we will do our part to keep you informed and educated. We hope you find this guide helpful as a first step to explore funding opportunities to support and respond to your community's needs.

Stay safe,  
Sarah Wilson  
Vice President, PoliceGrantsHelp

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# HOW TO FIND GRANT FUNDING TO PURCHASE 3D LASER SCANNERS



Grant dollars are available to support law enforcement technology purchases at the federal and state level and from private foundations.

*By Therese Matthews*

Identifying a funding source within your agency to purchase much-needed equipment is always a challenge. With shrinking budgets, rising personnel costs and competing priorities, public safety agencies are continuously balancing the resources needed to effectively perform their jobs.

Grants are a perfect solution to secure funding. Federal, state and private foundation grants are available from a variety of sources.

Which grant to apply for may depend on your use of the tools. This grants guide focuses on [3D laser scanners](#) for crime or accident scene analysis and

modeling. Some key questions to ask when preparing an application for funding are:

- Will the equipment enhance your crime scene analysis to deliver impactful courtroom material?
- Will the equipment be used for accident reconstruction to quickly improve traffic safety and minimize congestion?
- Will the equipment help you quickly measure and document a potentially toxic environment during arson investigations?

This article covers the most common grants funding sources to consider based on your intended laser scanning equipment use:

### **For Crime Scene Analysis: JAG, Coverdell and Homeland Security**

[Justice Assistance Grants \(JAG\)](#) are one of the largest sources of grant funding to support law enforcement equipment purchases. Technology improvements, forensics and enhancing prosecution are all allowable areas covered by this grant funding source.

Many local municipalities across the country receive a [local JAG allocation](#) directly from the federal government based on their share of their state's three-year violent crime average. If your county or city is a local JAG recipient, encourage your grant administrators to earmark a portion of the funding for 3D Laser Scanners.

Each state and U.S. territory also receives an annual JAG award for competitive funding that is available to local and state agencies that don't qualify for the local allocations. Most states hold annual open application periods to solicit proposals that fit into their state criminal justice plan. Reach out to your [State Administering Agency \(SAA\)](#) representative to discuss your needs and inquire about the next application period.

The Paul [Coverdell](#) National Forensic Science Improvement Grant Program is another federal funding source specifically focused on improving the quality and timeliness of forensic science and medical examiner/coroner services. This funding

must be used for one of six purposes including emerging forensic science technology. Grants are awarded two ways – on a formula basis through your [State Administering Agency](#), or you may apply directly under the [competitive grant opportunity](#). Competitive grants awards are up to \$250,000. State formula grant awards vary based on population size.

Consider applying for [Homeland Security Grants](#) if your equipment will be used for analyzing domestic or international terrorism events or other crimes that threaten your community. Most of these federal grants are received through your state's homeland security or emergency management agency, but decisions on the uses of these funds are based on local planning. Grant applications for equipment that will be used as a regional asset may receive more favorable consideration.

Grants awarded through corporate and private foundations are also excellent sources to consider. Big box stores such as [Target](#), [Walmart](#) and [Sam's Club](#) offer grants to support public safety and community wellness. Sandwich shop chain [Firehouse Subs](#) has also provided grants for law enforcement and first responder equipment across the country. National freight railroad companies such as [CSX](#), [Union Pacific](#) and [BNSF](#) administer grants with a focus on keeping the communities safe where their lines are operating.

Finally, consider reaching out to your local community foundations to see if they offer grants to support your equipment/technology needs. These private foundations focus on supporting agencies that keep our communities safe, vibrant and healthy.

### **For Accident Reconstruction: NHTSA, Section 402**

If you are planning to use the laser scanner equipment for accident reconstruction purposes, then your state's highway traffic safety funds would be the most common source for grants funding. Many states offer grants from legislatively appropriated funds, so reach out to your state transportation department to inquire whether state grant dollars are available.

Federal dollars are also passed down to states through the [National Highway Transportation](#)

**Safety Administration.** The [Section 402 State and Community Highway Safety Grant Program](#) has numerous focus areas, including improving enforcement of traffic safety laws, reducing accidents and enhancing emergency services. States typically offer grants to local law enforcement agencies through a competitive application process. Again, contact your state transportation department to inquire about how to apply for these funds.

The NHTSA grant guidelines include a requirement that products purchased with the award be made in the USA, which excludes all laser scanners currently on the market. But the program does allow for a waiver under one or more of the following conditions:

1. If application of the Buy America requirements would be inconsistent with the public interest.
2. If such materials and products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.
3. If the inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

Contact your state transportation department to inquire about how to apply for these funds and whether a Buy America waiver will be required.

Some of the nation's largest insurance companies, such as [MetLife](#) and [State Farm](#), and automobile manufacturers like [Ford](#) and [Toyota](#) and rental car companies like [Hertz](#) also administer grant programs that may be used to cover the cost of your laser scanner equipment. Your application will be favorably considered if your agency is geographically located

within their operating region or your request falls within their current priority focus.

### **For Arson Investigation: FP&S, AFG**

Fire safety grants, offered through your state or the federal government, are the most common and logical sources of funding if your department plans to use a laser scanner for arson investigations. If your state operates a fire services department or division, consider reaching out to them to inquire what grant funding is administered through their agency.

[Federal Fire Prevention & Safety Grants \(FP&S\)](#), a [FEMA program](#), include an allowable project category for fire and arson investigation. This funding source is part of the [Assistance to Firefighters Grants Program](#), which provides equipment, protective gear and training to firefighters and fire academies across the country. If your police and fire department cooperate on arson investigations, this may be available to fund the purchase of a 3D laser scanner to enhance your efforts.

Hundreds of grant opportunities are available each year to support the purchase of laser scanners and other valuable equipment for police and other public safety agencies. Whether you will use this equipment for crime scene analysis, accident reconstruction, arson investigation or other public safety purposes, knowing what funding sources are available to cover your equipment costs is a critical first step.

Following the grant writing tips and other best practices noted in this guide will help ensure that you prepare the most competitive application to capture the interest of these funders. Good luck! ■





# 4 WAYS TO GET GRANT READY

Prepare data and build partnerships now to ease the application process when grants are announced.

By Audra Thomas

One of the most important strategies for a successful grant application is to start early and gather data to support your proposal. Many administrative and program development tasks can be worked on months in advance, even if you haven't identified a specific grant to apply for.

Here are four things you can start working on now to get grant ready.

## 1 Collaborate

You may initially seek a [laser scanner](#) to do accident reconstruction for your traffic safety unit, but have you thought about the other applications for such

technology? In the public safety context, laser scanner systems are helpful for forensic crime scene reconstruction, emergency management planning and arson investigation.

Depending on the size and location of your jurisdiction, you may consider collaborating with other city/county departments or working with neighboring communities to share the technology as a regional asset. This approach can widen the potential funding sources and make the project more appealing to funders.

## 2 Gather data

Grants for laser scanners are mostly state or federal funding streams, both of which focus on evidence-

based solutions that address specific problems in your community. Use data – the more local, the better – to describe the problem and the anticipated impact that the technology will provide. To get a sense of what your agency’s problems are, review previous after-action reports for insight into the data and circumstances where a laser scanner may have been useful.

The data should be relevant to the type of grant you are seeking. For example, if you are applying for highway safety funding to use the laser scanner for accident reconstruction, you’ll want to provide the following information.

### **Describe the problem:**

- The number, types and location of accidents in your jurisdiction.
- The cost and time it takes to investigate accidents using your agency’s current methods.
- How road closures related to traffic investigation impact street cleanup/repairs, roadway congestion, economic activity, etc.
- Safety concerns for personnel.

### **Describe anticipated outcomes:**

- Cost and time savings to the department(s).
- Ability to reopen roads faster for commerce and community access.
- Overall efficiency enhancements to the criminal justice system due to more compelling and accurate evidence (i.e. reduced trial time and associated costs).

If you’re unsure about how to calculate anticipated outcome data for your agency, talk with other departments that have laser scanners to learn about their experiences since adopting the technology. Also, this is a good time to reach out to the district attorney’s office, forensic lab and the city street division to get their input and ideas about how a new laser scanner could impact their operations.

## **3 Prepare early**

Even if you haven’t decided on a specific grant to apply for, there are tasks you can do beforehand to help the grant application process go smoothly:

1. Find out if your jurisdiction is registered with the System for Award Management (SAM). As a law enforcement agency, you will need to apply as the unit of local government (i.e. the city or county) because they ultimately oversee your agency’s budget and will accept the award on its behalf.
2. SAM registration can take a few weeks and is required for all federal funding streams, including those that are “passed through” to states (and are often the source of your state’s traffic safety grants). Many agencies find SAM confusing or must navigate a local bureaucratic process to get the correct information, which is why we encourage you to start this step early so there’s not a delay when a grant application opens.
3. Identify the potential sources and types of data you’ll need for your grant proposal. While each grant application has its own requirements, it’s a good idea to start thinking about data even if you haven’t identified a specific grant.
4. Laser scanners have many different applications, so there are a few different avenues that can be pursued for grant funding. Once you’ve identified how your jurisdiction could use a laser scanner, reach out to stakeholders and ask them to start thinking about what data they currently have, which will make it easier for them to identify and pull the information if a grant opportunity becomes available.
5. Find out what other grants your department already receives and what grants the department is targeting for other projects. This helps in two ways. It may help narrow the potential pool of grants if your agency is allocating a specific grant for a specific purpose. Second, it allows you to see if there’s another project in the queue that aligns with the laser scanner request, which means your department could apply to just one grant for both projects.



## 4 Avoid common mistakes

If you have selected a grant to apply for, confirm that no other agencies in your jurisdiction are also applying to the same grant. Most grant systems will only accept one application per cycle from the same applicant, but they will often consider multiple projects within the same application. This means that if your department is requesting a laser scanner and the prosecutor's office is requesting computer upgrades, you must submit a single application or risk both applications being invalidated.

Don't forget about the local match requirements. We talk about what to costs consider in your laser scanner project budget elsewhere in this guide, but did you know that most grants require a recipient to provide a local cash match? In fact, many applications require you to describe how you will meet the match requirements, and sometimes you'll need to work with budget planners to get more details. When preparing your grant strategy, be sure to figure out where that money will come from before you apply.

Avoid thinking in a silo. Collaboration with other departments in your local government and/or with neighboring law enforcement agencies is critical.

## PRO TIP:

Keep lines of communication open with other city/county departments. If both the sheriff's office and district attorney's office have laser scanner projects, you can target the same grant with a joint proposal – just be sure to submit only one application.

Unfortunately, many agencies don't consider the cross-disciplinary uses for the desired technology, and they research and apply to grants with only one purpose in mind. Keep an open line of communication with other departments involved in public safety activities – you never know where a grant may become available.

By taking a collaborative approach, gathering relevant local data, preparing early and avoiding common application pitfalls, you'll be ready to prepare a strong application for a variety of grants. ■



# Take the cuffs off the grants process.

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# Prepare your strategy for grant application success



## BE PREPARED:

The steps involved in applying for a federal award include:

1. Applying for, updating or verifying the [DUNS Number](#).
2. Applying for, updating or verifying the [EIN Number](#).
3. Updating or verifying the [SAM Number](#).
4. Establishing an Authorized Organization Representative (AOR) on [Grants.gov](#).
5. Submitting an initial application in [Grants.gov](#) and the funding agency portal (COPS, GMS, etc.).

Check off the needed elements to submit a winning proposal, including why you need the tools, how they will benefit your operations and who will manage the application process.

By *Samantha L. Dorm*

Are you ready to start putting together a proposal to fund [3D scanning technology](#) for your agency or jurisdiction? Here are a few items to consider, starting with the type of request.

### Why do you need the technology?

What kind of funding request you intend to make is based on three categories – implementation of new equipment, equipment replacement or expanding capacity of the program. Here are the key questions for each:

#### Implementation: How are crime and traffic incident scenes currently being processed?

By writing out the steps currently taken to document evidence and associating that process to an amount of time and estimating the cost per scene, it will be

easier to create a clear problem statement to validate the need for the technology.

This process should also aid in the development of a cost-benefit statement by showing how it would improve efficiencies in the department and save money along the way.

#### Replacement: Why is the technology being replaced?

“Replacement” implies that your department has experience with this type of technology – and that you have success stories to go along with statistics that will aid in the justification for financial support.

The department must provide insight for the grant reviewer as to why you can’t just use the equipment you already have. Maintenance logs will provide an important component of this section.

Also, if the technology you are currently using is outdated and no longer supported by the vendor, it is possible that the data collected could be inadmissible in court. How would that impact cases?

#### Expanding Capacity: Is the expansion related to internal or external needs?

If considering expansion of your existing program,

grant reviewers need to understand the basis of the request. Is your department processing more scenes than it did at the time of the initial purchase? If so, what factors contribute to that increase? Some departments see an increase in crime (provide crime statistics to back this up), while others may have decided to utilize the technology for other issues such as accident reconstruction or as a part of safety planning in schools or critical infrastructure within their jurisdictions.

Expansion of capacity could also be linked to providing service to other areas. Under this scenario, mutual aid agreements may need to be in place when you submit the grant proposal. Partnerships score higher. Making equipment available to other agencies or having the same software in the prosecutor's office will enhance efficiencies, as well as your chances for a successful grant application.

### **What's in your proposal budget?**

Many departments get fixated on how much money they can apply for under a specific grant. Departments that have had the most success focus on how much is needed to complete the project correctly. In addition to the equipment purchase, do you need to budget for training? Are there on-going warranties or service agreements that need to be factored into the budget? How will you store the items? Are special cases needed to protect the equipment, especially when used in the field?

Note: It is possible that your department may need to apply for more than one grant to secure the necessary funds. The budget process allows key staff members to make informed decisions regarding pursuit of grants or if local funds can be directed to the purchase of components of the budget. For example, the department may agree to pay for the training if the grant can cover the purchase of the equipment.

### **Department Practices**

Keep in mind that successful acquisition of technology may result in the need to create additional documentation in the form of policies and procedures for its use. Does your agency have a written policy regarding evidence processing, storage of evidence or access to evidence? These all may need to be revised to include the desired technology.

It may be helpful to review existing policies prior to submission of a grant proposal to ensure that compliance will be met or to develop a timeline for the creation of new policies that will be consistent with the equipment purchase.

### **Technology Mandates**

Does your county or state require law enforcement to use specific technology? Unfunded mandates happen all the time. Use them to your advantage. Cite the language from the mandate and the deadline for compliance in your grant application to elevate the importance of your request.

### **Administrative Grant Readiness**

Federal and state grant applications are generally submitted online. Enrollment into the necessary grant portals can take three or four weeks to complete. Get started early!

Check with others in your department, along with your city/county/state finance office to determine if the needed accounts are already set up before creating new profiles.

Be sure to keep good notes about data and resources, as well as program portals, websites and passwords. ■

## **A SUCCESS STORY**

The police departments of Hurst, Euless, Bedford, Colleyville and Grapevine (in the Dallas-Fort Worth area) work together to investigate traffic incidents as the CRASH team (Combined Reconstruction and Crash Specialist of HEB). In 2017, the group successfully applied for a Justice Assistance Grant with the assistance of [PoliceGrantsHelp](#) and purchased a [FARO FocusS 350](#) scanner and [Freestyle3D](#) handheld laser scanner with the award.

“FARO was instrumental in providing a detailed quote, product knowledge and the support needed to obtain the necessary funding,” said R. Ryan Rider, Hurst Police detective and CRASH coordinator. “Grant funding is an instrumental tool in assisting agencies with additional budget dollars to obtain the current advanced technology needed in crime scene documentation.”

# 3 ways a 3D laser scanner can benefit your agency



Scan crime and crash scenes quickly and accurately for reconstruction, analysis and courtroom presentation.

**P**ainstakingly measuring and documenting the scenes of crimes and traffic accidents can be a tedious undertaking, but gathering this information is crucial to the investigative process. New technology offers a way to both accelerate and enhance the accuracy of these scene investigations.

Laser scanners, such as the [FARO Focus](#) or [Freestyle](#) series, can quickly and accurately collect millions of measurable data points at a crime or accident scene. These measurements are stored for later analysis, and the data can be transformed into a model of the scene exactly as it was at the time of capture.

Here are three ways a 3D laser scanner can help your agency process scenes more effectively and efficiently.

## 1 Capture a comprehensive record

A 3D laser scanner can greatly enhance the accuracy of evidence gathering because the entire scene is captured in millions of data points at the scene. Everything the laser can “see” is recorded, and the data points are called a 3D point cloud.

All details of the scene are captured, which provides an accurate representation of the evidence, including blood spatter, the location of artifacts, skid marks, and vehicle positions or charring patterns. You can use this point cloud later to digitally take measurements, create diagrams, animate scenes and present “walk-throughs” for courtroom presentations.

## 2 Save time, preserve evidence

Investigators can document all evidence at the scene with a laser scanner in far less time than what is required by traditional, manual methods. This is especially helpful when you need to clear the road, and unlike a dynamic crime or crash scene, the recorded point cloud never changes.

Because the data is stored for analysis when your agency is ready, you never have to return to the scene to take more measurements. Investigators and forensics specialists can use the 3D point cloud after the fact to create a model of the scene and measure locations, evaluate points of view and explore scenarios.

### 3 Recreate the scene for court

Law enforcement agencies can use the point cloud to create diagrams and animations to recreate the scene to provide visually compelling testimony in court. Prosecutors can then walk the judge or jury through the scene using a 3D model created from the point cloud to show exactly how it looked at the time of the incident.

#### FARO 3D laser scanners

FARO provides lightweight, portable and easy-to-use laser scanning tools to capture exterior and interior scenes. FARO scanners can record millions of measurements in seconds, within 1mm of accuracy.

FARO FocusS series scanners capture color images for both interior and exterior scenes, in bright sunlight or in complete darkness. They are portable and weigh less than 10 pounds, including the battery.

The handheld FARO Freestyle<sup>3D</sup> is particularly useful for capturing small details in hard-to-reach spaces at indoor scenes and outside in low-light situations.

#### How one agency is using laser scanners

In his 30-year career as a crash reconstructionist, Bobby Jones, assistant chief deputy of the Knox County, Tennessee, Sheriff's Office, has captured scenes with tape measures, total stations and now a FARO Focus laser scanner. Jones appreciates the amount of time using the scanner saves when documenting crash scenes.

"Scanners are going to become a way of life for all



of us investigators," Jones said. "They're accurate, reliable, efficient – and now they are affordable."

Jones estimates 33 minutes to scan the scene and 70 minutes from the time arrived on scene until completion of the final diagram and analysis. He uses FARO software applications to obtain critical measurements from the captured data, to analyze the crash and to create compelling exhibits for courtroom presentations.

For more information, visit [FARO's law enforcement page](#).

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